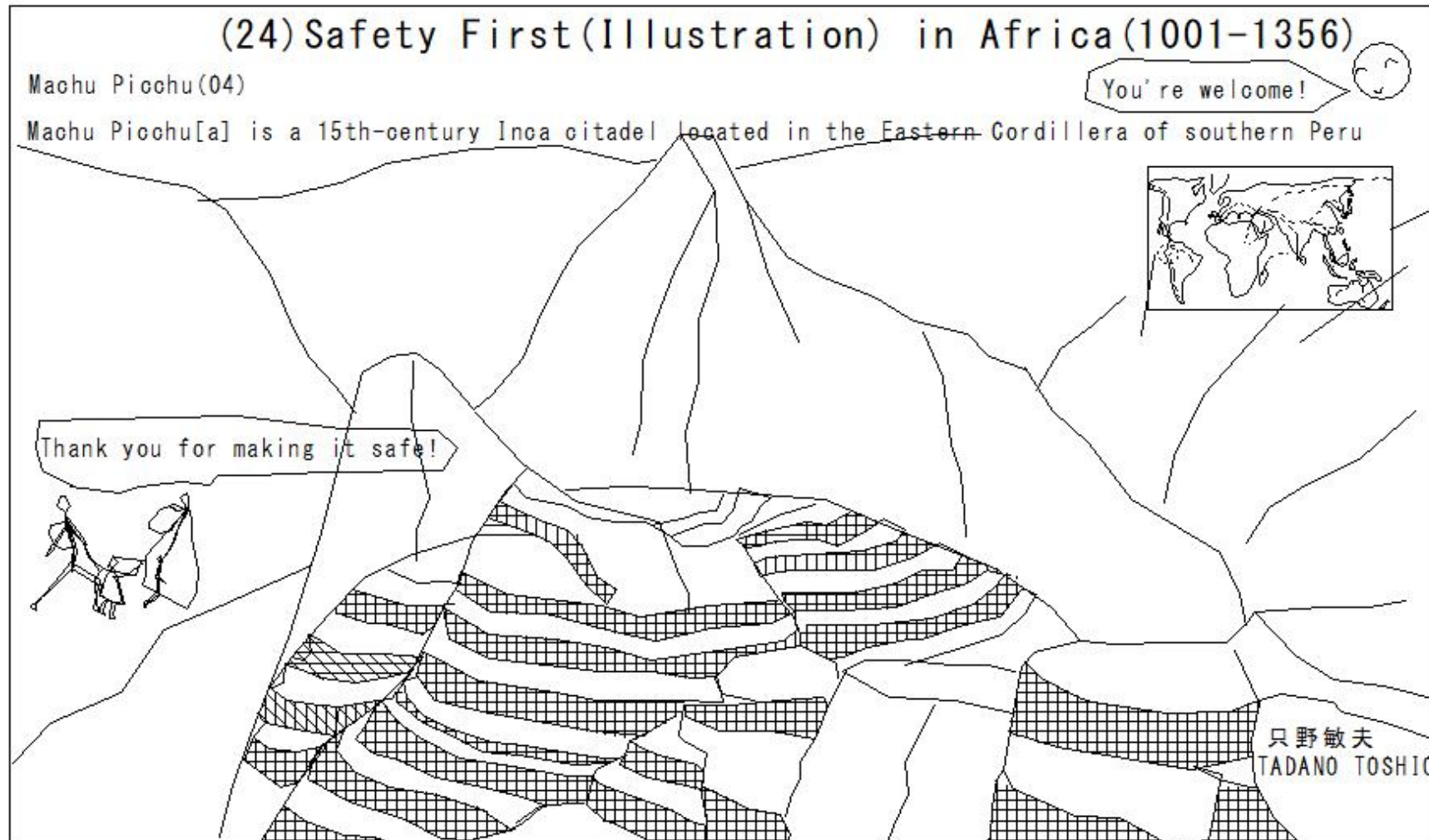


(24)Safety First(Illustration) in Africa(1001-1356)



Reference

- | | | |
|--|---|----------------------------------|
| 1 土木工学ハンドブック | 土木学会編 | 技報堂 |
| Civil Engineering Handbook | Edited by Japan Society of Civil Engineers | GIHODO SHUPPAN Co., Ltd. |
| 2 農業土木ハンドブック | 農業土木学会編 | 丸善株式会社 |
| Agricultural civil engineering handbook | Japan Society of Agricultural Civil Engineers | Maruzen Co., Ltd. |
| 3 林業土木ハンドブック | | 千代田出版 |
| Forestry Civil Engineering Handbook | | Chiyoda Publishing Co., Ltd. |
| 4 道路構造令の解説と運用 | (2003) | 社団法人 日本道路協会 |
| Explanation and operation of road structure | | Japan Road Association |
| 5 応用地質用語集 | | 東洋書店 |
| Glossary of applied geological terms | | Toyo Shoten Co., Ltd. |
| 6 実用英和対訳 土木用語辞典 | | 工学出版株式会社 |
| Practical English-Japanese translation Dictionary of civil engineering terms | | Engineering Publishing Co., Ltd. |
| 7 農業土木用語集 | | 東洋書店 |
| Glossary of agricultural civil engineering terms | | Toyo Shoten Co., Ltd. |
| 8 土木施工用語集 | | 東洋書店 |
| Glossary of civil engineering construction terms | | Toyo Shoten Co., Ltd. |
| 9 土木コンクリート用語集 | | 東洋書店 |
| Glossary of civil engineering and concrete terms | | Toyo Book Book Store |
| 10 土木用語辞典 | 東京工学会編 | 工学出版株式会社 |
| Dictionary of civil engineering terms | Edited by Tokyo Engineering Study Group | Engineering Publishing Co., Ltd. |
| 11 図解 土質・基礎用語集 | | 東洋書店 |
| Illustrated Glossary of Soil Characteristics and Basic Terms | | Toyo Shoten Co., Ltd. |
| 12 安全法令ダイジェスト | | 労働新聞社 |
| Safety Law Digest | | Labor Newspaper |

只野敏夫
Tadano Toshio

1001 (S1001) Handling of hazardous materials, etc.	Handling of hazardous materials
1002 (S1002) Handling of hazardous materials, etc.	Handling of hazardous materials
1003 (S1003) Handling of hazardous materials, etc.	Handling of hazardous materials
1004 (S1004) Handling of hazardous materials, etc.	Handling of hazardous materials
1005 (S1005) Handling of hazardous materials, etc.	Handling of hazardous materials
1006 (S1006) Handling of hazardous materials, etc.	Handling of hazardous materials
1007 (S1007) Handling of hazardous materials, etc.	Handling of hazardous materials
1008 (S1008) Handling of hazardous materials, etc.	Handling of hazardous materials
1009 (S1009) Handling of hazardous materials, etc.	Handling of hazardous materials
1010 (S1010) Handling of hazardous materials, etc.	Handling of hazardous materials
1011 (S1011) Handling of hazardous materials, etc.	Handling of hazardous materials
1012 (S1012) Handling of hazardous materials, etc.	Handling of hazardous materials
1013 (S1013) Handling of hazardous materials, etc.	Handling of hazardous materials
1014 (S1014) Handling of hazardous materials, etc.	Handling of hazardous materials
1015 (S1015) Handling of hazardous materials, etc.	Handling of hazardous materials
1016 (S1016) Management of fire, etc.	Management of fire, etc.
1017 (S1017) Management of fire, etc.	Management of fire, etc.
1018 (S1018) Management of fire, etc.	Management of fire, etc.
1019 (S1019) Management of fire, etc.	Management of fire, etc.
1020 (S1020) Management of fire, etc.	Management of fire, etc.
1021 (S1021) Management of fire, etc.	Management of fire, etc.
1022 (S1022) Management of fire, etc.	Management of fire, etc.
1023 (S1023) Management of fire, etc.	Management of fire, etc.
1024 (S1024) Management of fire, etc.	Management of fire, etc.
1025 (S1025) Fire prevention management and fire extinguishing equipment	Fire prevention management
1026 (S1026) Fire prevention management and fire extinguishing equipment	Fire prevention management
1027 (S1027) Fire prevention management and fire extinguishing equipment	Fire prevention management
1028 (S1028) Fire prevention management and fire extinguishing equipment	Fire prevention management
1029 (S1029) Fire prevention management and fire extinguishing equipment	Fire prevention management
1030 (S1030) Fire prevention management and fire extinguishing equipment	Fire prevention management
1031 (S1031) Fire prevention management and fire extinguishing equipment	Fire prevention management
1032 (S1032) Fire prevention management and fire extinguishing equipment	Fire prevention management
1033 (S1033) Fire prevention management and fire extinguishing equipment	Fire prevention management
1034 (S1034) Fire prevention management and fire extinguishing equipment	Fire prevention management

1035 (S1035) Fire prevention management and fire extinguishing equipment	Fire prevention management
1036 (S1036) Fire prevention management and fire extinguishing equipment	Fire prevention management
1037 (S1037)Blasting	Blasting
1038 (S1038)Blasting	Blasting
1039 (S1039)Blasting	Blasting
1040 (S1040)Blasting	Blasting
1041 (S1041)Blasting	Blasting
1042 (S1042) Explosives	Explosives
1043 (S1043) Explosives	Explosives
1044 (S1044) Concrete Crusher	Concrete Crusher
1045 (S1045) Concrete Crusher	Concrete Crusher
1046 (S1046) Concrete Crusher	Concrete Crusher
1047 (S1047) Tunnel	Tunnel
1048 (S1048) Tunnel	Tunnel
1049 (S1049) Tunnel	Tunnel
1050 (S1050) Tunnel	Tunnel
1051 (S1051) Tunnel	Tunnel
1052 (S1052) Tunnel	Tunnel
1053 (S1053) Tunnel	Tunnel
1054 (S1054) Tunnel	Tunnel
1055 (S1055) Tunnel	Tunnel
1056 (S1056) Tunnel	Tunnel
1057 (S1057) Tunnel	Tunnel
1058 (S1058) Tunnel	Tunnel
1059 (S1059) Tunnel	Tunnel
1060 (S1060) Tunnel	Tunnel
1061 (S1061) Tunnel	Tunnel
1062 (S1062) Tunnel	Tunnel
1063 (S1063) Tunnel	Tunnel
1064 (S1064) Tunnel	Tunnel
1065 (S1065) Tunnel	Tunnel
1066 (S1066) Tunnel	Tunnel
1067 (S1067) Tunnel	Tunnel
1068 (S1068) Tunnel	Tunnel

1069 (S1069)	Tunnel
1070 (S1070)	Tunnel
1071 (S1071)	Tunnel
1072 (S1072)	Tunnel
1073 (S1073)	Tunnel
1074 (S1074)	Tunnel
1075 (S1075)	Tunnel
1076 (S1076)	Tunnel
1077 (S1077)	Tunnel
1078 (S1078)	Tunnel
1079 (S1079)	Tunnel
1080 (S1080)	Tunnel
1081 (S1081)	Tunnel
1082 (S1082)	Tunnel
1083 (S1083)	Tunnel
1084 (S1084)	Tunnel
1085 (S1085)	Tunnel
1086 (S1086)	Tunnel
1087 (S1087)	Tunnel
1088 (S1088)	Tunnel
1089 (S1089)	Tunnel
1090 (S1090)	Tunnel
1091 (S1091)	Tunnel
1092 (S1092)	Tunnel
1093 (S1093)	Tunnel
1094 (S1094)	Tunnel
1095 (S1095)	Tunnel
1096 (S1096)	Tunnel
1097 (S1097)	Tunnel
1098 (S1098)	Tunnel
1099 (S1099)	Tunnel
1100 (S1100)	Tunnel
1101 (S1101)	Tunnel
1102 (S1102)	Tunnel

[illegible]

1103 (S1103)	Tunnel	
1104 (S1104)	Tunnel	
1105 (S1105)	Tunnel	
1106 (S1106)	Tunnel	
1107 (S1107)	Tunnel	
1108 (S1108)	Quarrying work	
1109 (S1109)	Quarrying work	
1110 (S1110)	Quarrying work	
1111 (S1111)	Quarrying work	
1112 (S1112)	Quarrying work	
1113 (S1113)	Quarrying work	
1114 (S1114)	Quarrying work	
1115 (S1115)	Quarrying work	
1116 (S1116)	Quarrying work	
1117 (S1117)	Quarrying work	
1118 (S1118)	Quarrying work	
1119 (S1119)	Quarrying work	
1120 (S1120)	Quarrying work	
1121 (S1121)	Quarrying work	
1122 (S1122)	Quarrying work	
1123 (S1123)	Quarrying work	
1124 (S1124)	Quarrying work	
1125 (S1125)	Caisson	
1126 (S1126)	Caisson	
1127 (S1127)	Caisson	
1128 (S1128)	High pressure rooms	work
1129 (S1129)	High pressure rooms	work
1130 (S1130)	High pressure rooms	work
1131 (S1131)	High pressure rooms	work
1132 (S1132)	High pressure rooms	work
1133 (S1133)	High pressure rooms	work
1134 (S1134)	High pressure rooms	work
1135 (S1135)	High pressure rooms	work
1136 (S1136)	High pressure rooms	work

[illegible]

1137	(S1137)	High pressure rooms	work
1138	(S1138)	High pressure rooms	work
1139	(S1139)	High pressure rooms	work
1140	(S1140)	High pressure rooms	work
1141	(S1141)	High pressure rooms	work
1142	(S1142)	High pressure rooms	work
1143	(S1143)	High pressure rooms	work
1144	(S1144)	High pressure rooms	work
1145	(S1145)	High pressure rooms	work
1146	(S1146)	High pressure rooms	work
1147	(S1147)	High pressure rooms	work
1148	(S1148)	High pressure rooms	work
1149	(S1149)	High pressure rooms	work
1150	(S1150)	High pressure rooms	work
1151	(S1151)	High pressure rooms	work
1152	(S1152)	High pressure rooms	work
1153	(S1153)	High pressure rooms	work
1154	(S1154)	High pressure rooms	work
1155	(S1155)	High pressure rooms	work
1156	(S1156)	High pressure rooms	work
1157	(S1157)	High pressure rooms	work
1158	(S1158)	High pressure rooms	work
1159	(S1159)	High pressure rooms	work
1160	(S1160)	High pressure rooms	work
1161	(S1161)	High pressure rooms	work
1162	(S1162)	Diving	
1163	(S1163)	Diving	
1164	(S1164)	Diving	
1165	(S1165)	Diving	
1166	(S1166)	Diving	
1167	(S1167)	Diving	
1168	(S1168)	Diving	
1169	(S1169)	Diving	
1170	(S1170)	Diving	

[illegible]

1171 (S1171) Diving
1172 (S1172) Diving
1173 (S1173) Diving
1174 (S1174) Diving
1175 (S1175) Diving
1176 (S1176) Diving
1177 (S1177) Diving
1178 (S1178) Diving
1179 (S1179) Diving
1180 (S1180) Diving
1181 (S1181) Diving
1182 (S1182) Diving
1183 (S1183) Diving
1184 (S1184) Bridges
1185 (S1185) Bridges
1186 (S1186) Bridges
1187 (S1187) Bridges
1188 (S1188) Bridges
1189 (S1189) Bridges
1190 (S1190) Bridges
1191 (S1191) Bridges
1192 (S1192) Bridges
1193 (S1193) Bridges
1194 (S1194) Bridges
1195 (S1195) Bridges
1196 (S1196) Bridges
1197 (S1197) Bridges
1198 (S1198) Oxygen Deficiency
1199 (S1199) Oxygen Deficiency
1200 (S1200) Oxygen Deficiency
1201 (S1201) Oxygen Deficiency
1202 (S1202) Oxygen Deficiency
1203 (S1203) Oxygen Deficiency
1204 (S1204) Oxygen Deficiency

[illegible]

1239 (S1239) Demolition Work for Waste Incineration Facilities
1240 (S1240) Demolition Work for Waste Incineration Facilities
1241 (S1241) Demolition Work for Waste Incineration Facilities
1242 (S1242) Demolition Work for Waste Incineration Facilities
1243 (S1243) Demolition Work for Waste Incineration Facilities
1244 (S1244) Demolition Work for Waste Incineration Facilities
1245 (S1245) Demolition Work for Waste Incineration Facilities
1246 (S1246) Demolition Work for Waste Incineration Facilities
1247 (S1247) Demolition Work for Waste Incineration Facilities
1248 (S1248) Demolition Work for Waste Incineration Facilities
1249 (S1249) Asbestos
1250 (S1250) Asbestos
1251 (S1251) Asbestos
1252 (S1252) Asbestos
1253 (S1253) Asbestos
1254 (S1254) Asbestos
1255 (S1255) Asbestos
1256 (S1256) Asbestos
1257 (S1257) Asbestos
1258 (S1258) Asbestos
1259 (S1259) Asbestos
1260 (S1260) Asbestos
1261 (S1261) Asbestos
1262 (S1262) Asbestos
1263 (S1263) Asbestos
1264 (S1264) Asbestos
1265 (S1265) Asbestos
1266 (S1266) Asbestos
1267 (S1267) Asbestos
1268 (S1268) Asbestos
1269 (S1269) Asbestos
1270 (S1270) Asbestos
1271 (S1271) Asbestos
1272 (S1272) Asbestos

[illegible]

1273 (S1273) Asbestos
1274 (S1274) Asbestos
1275 (S1275) Asbestos
1276 (S1276) Asbestos
1277 (S1277) Dust Hazard
1278 (S1278) Dust Hazard
1279 (S1279) Dust Hazard
1280 (S1280) Dust Hazard
1281 (S1281) Dust Hazard
1282 (S1282) Dust Hazard
1283 (S1283) Dust Hazard
1284 (S1284) Dust Hazard
1285 (S1285) Dust Hazard
1286 (S1286) Dust Hazard
1287 (S1287) Dust Hazard
1288 (S1288) Dust Hazard
1289 (S1289) Dust Hazard
1290 (S1290) Decontamination Ionization Law
1291 (S1291) Decontamination Ionization Law
1292 (S1292) Decontamination Ionization Law
1293 (S1293) Decontamination Ionization Law
1294 (S1294) Decontamination Ionization Law
1295 (S1295) Decontamination Ionization Law
1296 (S1296) Decontamination Ionization Law
1297 (S1297) Decontamination Ionization Law
1298 (S1298) Decontamination Ionization Law
1299 (S1299) Decontamination Ionization Law
1300 (S1300) Decontamination Ionization Law
1301 (S1301) Decontamination Ionization Law
1302 (S1302) Decontamination Ionization Law
1303 (S1303) Decontamination Ionization Law
1304 (S1304) Decontamination Ionization Law
1305 (S1305) Decontamination Ionization Law
1306 (S1306) Decontamination Ionization Law

[illegible]

1307 (S1307) Pneumoconiosis Act
1308 (S1308) Pneumoconiosis Act
1309 (S1309) Pneumoconiosis Act
1310 (S1310) Pneumoconiosis Act
1311 (S1311) Pneumoconiosis Act
1312 (S1312) Chainsaw
1313 (S1313) Chainsaw
1314 (S1314) Chainsaw
1315 (S1315) Chainsaw
1316 (S1316) Chainsaw
1317 (S1317) Chainsaw
1318 (S1318) Chainsaw
1319 (S1319) Chainsaw
1320 (S1320) Chainsaw
1321 (S1321) Chainsaw
1322 (S1322) Chainsaw
1323 (S1323) Chainsaw
1324 (S1324) Chainsaw
1325 (S1325) Chainsaw
1326 (S1326) Chainsaw
1327 (S1327) Vibration Disorders
1328 (S1328) Vibration Disorders
1329 (S1329) Vibration Disorders
1330 (S1330) Vibration Disorders
1331 (S1331) Noise Disorders
1332 (S1332) Noise Disorders
1333 (S1333) Noise Disorders
1334 (S1334) Noise Disorders
1335 (S1335) Noise Disorders
1336 (S1336) Noise Disorders
1337 (S1337) Noise Disorders
1338 (S1338) Noise Disorders
1339 (S1339) Noise Disorders
1340 (S1340) Noise Disorders

[illegible]

1341 (S1341) Noise Disorders
1342 (S1342) Noise Disorders
1343 (S1343) Noise Disorders
1344 (S1344) Noise Disorders
1345 (S1345) Noise Disorders
1346 (S1346) Noise Disorders
1347 (S1347) Vibration Regulation
1348 (S1348) Vibration Regulation
1349 (S1349) Vibration Regulation
1350 (S1350) Hazardous chemical substances
1351 (S1351) Hazardous chemical substances
1352 (S1352) Hazardous chemical substances
1353 (S1353) Health Examinations
1354 (S1354) Health Examinations
1355 (S1355) Health Examinations
1356 (S1356) Health Examinations

Noise Disorders
Noise Disorders
Noise Disorders
Noise Disorders
Noise Disorders
Noise Disorders
Vibration Regulation
Vibration Regulation
Vibration Regulation
Hazardous chemical substances
Hazardous chemical substances
Hazardous chemical substances
Health Examinations
Health Examinations
Health Examinations
Health Examinations

1249 (S1249) Asbestos	Asbestos
1250 (S1250) Asbestos	Asbestos
1251 (S1251) Asbestos	Asbestos
1252 (S1252) Asbestos	Asbestos
1253 (S1253) Asbestos	Asbestos
1254 (S1254) Asbestos	Asbestos
1255 (S1255) Asbestos	Asbestos
1256 (S1256) Asbestos	Asbestos
1257 (S1257) Asbestos	Asbestos
1258 (S1258) Asbestos	Asbestos
1259 (S1259) Asbestos	Asbestos
1260 (S1260) Asbestos	Asbestos
1261 (S1261) Asbestos	Asbestos
1262 (S1262) Asbestos	Asbestos
1263 (S1263) Asbestos	Asbestos
1264 (S1264) Asbestos	Asbestos
1265 (S1265) Asbestos	Asbestos
1266 (S1266) Asbestos	Asbestos
1267 (S1267) Asbestos	Asbestos
1268 (S1268) Asbestos	Asbestos
1269 (S1269) Asbestos	Asbestos
1270 (S1270) Asbestos	Asbestos
1271 (S1271) Asbestos	Asbestos
1272 (S1272) Asbestos	Asbestos
1273 (S1273) Asbestos	Asbestos
1274 (S1274) Asbestos	Asbestos
1275 (S1275) Asbestos	Asbestos
1276 (S1276) Asbestos	Asbestos
1037 (S1037)Blasting	Blasting
1038 (S1038)Blasting	Blasting
1039 (S1039)Blasting	Blasting
1040 (S1040)Blasting	Blasting
1041 (S1041)Blasting	Blasting
1184 (S1184) Bridges	Bridges

1185 (S1185) Bridges
1186 (S1186) Bridges
1187 (S1187) Bridges
1188 (S1188) Bridges
1189 (S1189) Bridges
1190 (S1190) Bridges
1191 (S1191) Bridges
1192 (S1192) Bridges
1193 (S1193) Bridges
1194 (S1194) Bridges
1195 (S1195) Bridges
1196 (S1196) Bridges
1197 (S1197) Bridges
1125 (S1125) Caisson
1126 (S1126) Caisson
1127 (S1127) Caisson
1312 (S1312) Chainsaw
1313 (S1313) Chainsaw
1314 (S1314) Chainsaw
1315 (S1315) Chainsaw
1316 (S1316) Chainsaw
1317 (S1317) Chainsaw
1318 (S1318) Chainsaw
1319 (S1319) Chainsaw
1320 (S1320) Chainsaw
1321 (S1321) Chainsaw
1322 (S1322) Chainsaw
1323 (S1323) Chainsaw
1324 (S1324) Chainsaw
1325 (S1325) Chainsaw
1326 (S1326) Chainsaw
1044 (S1044) Concrete Crusher
1045 (S1045) Concrete Crusher
1046 (S1046) Concrete Crusher

Bridges
Bridges
Bridges
Bridges
Bridges
Bridges
Bridges
Bridges
Bridges
Bridges
Bridges
Bridges
Bridges
Caisson
Caisson
Caisson
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Chainsaw
Concrete Crusher
Concrete Crusher
Concrete Crusher

1290 (S1290) Decontamination Ionization Law
1291 (S1291) Decontamination Ionization Law
1292 (S1292) Decontamination Ionization Law
1293 (S1293) Decontamination Ionization Law
1294 (S1294) Decontamination Ionization Law
1295 (S1295) Decontamination Ionization Law
1296 (S1296) Decontamination Ionization Law
1297 (S1297) Decontamination Ionization Law
1298 (S1298) Decontamination Ionization Law
1299 (S1299) Decontamination Ionization Law
1300 (S1300) Decontamination Ionization Law
1301 (S1301) Decontamination Ionization Law
1302 (S1302) Decontamination Ionization Law
1303 (S1303) Decontamination Ionization Law
1304 (S1304) Decontamination Ionization Law
1305 (S1305) Decontamination Ionization Law
1306 (S1306) Decontamination Ionization Law
1239 (S1239) Demolition Work for Waste Incineration Facilities
1240 (S1240) Demolition Work for Waste Incineration Facilities
1241 (S1241) Demolition Work for Waste Incineration Facilities
1242 (S1242) Demolition Work for Waste Incineration Facilities
1243 (S1243) Demolition Work for Waste Incineration Facilities
1244 (S1244) Demolition Work for Waste Incineration Facilities
1245 (S1245) Demolition Work for Waste Incineration Facilities
1246 (S1246) Demolition Work for Waste Incineration Facilities
1247 (S1247) Demolition Work for Waste Incineration Facilities
1248 (S1248) Demolition Work for Waste Incineration Facilities
1162 (S1162) Diving
1163 (S1163) Diving
1164 (S1164) Diving
1165 (S1165) Diving
1166 (S1166) Diving
1167 (S1167) Diving
1168 (S1168) Diving

Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Decontamination Ionization Law
Demolition Work for Waste Incineration Facilities
Demolition Work for Waste Incineration Facilities
Demolition Work for Waste Incineration Facilities
Demolition Work for Waste Incineration Facilities
Demolition Work for Waste Incineration Facilities
Demolition Work for Waste Incineration Facilities
Demolition Work for Waste Incineration Facilities
Demolition Work for Waste Incineration Facilities
Demolition Work for Waste Incineration Facilities
Demolition Work for Waste Incineration Facilities
Demolition Work for Waste Incineration Facilities
Diving
Diving
Diving
Diving
Diving
Diving
Diving
Diving

1169 (S1169) Diving	Diving
1170 (S1170) Diving	Diving
1171 (S1171) Diving	Diving
1172 (S1172) Diving	Diving
1173 (S1173) Diving	Diving
1174 (S1174) Diving	Diving
1175 (S1175) Diving	Diving
1176 (S1176) Diving	Diving
1177 (S1177) Diving	Diving
1178 (S1178) Diving	Diving
1179 (S1179) Diving	Diving
1180 (S1180) Diving	Diving
1181 (S1181) Diving	Diving
1182 (S1182) Diving	Diving
1183 (S1183) Diving	Diving
1277 (S1277) Dust Hazard	Dust Hazard
1278 (S1278) Dust Hazard	Dust Hazard
1279 (S1279) Dust Hazard	Dust Hazard
1280 (S1280) Dust Hazard	Dust Hazard
1281 (S1281) Dust Hazard	Dust Hazard
1282 (S1282) Dust Hazard	Dust Hazard
1283 (S1283) Dust Hazard	Dust Hazard
1284 (S1284) Dust Hazard	Dust Hazard
1285 (S1285) Dust Hazard	Dust Hazard
1286 (S1286) Dust Hazard	Dust Hazard
1287 (S1287) Dust Hazard	Dust Hazard
1288 (S1288) Dust Hazard	Dust Hazard
1289 (S1289) Dust Hazard	Dust Hazard
1042 (S1042) Explosives	Explosives
1043 (S1043) Explosives	Explosives
1025 (S1025) Fire prevention management and fire extinguishing equipment	Fire prevention management
1026 (S1026) Fire prevention management and fire extinguishing equipment	Fire prevention management
1027 (S1027) Fire prevention management and fire extinguishing equipment	Fire prevention management
1028 (S1028) Fire prevention management and fire extinguishing equipment	Fire prevention management

1029 (S1029) Fire prevention management and fire extinguishing equipment	Fire prevention management
1030 (S1030) Fire prevention management and fire extinguishing equipment	Fire prevention management
1031 (S1031) Fire prevention management and fire extinguishing equipment	Fire prevention management
1032 (S1032) Fire prevention management and fire extinguishing equipment	Fire prevention management
1033 (S1033) Fire prevention management and fire extinguishing equipment	Fire prevention management
1034 (S1034) Fire prevention management and fire extinguishing equipment	Fire prevention management
1035 (S1035) Fire prevention management and fire extinguishing equipment	Fire prevention management
1036 (S1036) Fire prevention management and fire extinguishing equipment	Fire prevention management
1001 (S1001) Handling of hazardous materials, etc.	Handling of hazardous materials
1002 (S1002) Handling of hazardous materials, etc.	Handling of hazardous materials
1003 (S1003) Handling of hazardous materials, etc.	Handling of hazardous materials
1004 (S1004) Handling of hazardous materials, etc.	Handling of hazardous materials
1005 (S1005) Handling of hazardous materials, etc.	Handling of hazardous materials
1006 (S1006) Handling of hazardous materials, etc.	Handling of hazardous materials
1007 (S1007) Handling of hazardous materials, etc.	Handling of hazardous materials
1008 (S1008) Handling of hazardous materials, etc.	Handling of hazardous materials
1009 (S1009) Handling of hazardous materials, etc.	Handling of hazardous materials
1010 (S1010) Handling of hazardous materials, etc.	Handling of hazardous materials
1011 (S1011) Handling of hazardous materials, etc.	Handling of hazardous materials
1012 (S1012) Handling of hazardous materials, etc.	Handling of hazardous materials
1013 (S1013) Handling of hazardous materials, etc.	Handling of hazardous materials
1014 (S1014) Handling of hazardous materials, etc.	Handling of hazardous materials
1015 (S1015) Handling of hazardous materials, etc.	Handling of hazardous materials
1350 (S1350) Hazardous chemical substances	Hazardous chemical substances
1351 (S1351) Hazardous chemical substances	Hazardous chemical substances
1352 (S1352) Hazardous chemical substances	Hazardous chemical substances
1353 (S1353) Health Examinations	Health Examinations
1354 (S1354) Health Examinations	Health Examinations
1355 (S1355) Health Examinations	Health Examinations
1356 (S1356) Health Examinations	Health Examinations
1128 (S1128) High pressure rooms work	High pressure rooms work
1129 (S1129) High pressure rooms work	High pressure rooms work
1130 (S1130) High pressure rooms work	High pressure rooms work
1131 (S1131) High pressure rooms work	High pressure rooms work

1200	(S1200)	Oxygen Deficiency
1201	(S1201)	Oxygen Deficiency
1202	(S1202)	Oxygen Deficiency
1203	(S1203)	Oxygen Deficiency
1204	(S1204)	Oxygen Deficiency
1205	(S1205)	Oxygen Deficiency
1206	(S1206)	Oxygen Deficiency
1207	(S1207)	Oxygen Deficiency
1208	(S1208)	Oxygen Deficiency
1209	(S1209)	Oxygen Deficiency
1210	(S1210)	Oxygen Deficiency
1211	(S1211)	Oxygen Deficiency
1212	(S1212)	Oxygen Deficiency
1213	(S1213)	Oxygen Deficiency
1214	(S1214)	Oxygen Deficiency
1215	(S1215)	Oxygen Deficiency
1216	(S1216)	Oxygen Deficiency
1217	(S1217)	Oxygen Deficiency
1218	(S1218)	Oxygen Deficiency
1219	(S1219)	Oxygen Deficiency
1220	(S1220)	Oxygen Deficiency
1221	(S1221)	Oxygen Deficiency
1222	(S1222)	Oxygen Deficiency
1223	(S1223)	Oxygen Deficiency
1224	(S1224)	Oxygen Deficiency
1225	(S1225)	Oxygen Deficiency
1226	(S1226)	Oxygen Deficiency
1227	(S1227)	Oxygen Deficiency
1307	(S1307)	Pneumoconiosis Act
1308	(S1308)	Pneumoconiosis Act
1309	(S1309)	Pneumoconiosis Act
1310	(S1310)	Pneumoconiosis Act
1311	(S1311)	Pneumoconiosis Act
1108	(S1108)	Quarrying work

Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Oxygen Deficiency
Pneumoconiosis Act
Pneumoconiosis Act
Pneumoconiosis Act
Pneumoconiosis Act
Pneumoconiosis Act
Quarrying work

1109 (S1109) Quarrying work
1110 (S1110) Quarrying work
1111 (S1111) Quarrying work
1112 (S1112) Quarrying work
1113 (S1113) Quarrying work
1114 (S1114) Quarrying work
1115 (S1115) Quarrying work
1116 (S1116) Quarrying work
1117 (S1117) Quarrying work
1118 (S1118) Quarrying work
1119 (S1119) Quarrying work
1120 (S1120) Quarrying work
1121 (S1121) Quarrying work
1122 (S1122) Quarrying work
1123 (S1123) Quarrying work
1124 (S1124) Quarrying work
1047 (S1047) Tunnel
1048 (S1048) Tunnel
1049 (S1049) Tunnel
1050 (S1050) Tunnel
1051 (S1051) Tunnel
1052 (S1052) Tunnel
1053 (S1053) Tunnel
1054 (S1054) Tunnel
1055 (S1055) Tunnel
1056 (S1056) Tunnel
1057 (S1057) Tunnel
1058 (S1058) Tunnel
1059 (S1059) Tunnel
1060 (S1060) Tunnel
1061 (S1061) Tunnel
1062 (S1062) Tunnel
1063 (S1063) Tunnel
1064 (S1064) Tunnel

[illegible]

1065 (S1065)	Tunnel
1066 (S1066)	Tunnel
1067 (S1067)	Tunnel
1068 (S1068)	Tunnel
1069 (S1069)	Tunnel
1070 (S1070)	Tunnel
1071 (S1071)	Tunnel
1072 (S1072)	Tunnel
1073 (S1073)	Tunnel
1074 (S1074)	Tunnel
1075 (S1075)	Tunnel
1076 (S1076)	Tunnel
1077 (S1077)	Tunnel
1078 (S1078)	Tunnel
1079 (S1079)	Tunnel
1080 (S1080)	Tunnel
1081 (S1081)	Tunnel
1082 (S1082)	Tunnel
1083 (S1083)	Tunnel
1084 (S1084)	Tunnel
1085 (S1085)	Tunnel
1086 (S1086)	Tunnel
1087 (S1087)	Tunnel
1088 (S1088)	Tunnel
1089 (S1089)	Tunnel
1090 (S1090)	Tunnel
1091 (S1091)	Tunnel
1092 (S1092)	Tunnel
1093 (S1093)	Tunnel
1094 (S1094)	Tunnel
1095 (S1095)	Tunnel
1096 (S1096)	Tunnel
1097 (S1097)	Tunnel
1098 (S1098)	Tunnel

[illegible]

1099 (S1099) Tunnel
1100 (S1100) Tunnel
1101 (S1101) Tunnel
1102 (S1102) Tunnel
1103 (S1103) Tunnel
1104 (S1104) Tunnel
1105 (S1105) Tunnel
1106 (S1106) Tunnel
1107 (S1107) Tunnel
1327 (S1327) Vibration Disorders
1328 (S1328) Vibration Disorders
1329 (S1329) Vibration Disorders
1330 (S1330) Vibration Disorders
1347 (S1347) Vibration Regulation
1348 (S1348) Vibration Regulation
1349 (S1349) Vibration Regulation

Tunnel
Tunnel
Tunnel
Tunnel
Tunnel
Tunnel
Tunnel
Tunnel
Tunnel
Vibration Disorders
Vibration Disorders
Vibration Disorders
Vibration Disorders
Vibration Regulation
Vibration Regulation
Vibration Regulation

(S1001) Handling of hazardous materials, etc.

(S1001) Handling of hazardous materials, etc.

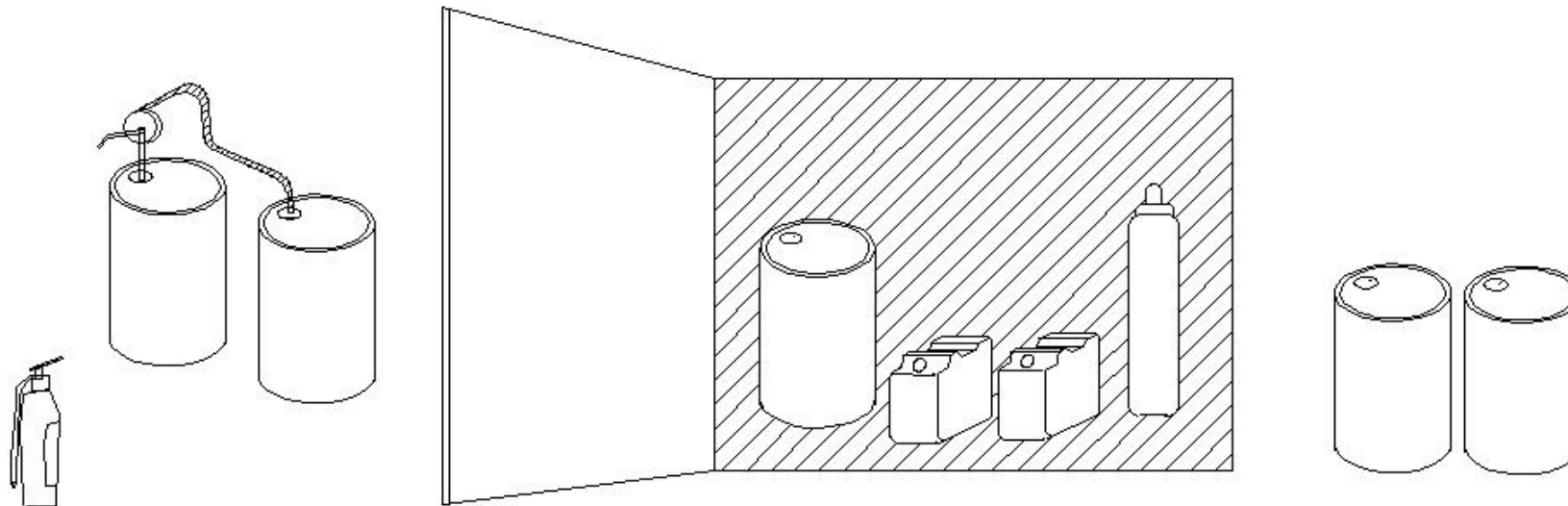
Handling of hazardous materials, etc.

Safety and Health Regulations Article 257

Appointment → Work supervisor

Work involving the manufacture and handling of hazardous materials

- ① Equipment that manufactures or handles hazardous materials and associated equipment
- ② Regularly inspect, and if abnormalities are found, immediately take necessary measures.
- ③ Regularly inspect temperature, humidity, shading, lighting, ventilation conditions, etc.
- ④ In case of abnormalities are found, immediately take necessary measures.



(S1002) Handling of hazardous materials, etc.

(S1002) Handling of hazardous materials, etc.

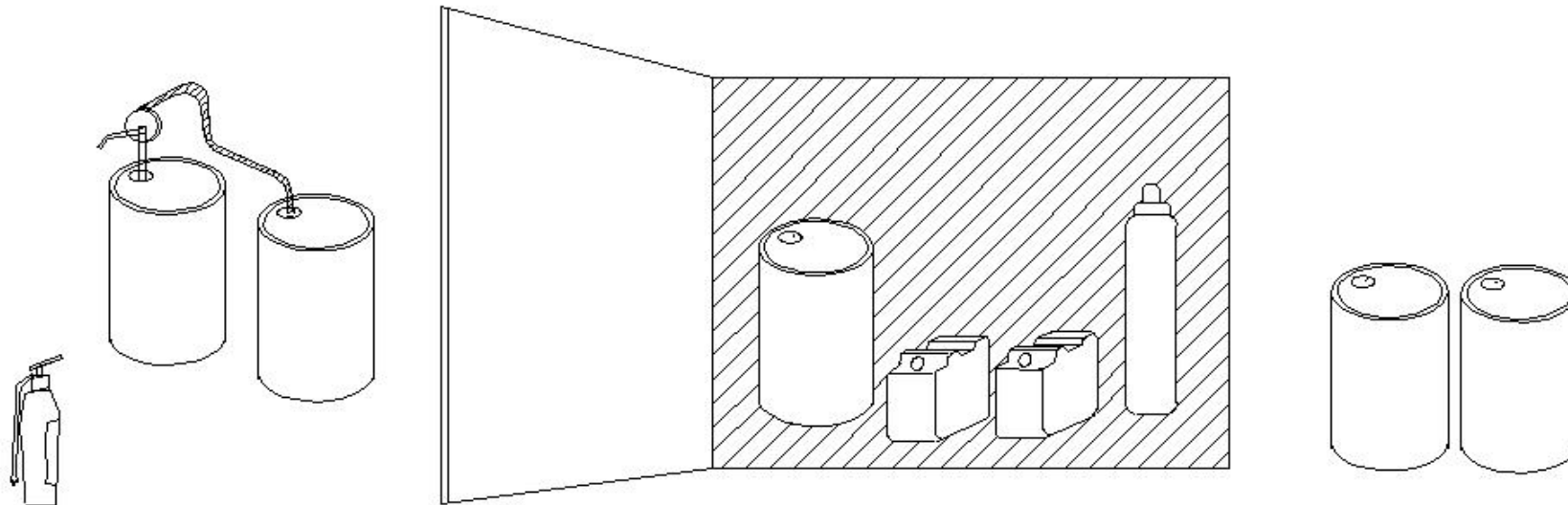
Handling of hazardous materials, etc.

Safety and Health Regulations Article 257

Appointment → Work supervisor

Work involving the manufacture and handling of hazardous materials

- ⑤ Regularly inspect the status of handling of hazardous materials, and if any abnormality is found, immediately take necessary measures.
- ⑥ Keep a record of the measures taken.



(S1003) Handling of hazardous materials, etc.

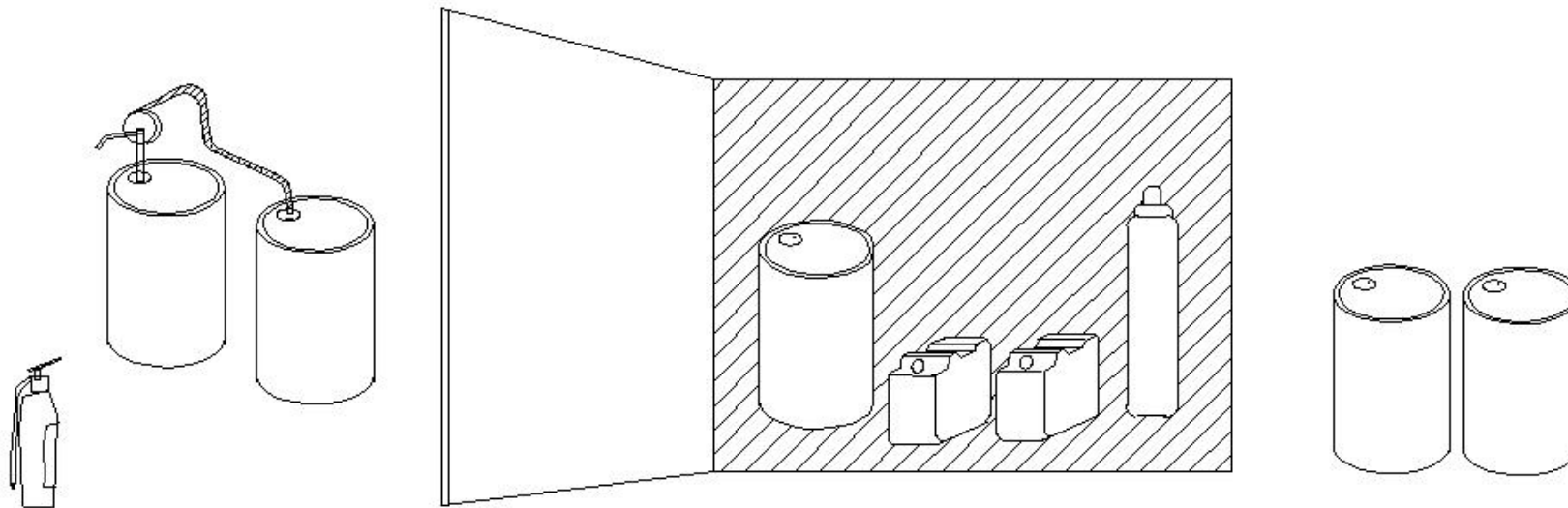
(S1003) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

Safety and Health Regulations Article 256

(Measures for manufacturing hazardous materials, etc.)

- ① Explosive materials
- ② Do not place near fire or other sources of ignition
- ③ Do not heat, rub, or impact.
- ④ Do not place in contact with water or materials that promote oxidation, or heat or impact.



(S1004) Handling of hazardous materials, etc.

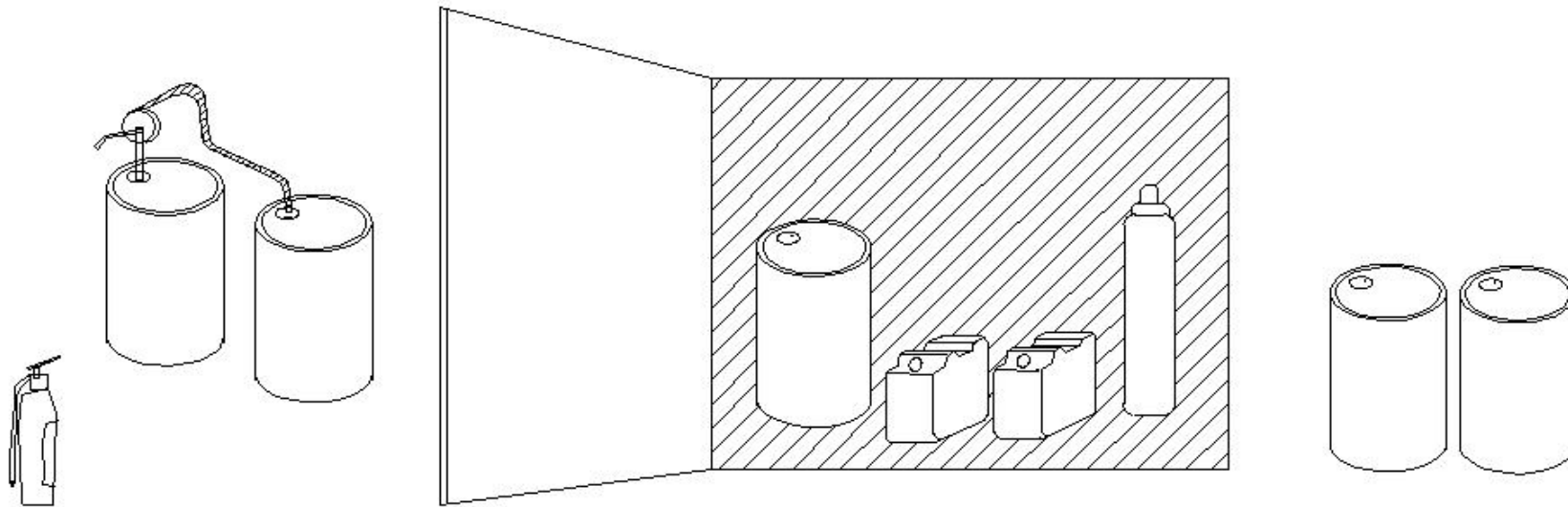
(S1004) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

Safety and Health Regulations Article 256

(Measures for manufacturing hazardous materials, etc.)

- ⑤ Do not pour, evaporate, or heat the product near flammable materials, fire, or other ignition sources.
- ⑥ Keep hazardous materials manufacturing or handling equipment areas tidy at all times.
- ⑦ Do not place flammable or oxidizing materials around the area.



(S1005) Handling of hazardous materials, etc.

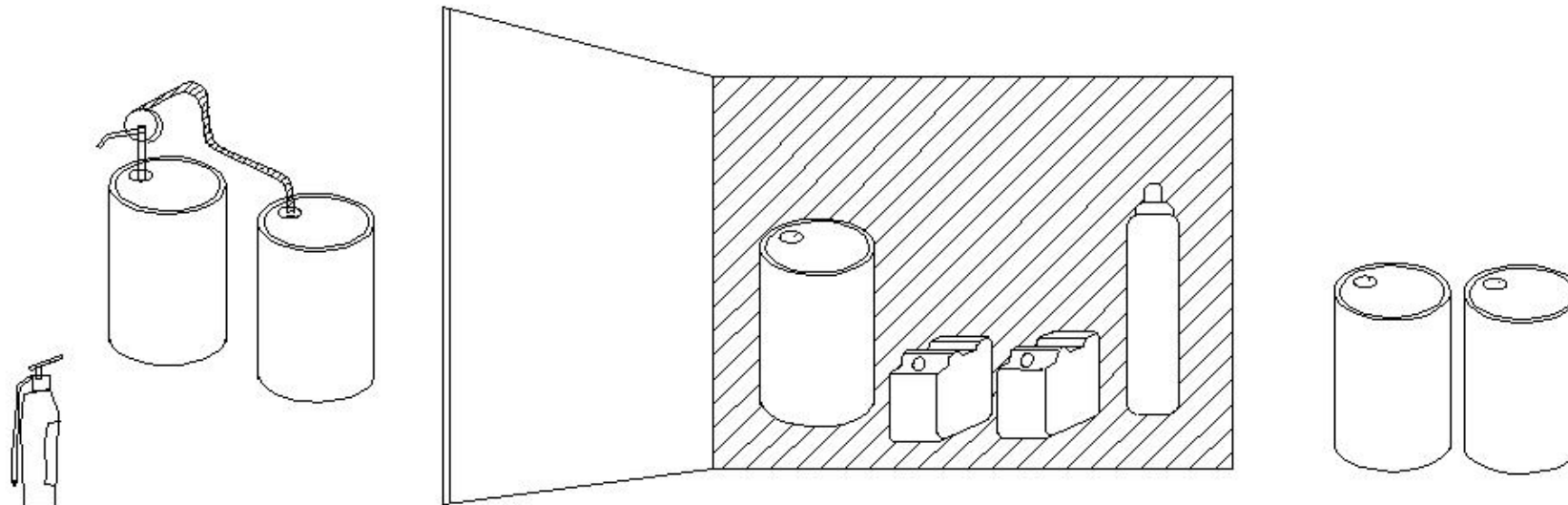
(S1005) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

(Prevention of explosions or fires due to ventilation, etc.)

Safety and Health Regulations Article 261

- ① In places where there is a risk of explosion or fire due to the presence of flammable vapor, combustible gas, or combustible dust,
- ② The employer must take measures such as ventilation, ventilation, and dust removal to prevent explosions or fires due to the vapor, gas, or dust.



(S1006) Handling of hazardous materials, etc.

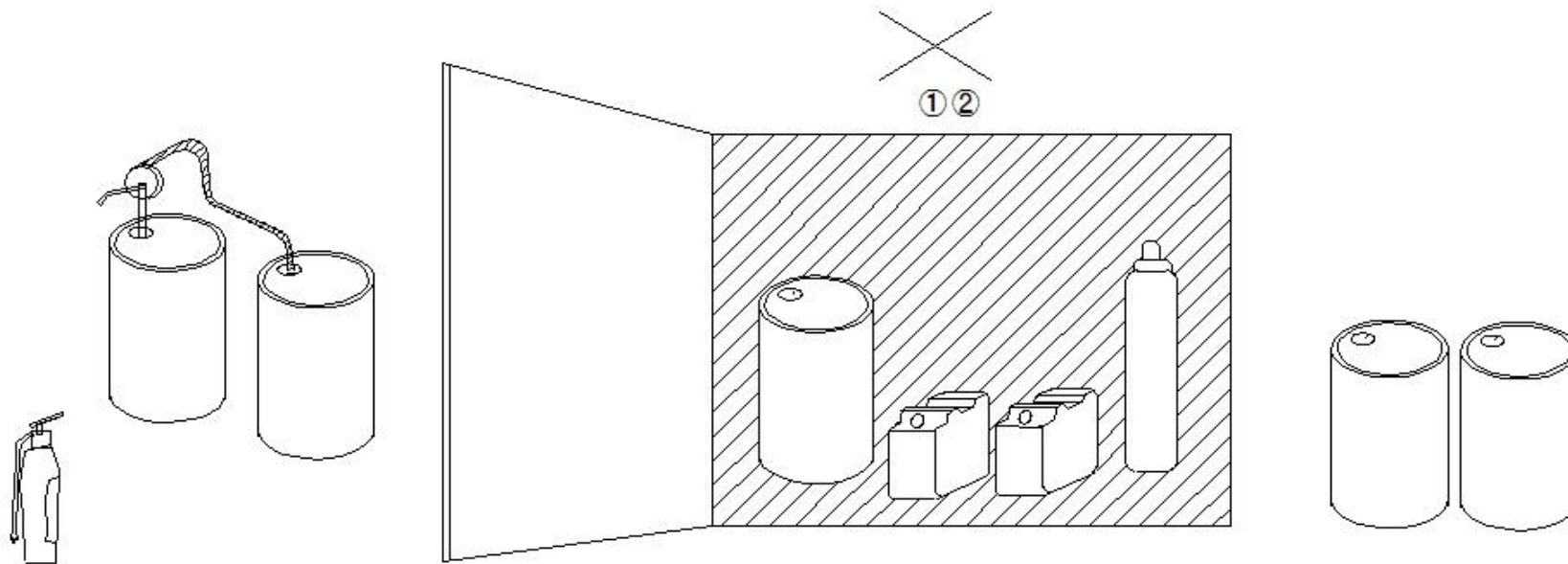
(S1006) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

(Prevention of fires, etc. caused by contact between different objects)

Safety and Health Regulations Article 264

- ① In case of there is a risk of fire or explosion due to contact between different objects,
- ② An employer must not store these objects in close proximity or load them on the same transport vehicle.



(S1007) Handling of hazardous materials, etc.

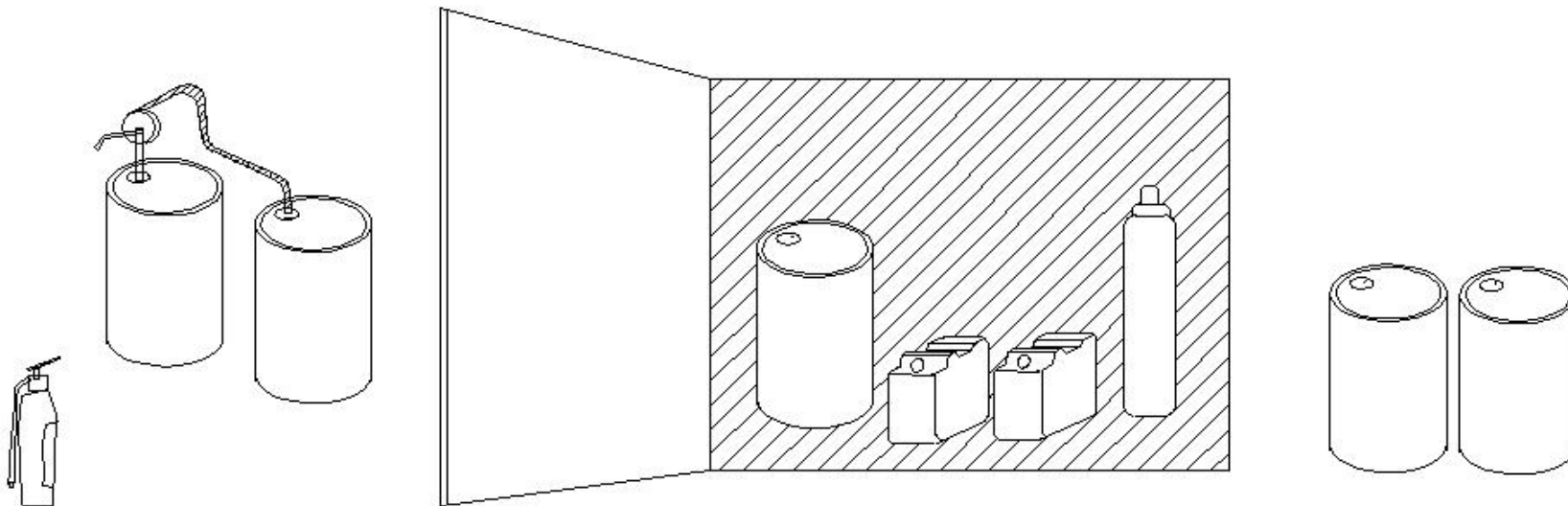
(S1007) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

(Places of work where there is a risk of fire, etc.)

Safety and Health Regulations Article 265

- ① Employers must ensure that places where work such as raising and depilling is carried out or where large amounts of cotton, wool, rags, wood wool, straw, waste paper, and other flammable materials are handled,
- ② Facilities, etc. are located or constructed appropriately to prevent fires.



(S1008) Handling of hazardous materials, etc.

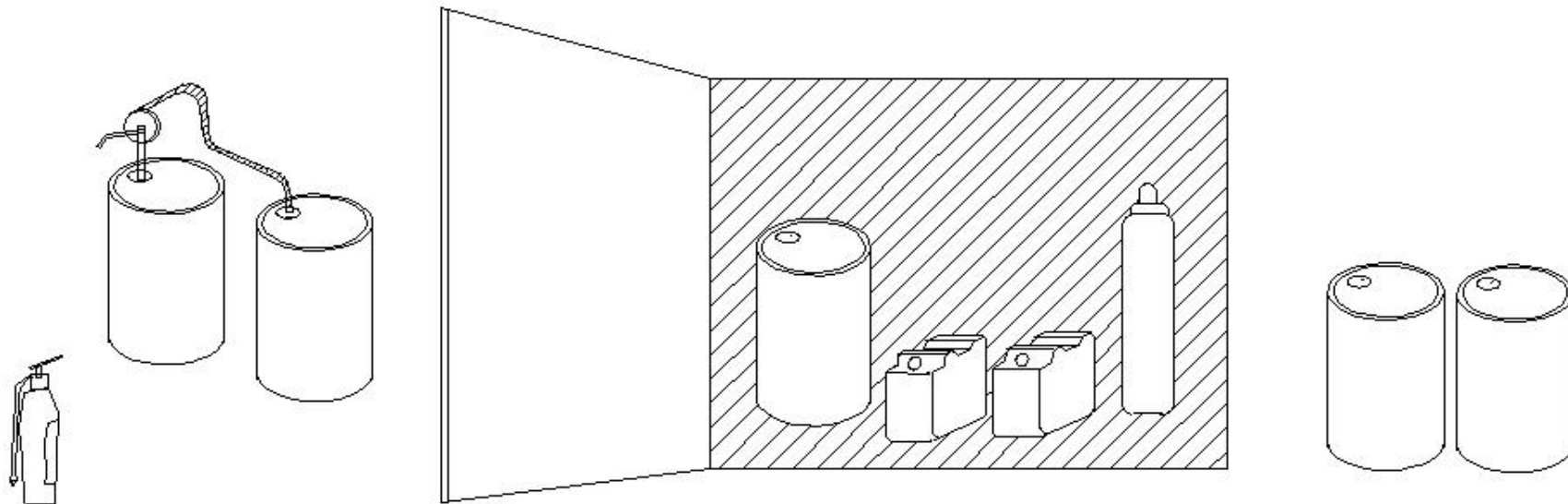
(S1008) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

(Handling of rags, etc. soaked in oil, etc.)

Safety and Health Regulations Article 267

- ① Employers must take measures to prevent fires, such as storing rags, waste paper, etc. soaked in oil or printing ink, in non-flammable containers.
- ② Measures to prevent fire, such as storing the waste in a non-flammable shell container, must be taken.



(S1009) Handling of hazardous materials, etc.

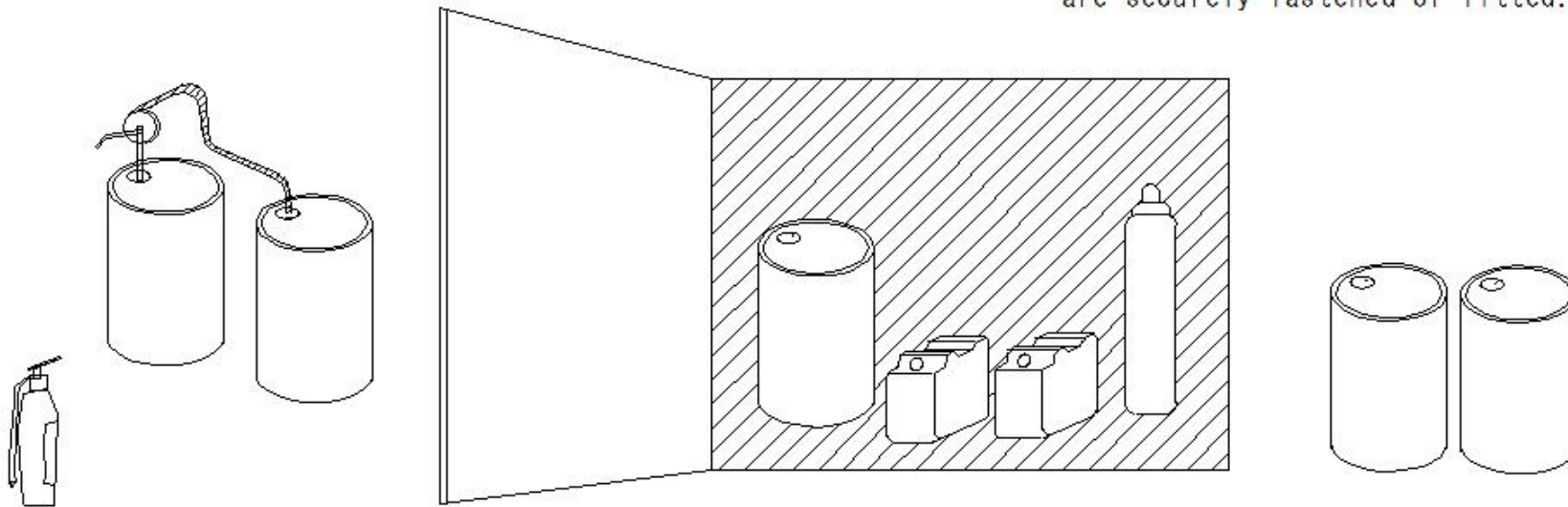
(S1009) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

(Injection of flammable materials, etc. using a hose)

Safety and Health Regulations Article 258

- ① In case of an employer injects liquid flammable materials or combustible gases
(meaning the combustible gases listed in Item 5 of Attached Table 1 of the Ordinance:
the same applies below)
- ② using a hose into chemical equipment (excluding piping), tank cars, tank vehicles, drums, etc.,
- ③ the employer must not carry out the work unless he or she has confirmed that the hose joints
are securely fastened or fitted.



(S1010) Handling of hazardous materials, etc.

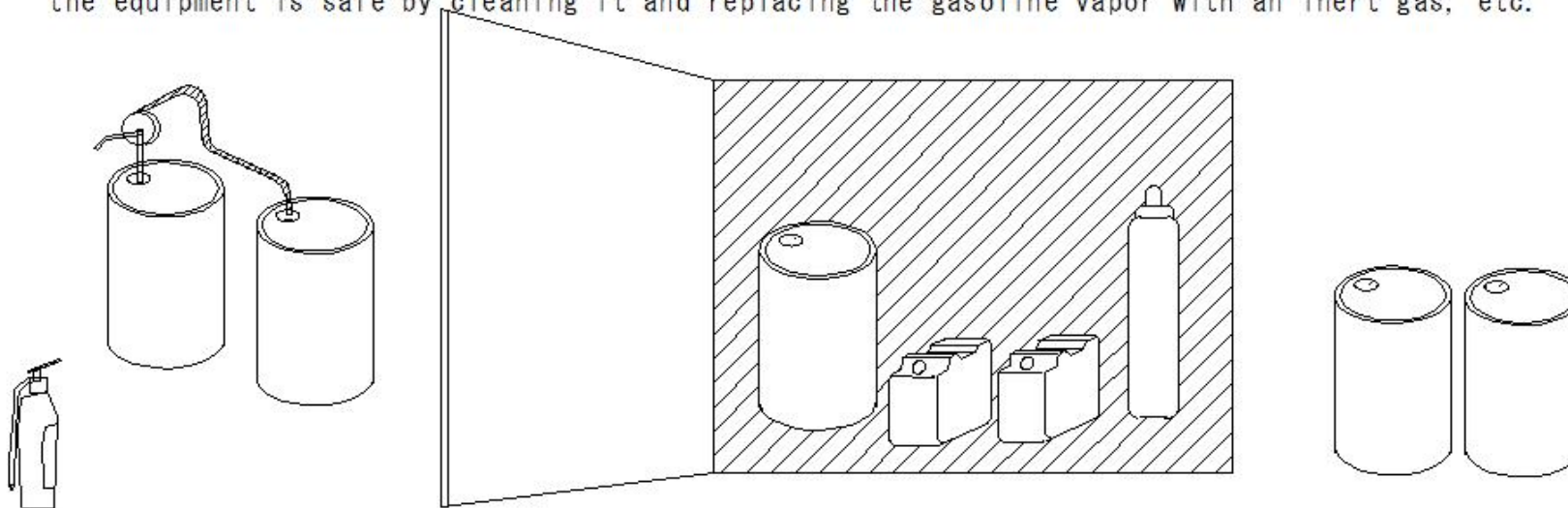
(S1010) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

(Injecting kerosene, etc. into equipment containing remaining gasoline)

Safety and Health Regulations Article 259

- ① An employer must not inject kerosene or diesel into chemical equipment containing remaining gasoline (limited to equipment storing hazardous materials, excluding piping.
The same applies in the next article)
- ② In case of injecting kerosene or diesel into tank cars, tank vehicles, drums, etc.,
- ③ The employer must not carry out the said work unless it has been confirmed that the inside of the equipment is safe by cleaning it and replacing the gasoline vapor with an inert gas, etc.



(S1011) Handling of hazardous materials, etc.

(S1011) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

Hazardous materials

Fire Service Act Article 2, Section 7

Class 4: Flammable liquids

Name • Definition

①Special flammables: Ignition point < 100°C, flash point < -20°C and boiling point < 40°C

②First petroleum: Flash point < 21°C

③Alcohols: Saturated alcohol up to C3

④Second petroleum: 21°C<Flash point < 70°C (kerosene, light oil)

⑤Third petroleum: 70°C<Flash point < 200°C (heavy oil, creos

⑥Fourth petroleum: 200°C<Flash point < 250°C (gear oil, cylinder oil)

⑦Animal and vegetable oils: Flash point < 250°C (animal and vegetable oils)

(S1012) Handling of hazardous materials, etc.

(S1011) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

Hazardous materials

Fire Service Act Article 2, Section 7

Class 4: Flammable liquids

Name • Definition

①Special flammables: Ignition point < 100°C, flash point < -20°C and boiling point < 40°C	50l
②First petroleum: Flash point < 21°C	200l (water-insoluble)/400l (water-soluble)
③Alcohols: Saturated alcohol up to C3	400l
④Second petroleum: 21°C<Flash point < 70°C (kerosene, light oil)	1000l (water-insoluble)/2000l (water-soluble)
⑤Third petroleum: 70°C<Flash point < 200°C (heavy oil, creosote oil)	2000l (water-insoluble)/4000l (water-soluble)
⑥Fourth petroleum: 200°C<Flash point < 250°C (gear oil, cylinder oil)	6000l
⑦Animal and vegetable oils: Flash point < 250°C (animal and vegetable oils)	10000l

(S1013) Handling of hazardous materials, etc.

(S1013) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

Storage volume and permission/notification

①Storage volume	②Category and type of regulation	③Addressee	④Laws
⑤Specified quantity or more	⑦Permission: Hazardous materials manufacturing, storage, handling, installation permission application	⑨Mayor of city/town/village	⑪Regulations regarding hazardous materials
⑥1/5 or more of specified quantity - less than specified quantity	⑧Notification: Small quantity of hazardous materials, storage, handling, notification	⑩Fire chief or fire station chief	⑫City/town/village fire prevention ordinance

(S1014) Handling of hazardous materials, etc.

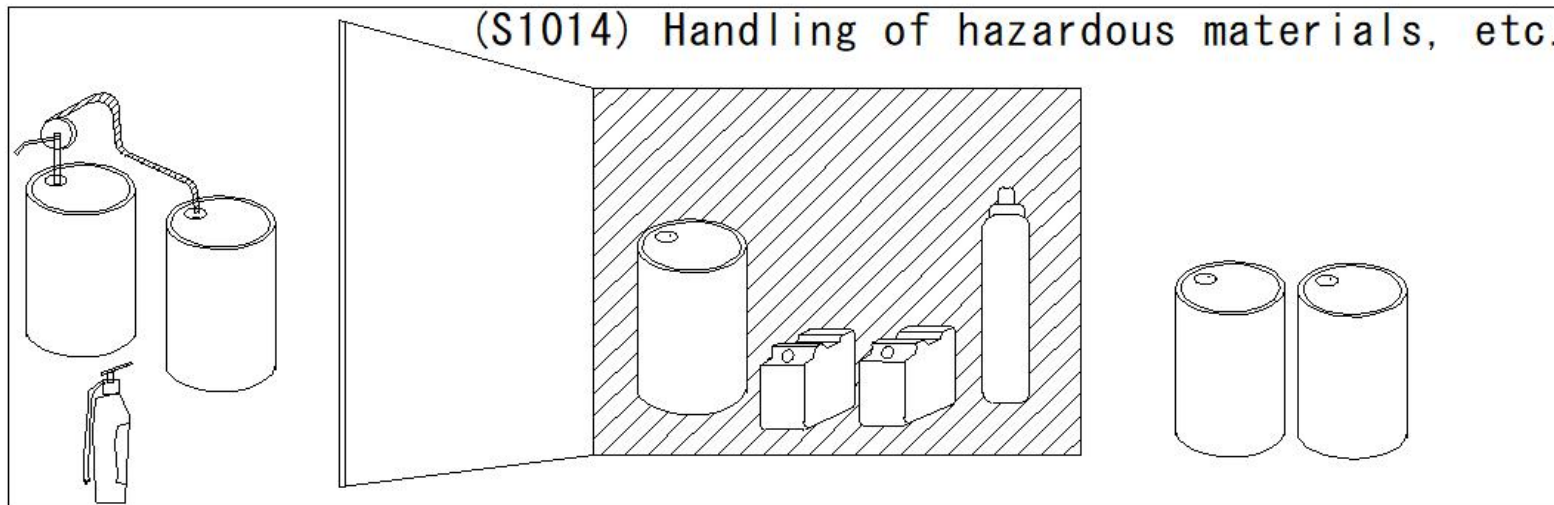
(S1014) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

Restrictions on storage and handling of hazardous materials

Cabinet Order on Regulation of Hazardous Materials, Articles 24 to 27

- ① Do not store hazardous materials other than those permitted.
- ② Do not store hazardous materials in quantities greater than a multiple of the designated quantity.
- ③ Do not use open flames without due caution.
- ④ Prevent hazardous materials from leaking, overflowing, or scattering.
- ⑤ Maintain temperature, humidity, and pressure according to the nature of the hazardous materials.
- ⑥ Dispose of hazardous material waste in a safe place.
- ⑦ Ensure that hazardous materials storage facilities have a safe distance and open space.
- ⑧ Indoor hazardous materials storage facilities are single-story buildings with eaves heights of less than 6m and floor area of less than 1000㎡.
- ⑨ Use non-flammable materials for the roof of indoor hazardous materials storage facilities.
- ⑩ Handled by qualified personnel.
- ⑪ Always organize and clean.



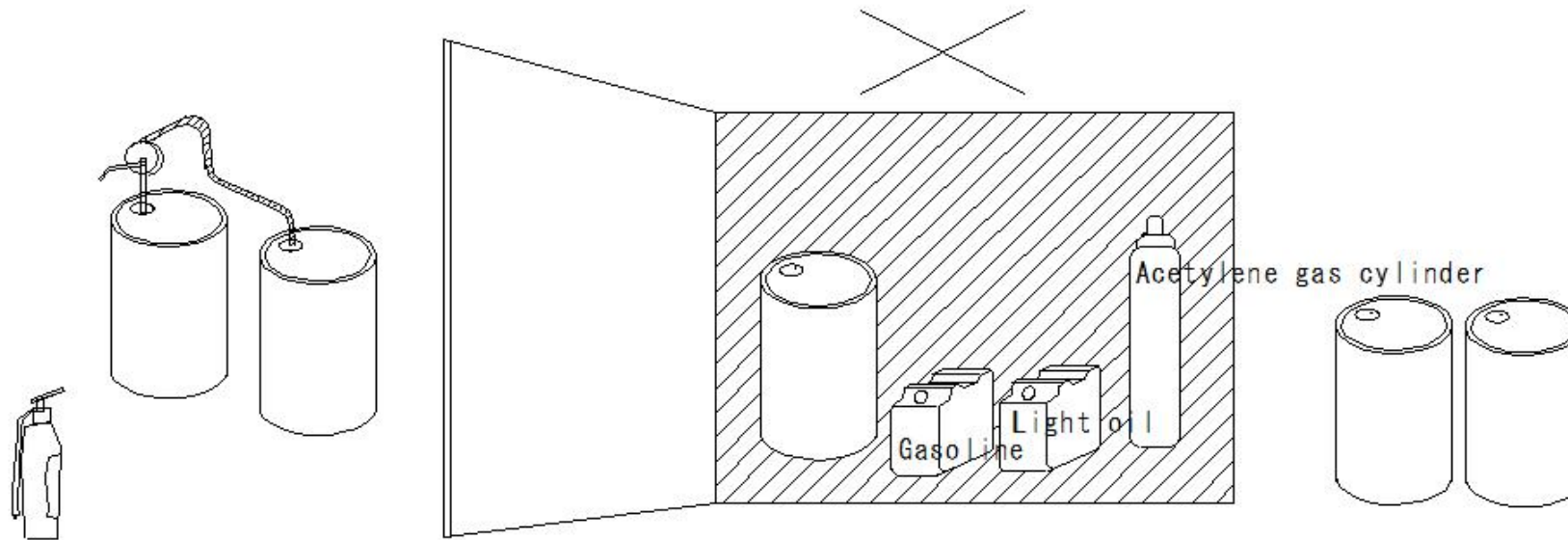
(S1015) Handling of hazardous materials, etc.

(S1015) Handling of hazardous materials, etc.

Handling of hazardous materials, etc.

Do not store together with acetylene gas cylinders, etc.

Safety and Health Regulations Article 263



(S1016) Management of fire, etc.

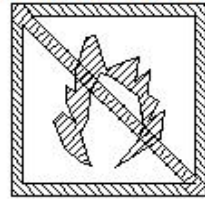
(S1016) Handling of hazardous materials, etc.

Management of fire, etc.

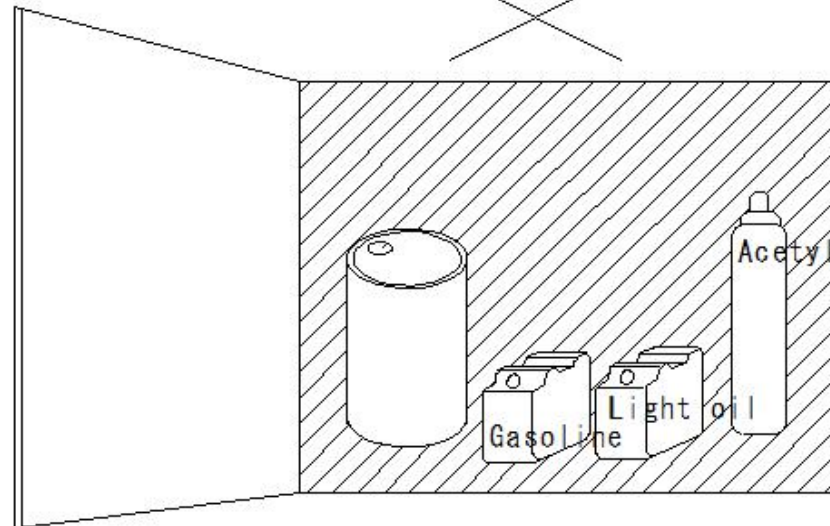
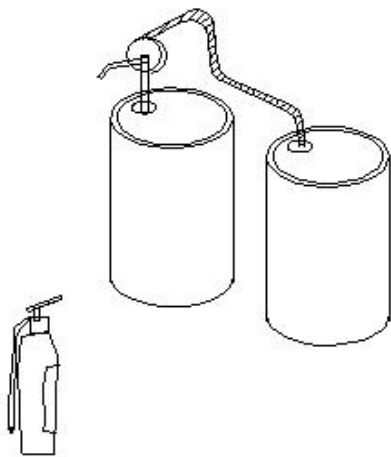
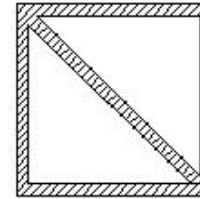
Removal of static electricity

Safety and Health Regulations Article 287

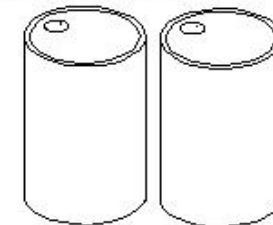
No open flames



No entry



Acetylene gas cylinder



(S1017) Management of fire, etc.

(S1017) Handling of hazardous materials, etc.

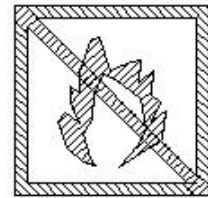
Management of fire, etc.

No entry, etc.

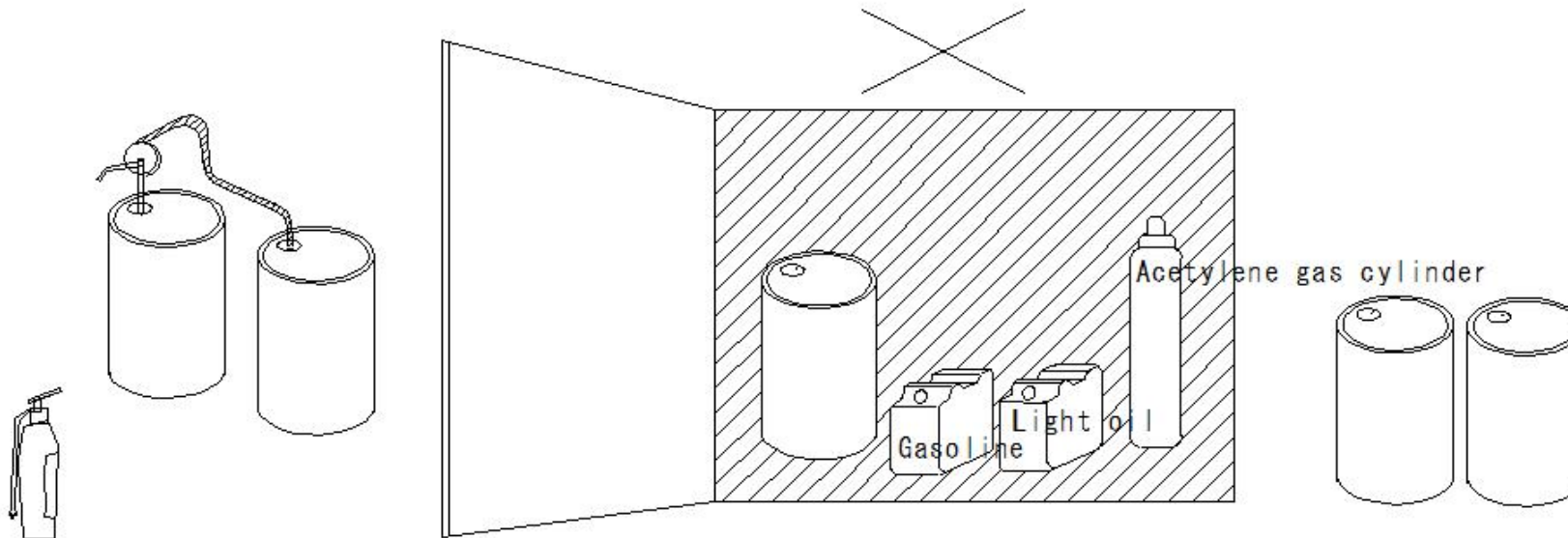
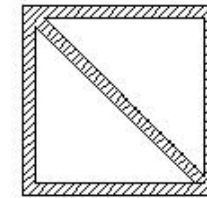
Safety and Health Regulations Article 288

- ① Places where there is a risk of fire or explosion
- ② Signs prohibiting the use of fire
- ③ Prohibiting entry of non-essential persons

No open flames



No entry



(S1018) Management of fire, etc.

(S1018) Handling of hazardous materials, etc.

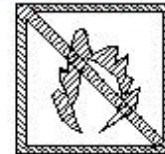
Management of fire, etc.

Fire extinguishing equipment

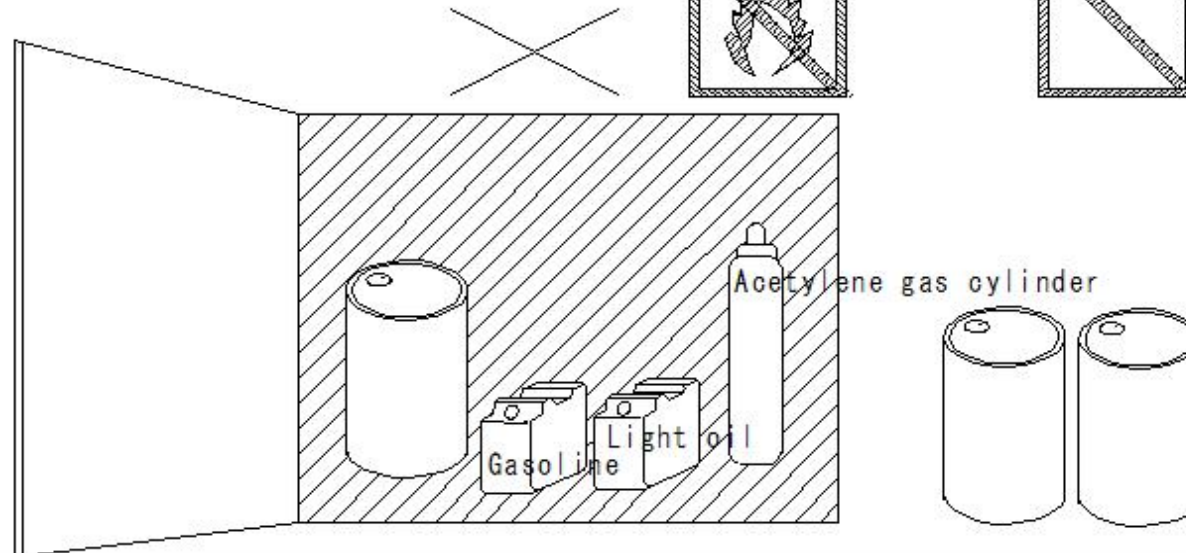
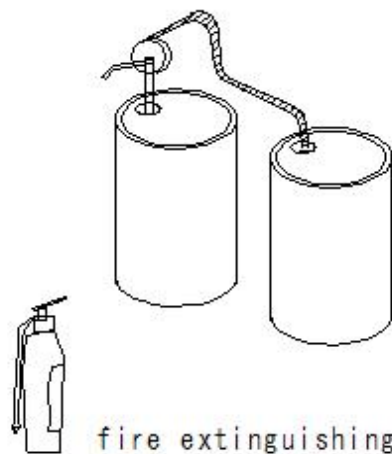
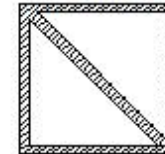
Safety and Health Regulations Article 289

- ① Employers must provide fire extinguishing equipment in the following locations: buildings, chemical equipment (excluding piping), or drying equipment
- ② Other dangerous materials, non-hazardous flammable oils, etc.
- ③ Locations where materials that may cause fires are handled
- ④ Locations where fire extinguishing equipment is provided.

No open flames



No entry



(S1019) Management of fire, etc.

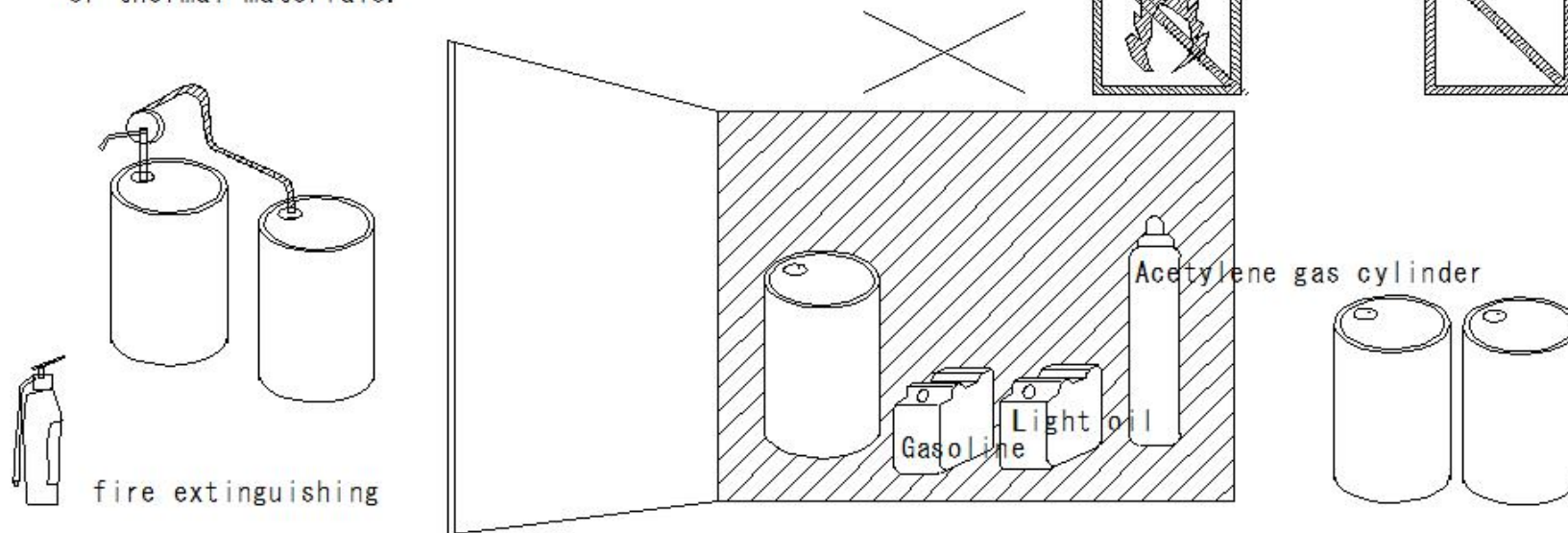
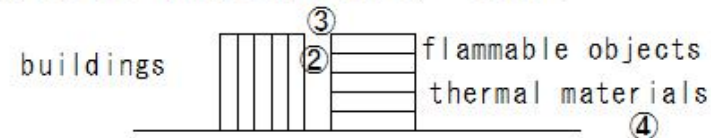
(S1019) Handling of hazardous materials, etc.

Management of fire, etc.

Fire prevention equipment

Safety and Health Regulations Article 290

- ① Employers must not install equipment that may cause a fire, such as furnaces, heating equipment, iron chimneys, or other equipment.
- ② Between buildings and other flammable objects
- ③ The necessary distance must be provided for fire prevention.
- ④ Flammable objects must be protected with insulation or thermal materials.



(S1020) Management of fire, etc.

(S1020) Handling of hazardous materials, etc.

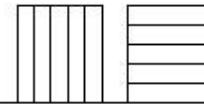
Management of fire, etc.

Ash dump

Safety and Health Regulations Article 292

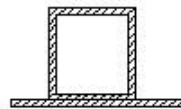
- ① Ash dump
- ② Installed in a location where there is no risk of fire spreading
- ③ Non-combustible materials

buildings

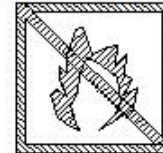


flammable objects
thermal materials

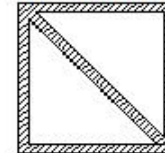
Ash dump



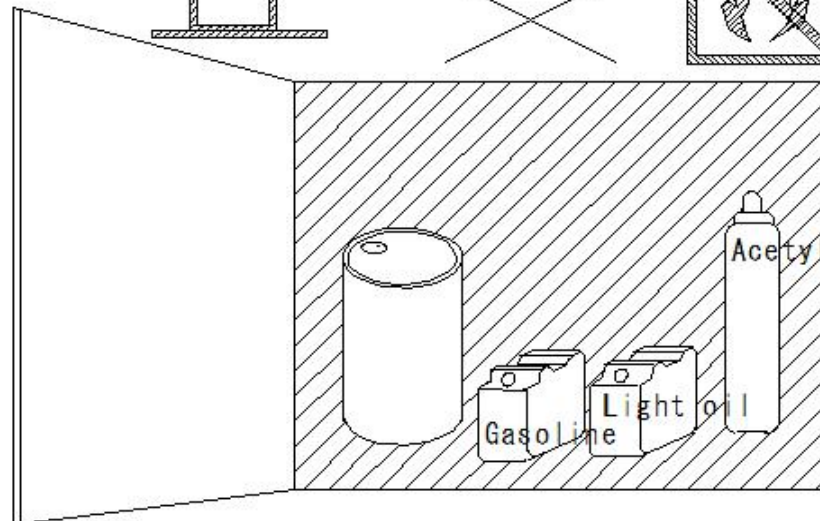
No open flames



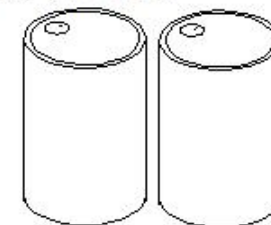
No entry



fire extinguishing



Acetylene gas cylinder



(S1021) Management of fire, etc.

(S1021) Handling of hazardous materials, etc.

Management of fire, etc.

Prevention of fires in places where fire is used

buildings



flammable objects

thermal materials

Safety and Health Regulations Article 291

① Employers must provide necessary fire prevention equipment in smoking areas, stoves, and other places where fire is used.

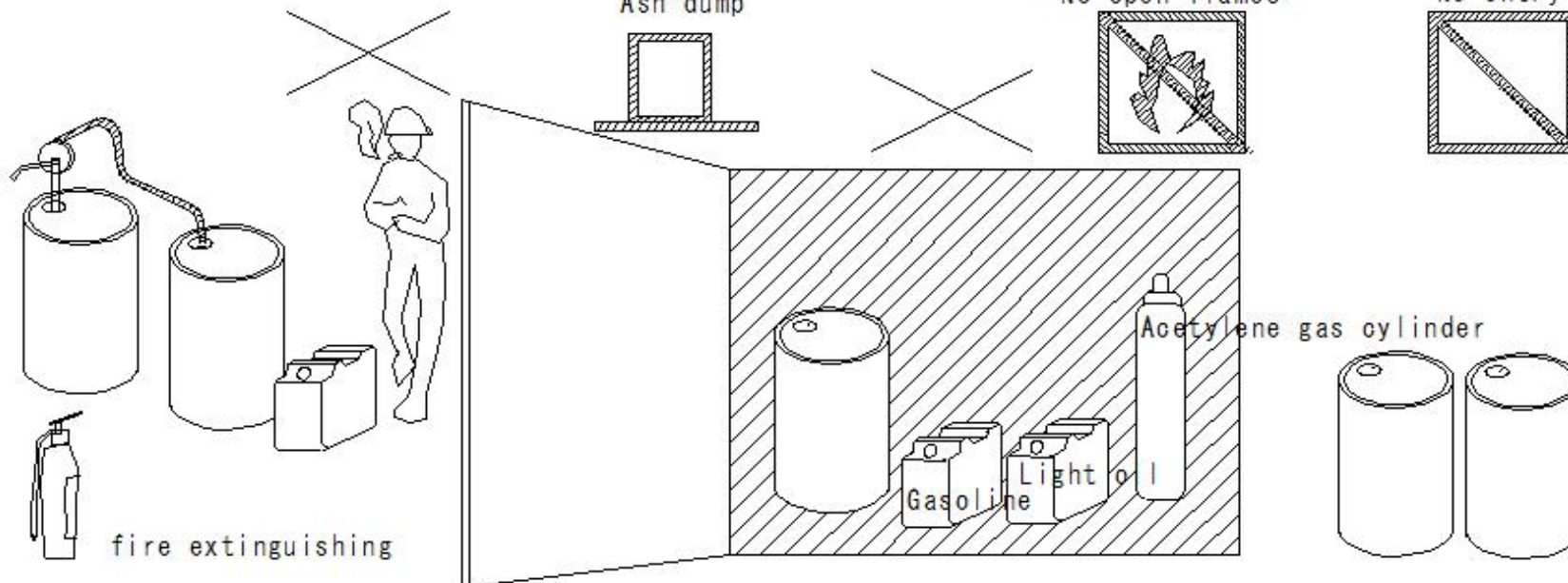
② Employees must not smoke, collect, dry, or otherwise engage in other activities without due caution.

③ Those who use fire must ensure that any remaining embers are put out

No open flames

No entry

Ash dump



(S1022) Management of fire, etc.

(S1022) Handling of hazardous materials, etc.


Management of fire, etc.

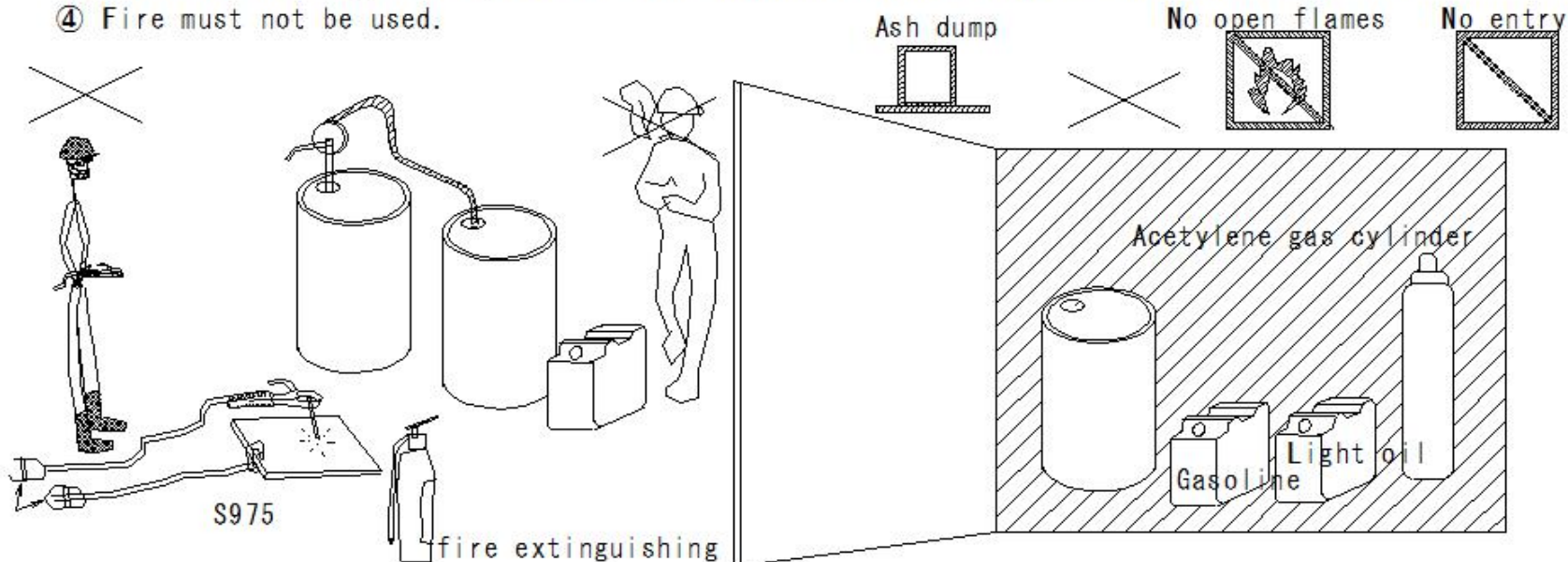
Management of fire, etc.

Prohibition of use of fire, etc. in places where dangerous materials are present

Safety and Health Regulations Article 279

- ① In places where there is combustible dust, explosives, a large amount of easily flammable materials or dangerous materials other than dangerous materials,
- ② In places where there is a risk of explosion or fire
- ③ Machines that may emit sparks or arcs or become hot and become a source of ignition
- ④ Fire must not be used.

buildings  flammable objects
thermal materials



(S1023) Management of fire, etc.

(S1023) Handling of hazardous materials, etc.

Management of fire, etc.

(Welding of pipes or containers containing oil, etc.)

buildings



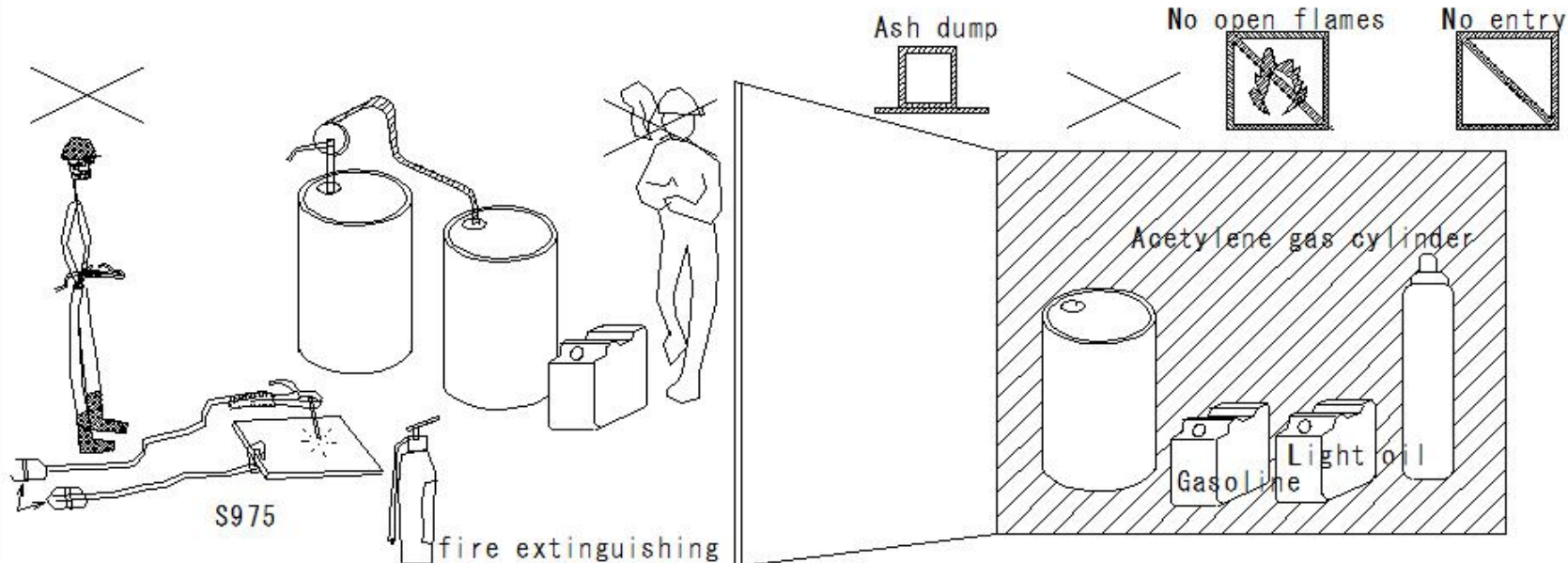
flammable objects

thermal materials

Safety and Health Regulations Article 285

① For pipes or containers such as tanks and drums that may contain flammable oil or combustible dust or hazardous materials other than hazardous materials,

② Welding, cutting, or other work that uses fire or may cause sparks must not be performed.



(S1024) Management of fire, etc.

(S1024) Handling of hazardous materials, etc.

Management of fire, etc.

(Welding, etc. in places with insufficient ventilation)

buildings

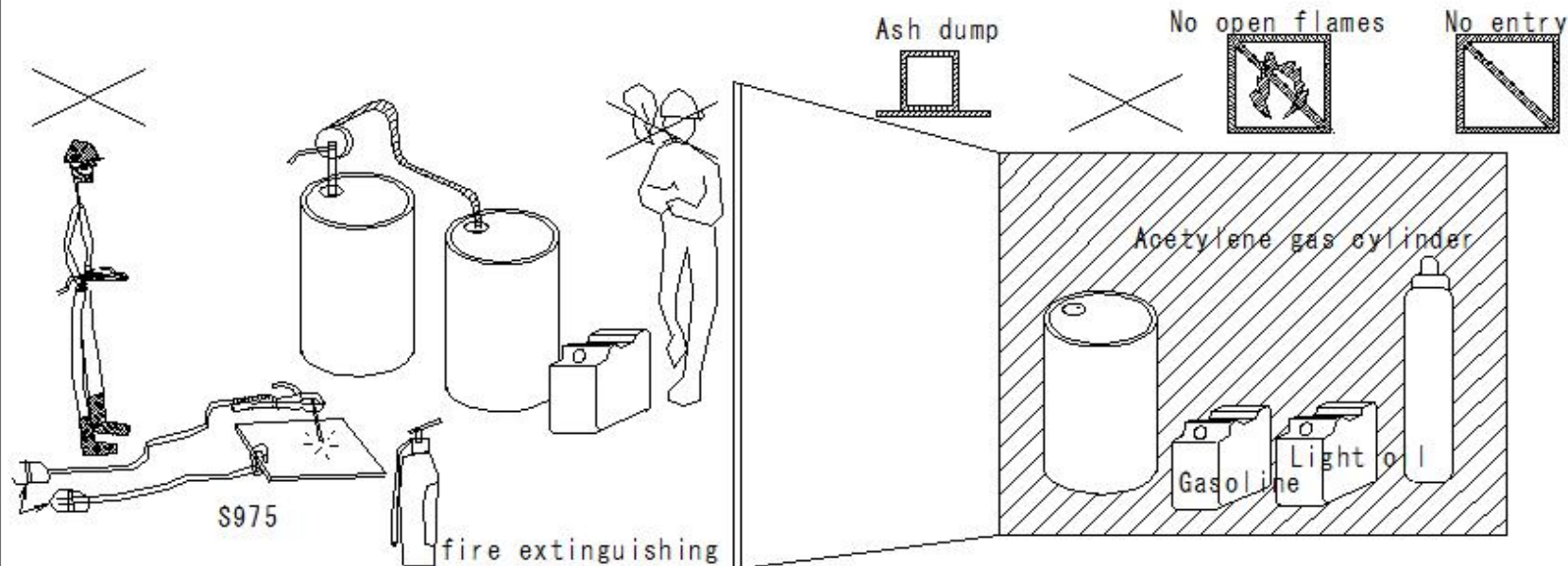


flammable objects

thermal materials

Safety and Health Regulations Article 286

- ① Welding, cutting, heating metal, and other work using fire in places with insufficient ventilation
- ② In case of chipping with a chisel or other work that may cause sparks
- ③ Oxygen must not be used for ventilation.



(S1025) Fire prevention management and fire extinguishing equipment

(S1025) Fire prevention management and fire extinguishing equipment

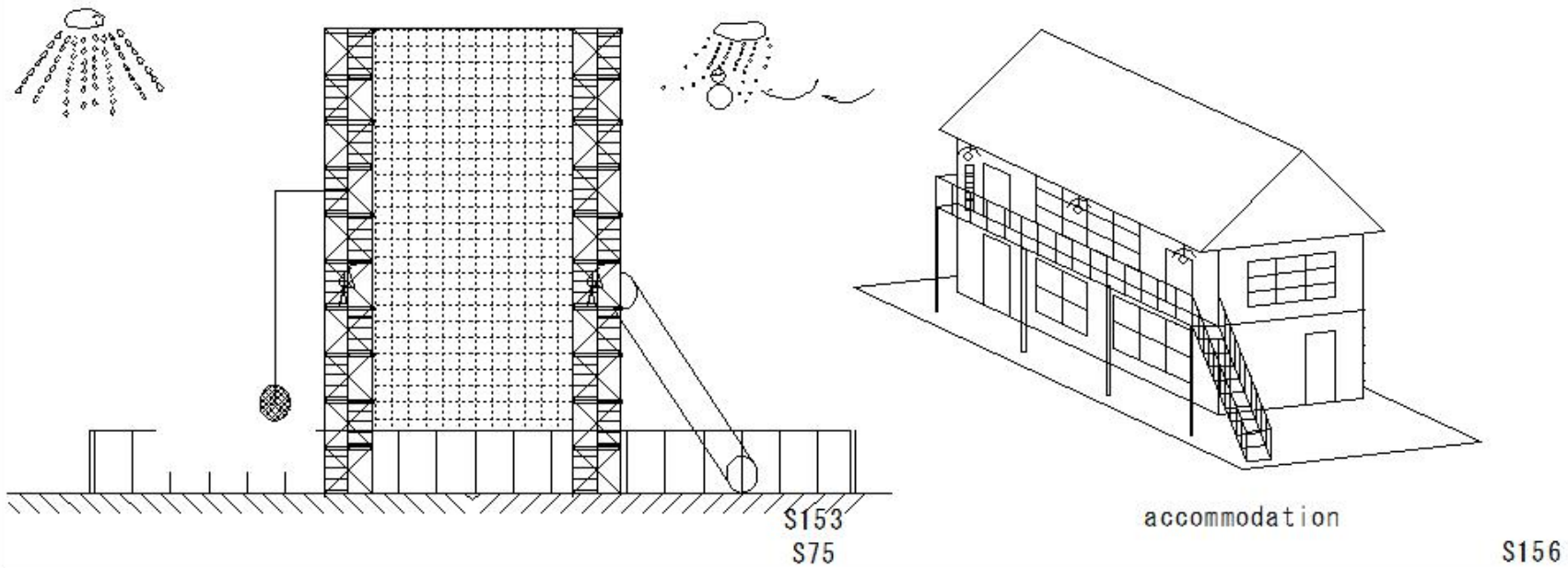
Fire prevention management and fire extinguishing equipment

Appointment of fire prevention manager

Fire Service Act Article 8, Paragraph 2

Workplace: Offices, etc. – 50 or more employees

Dormitories – 50 or more residents



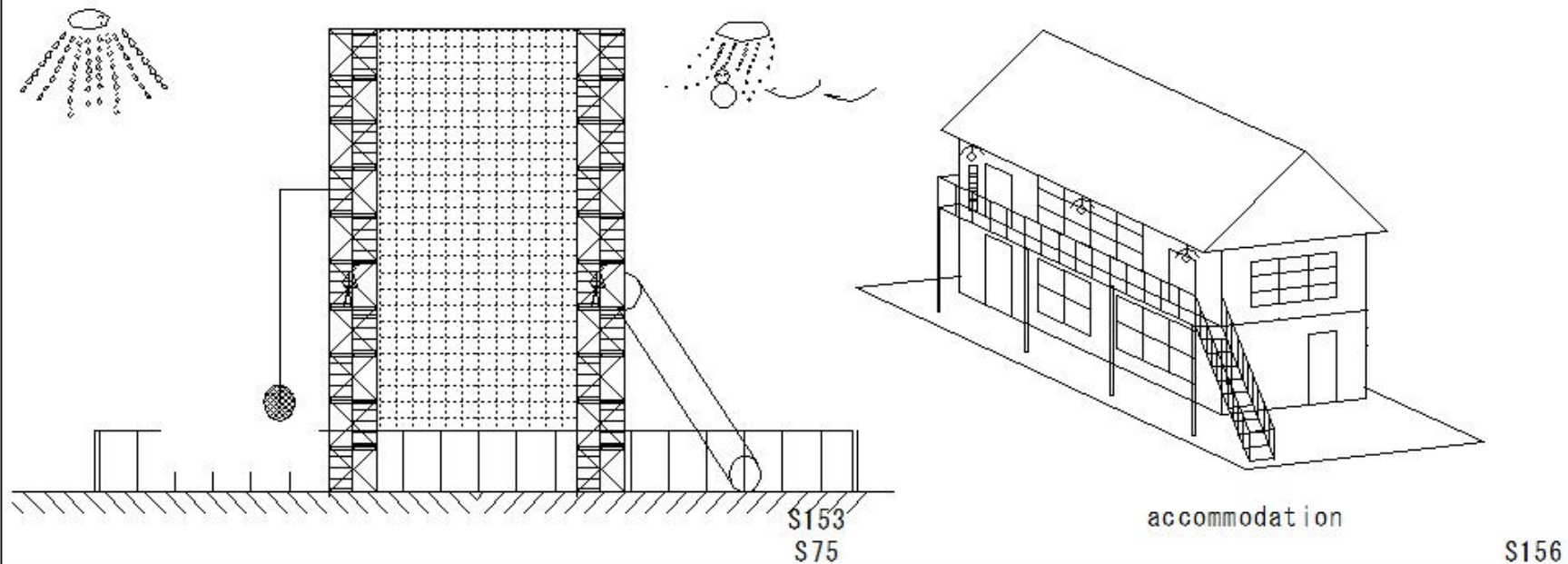
(S1026) Fire prevention management and fire extinguishing equipment

(S1026) Fire prevention management and fire extinguishing equipment

Fire prevention management and fire extinguishing equipment

Creating a fire prevention plan

Fire Service Ordinance Article 3



(S1027) Fire prevention management and fire extinguishing equipment

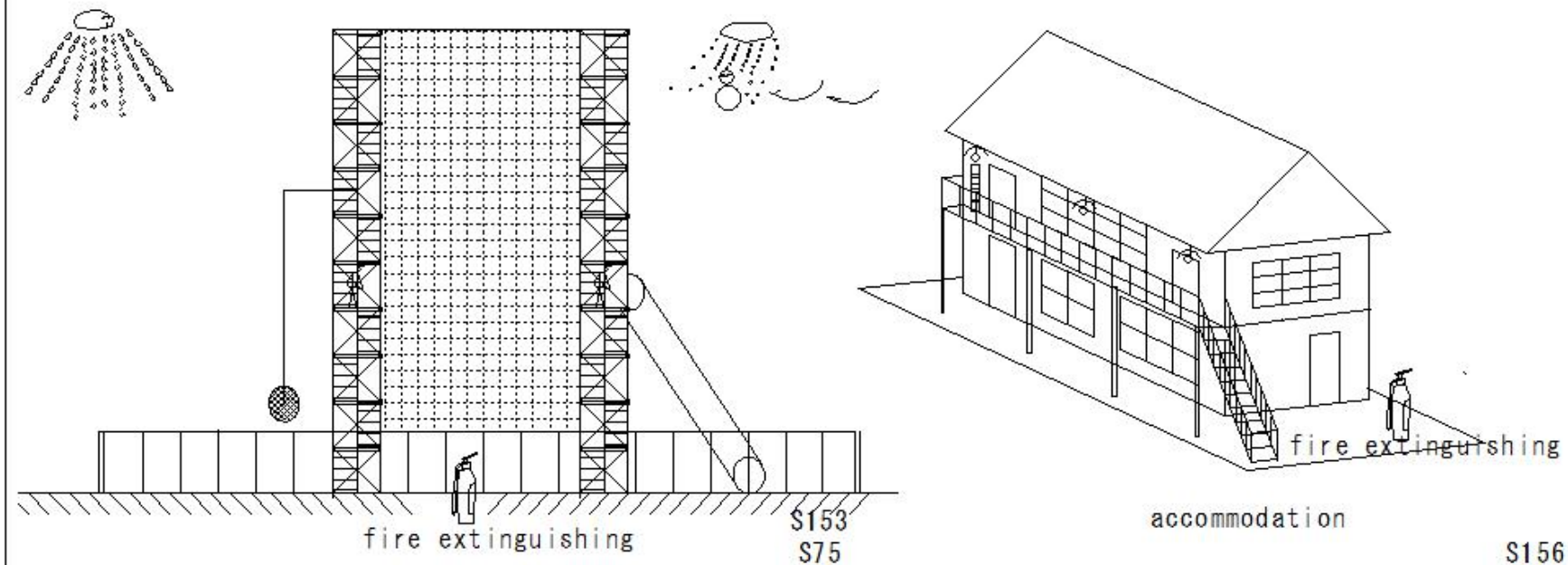
(S1027) Fire prevention management and fire extinguishing equipment

Fire prevention management and fire extinguishing equipment

Fire extinguishing equipment

Fire Service Act Article 17-3-2

Quantity and installation location of fire extinguishing equipment



(S1028) Fire prevention management and fire extinguishing equipment

(S1028) Fire prevention management and fire extinguishing equipment

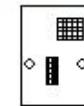
Fire prevention management and fire extinguishing equipment

Alarm equipment

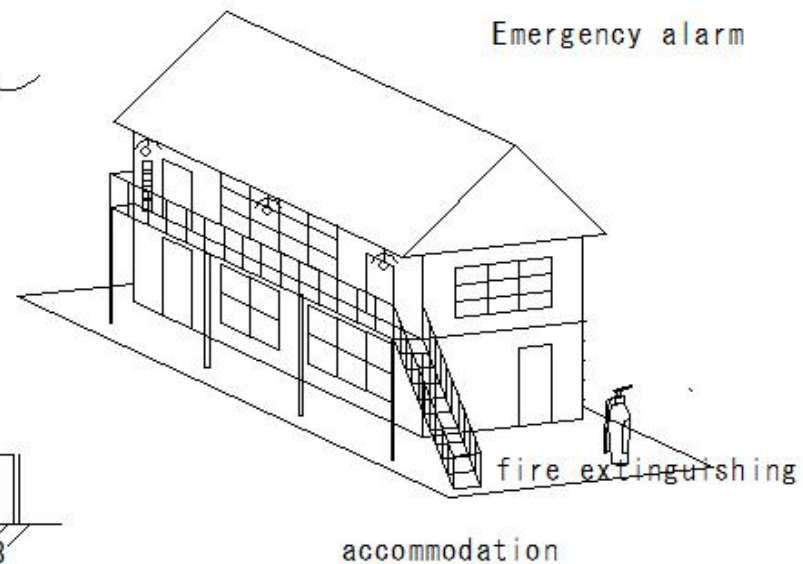
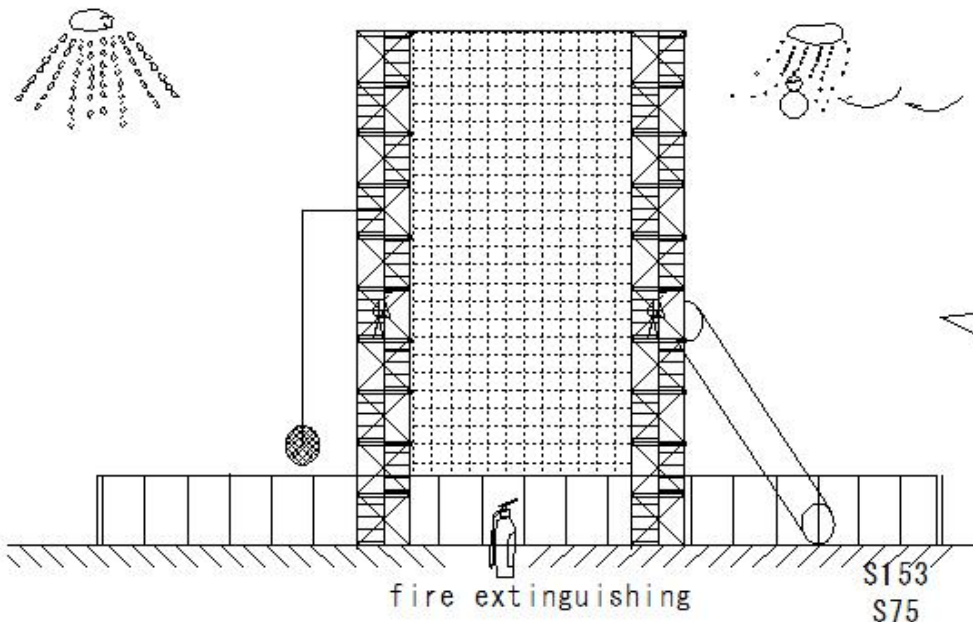
Fire Service Ordinance Articles 21, 22, and 24

Automatic fire alarm equipment

Earth leakage fire alarm



Emergency alarm



S156

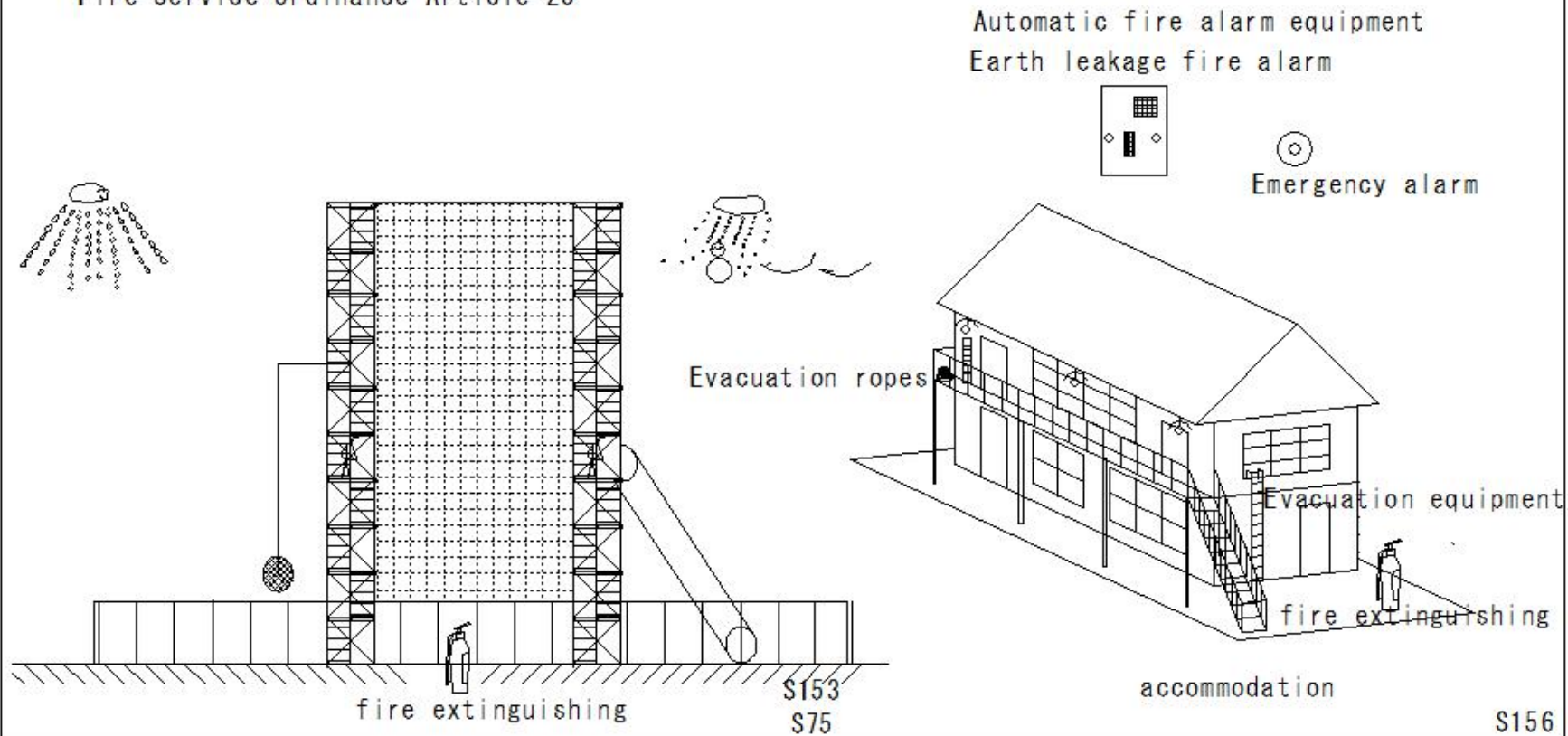
(S1029) Fire prevention management and fire extinguishing equipment

(S1029) Fire prevention management and fire extinguishing equipment

Fire prevention management and fire extinguishing equipment

Evacuation equipment, evacuation ropes, etc.

Fire Service Ordinance Article 25



(S1030) Fire prevention management and fire extinguishing equipment

(S1030) Fire prevention management and fire extinguishing equipment

Fire prevention management and fire extinguishing equipment

Types of fire and fire extinguishers

A fire: Ordinary fire

Wood, paper, fiber, etc. (white circle)



fire extinguishing

(S1031) Fire prevention management and fire extinguishing equipment

(S1031) Fire prevention management and fire extinguishing equipment

Fire prevention management and fire extinguishing equipment

Types of fire and fire extinguishers

B fire: Oil fire

Petroleum, flammable liquids (yellow circle)



fire extinguishing

(S1032) Fire prevention management and fire extinguishing equipment

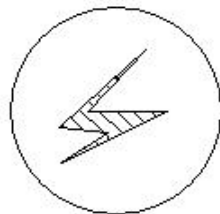
(S1032) Fire prevention management and fire extinguishing equipment

Fire prevention management and fire extinguishing equipment

Types of fire and fire extinguishers

Electrical fire

Transformers, distribution boards, etc. (blue circle)



fire extinguishing

(S1033) Fire prevention management and fire extinguishing equipment

(S1033) Fire prevention management and fire extinguishing equipment

Fire prevention management and fire extinguishing equipment

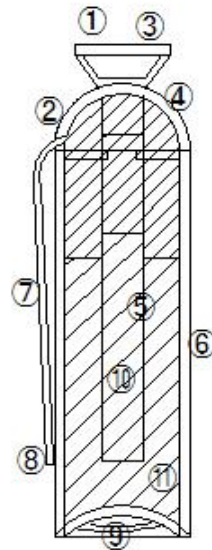
Types of fire and fire extinguishers

Foam fire extinguisher

Regular fire

For oil fires

- ① Safety valve
- ② Filter
- ③ Cap
- ④ Cap gasket
- ⑤ Inner space
- ⑥ Outer space
- ⑦ Hose
- ⑧ Nozzle
- ⑨ Handle
- ⑩ Liquid B
- ⑪ Solution A



fire extinguishing

A fire: Ordinary fire

Wood, paper, fiber, etc. (white circle)



B fire: Oil fire

Petroleum, flammable liquids (yellow circle)



S1031

(S1034) Fire prevention management and fire extinguishing equipment

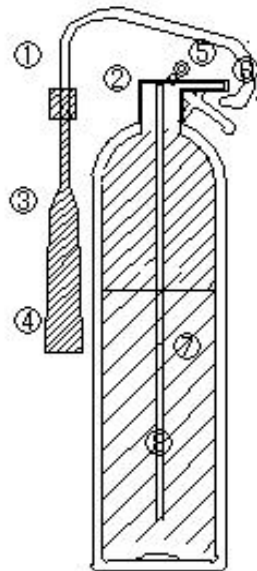
(S1034) Fire prevention management and fire extinguishing equipment

Fire prevention management and fire extinguishing equipment

Carbon dioxide fire extinguisher

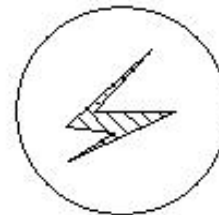
For electrical fires

- ① Hose
- ② Safety valve
- ③ Nozzle
- ④ Horn
- ⑤ Safety valve
- ⑥ Lever
- ⑦ Carbon dioxide
- ⑧ Siphon tube



Electrical fire

Transformers, distribution boards, etc. (blue circle)



fire extinguishing

Carbon dioxide fire extinguisher

For electrical fires

S1032

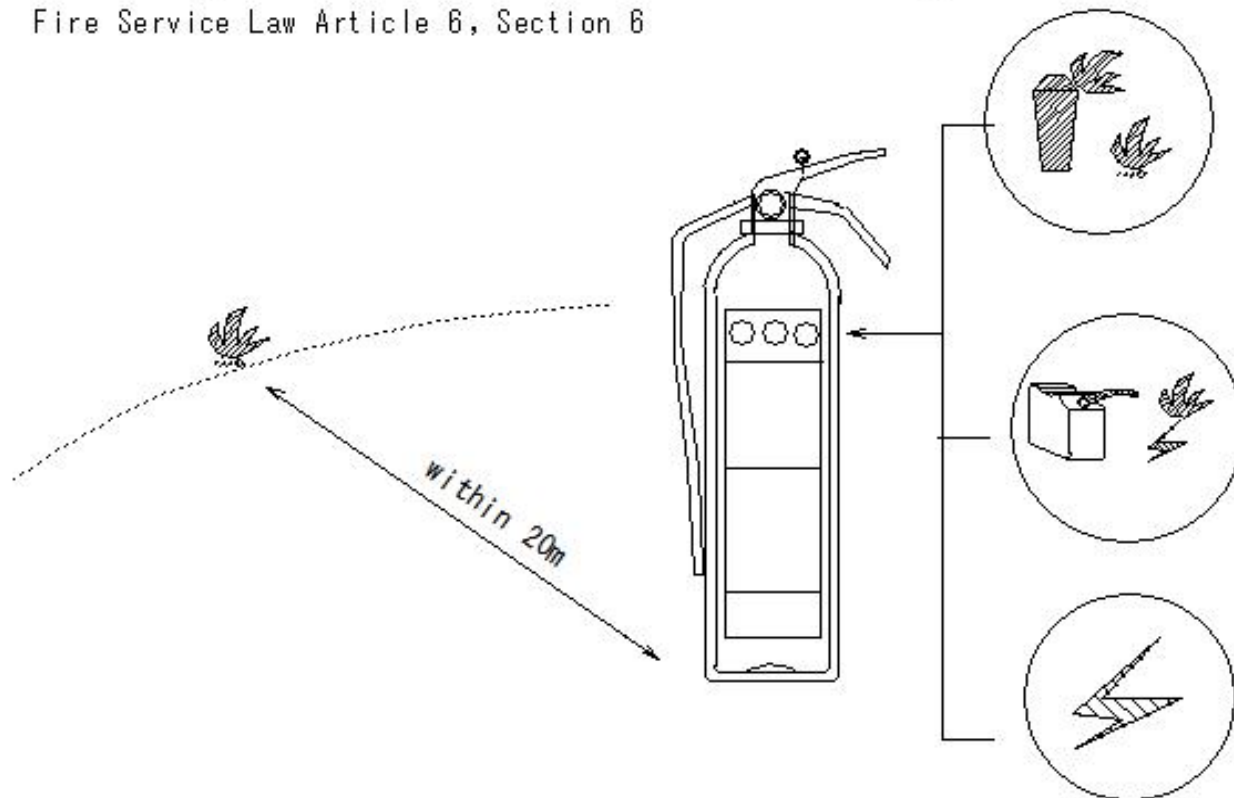
(S1035) Fire prevention management and fire extinguishing equipment

(S1035) Fire prevention management and fire extinguishing equipment

Fire prevention management and fire extinguishing equipment

Fire extinguishers must be installed within 20m walking distance of the fire prevention object

Fire Service Law Article 6, Section 6



(S1036) Fire prevention management and fire extinguishing equipment

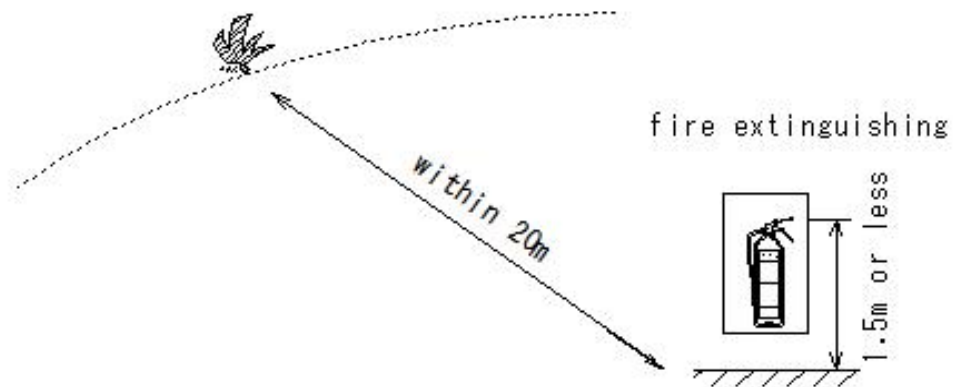
(S1036) Fire prevention management and fire extinguishing equipment

Fire prevention management and fire extinguishing equipment

Install at a height of 1.5m or less from the floor and mark the fire extinguisher

Fire Service Act Article 9

1.5m or less



(S1037)Blasting

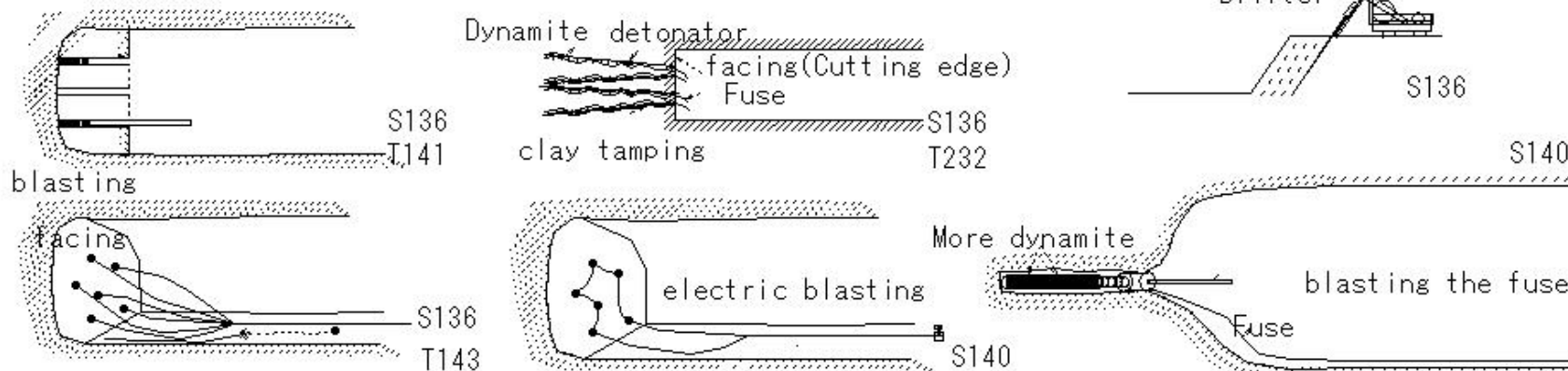
(S1037)Blasting

Blasting Safety Work

Safety and Health Regulations No. 319

(Director of fuse blasting work) Fuse blasting work

- ① Instruct evacuation before ignition.
- ② Instruct evacuation location and route.
- ③ Use a blasting clock, discarded fuse, or other device to indicate when to evacuate.
- ④ Instruct on the order and classification of ignition.
- ⑤ Give the signal to ignite.
- ⑥ Give the signal to evacuate.
- ⑦ Check for unexploded charges or remaining charges.
- ⑧ Fuse Blasting Work Leader
- ⑨ Follow the instructions and signals given by the leader



(S1038)Blasting

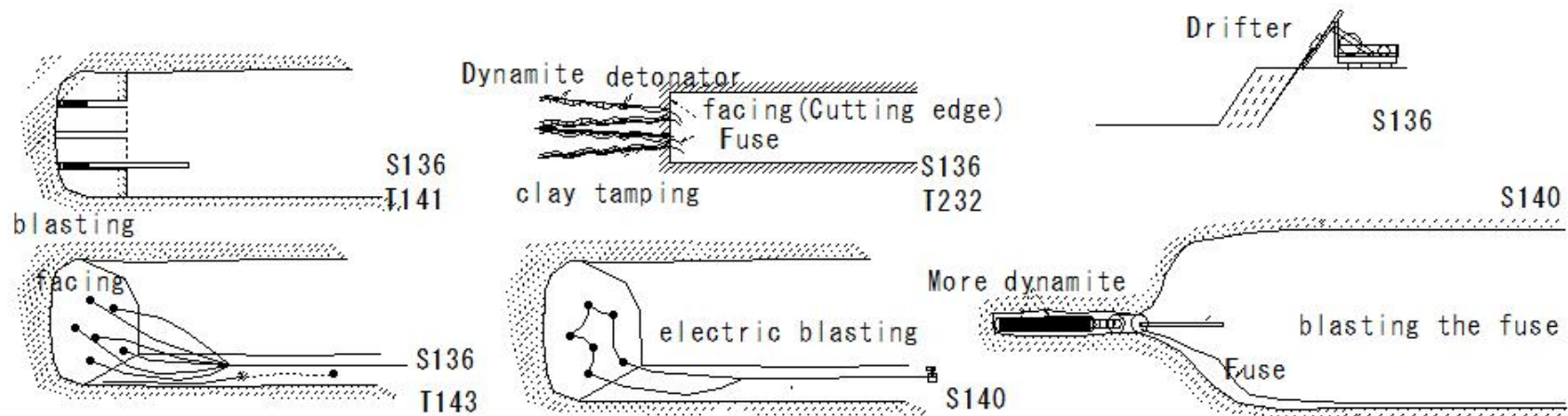
(S1038)Blasting

Blasting Safety Work

Safety and Health Regulations No. 320

(Supervisor of Electric Blasting Work)

- ① Instruct workers on the evacuation location and route.
- ② Confirm that workers have evacuated.
- ③ Designate the person who will start the ignition.
- ④ Instruct on the ignition location.
- ⑤ Supervisor of Electric Blasting Work
- ⑥ Follow the instructions and signals given by the supervisor.



(S1039) Blasting

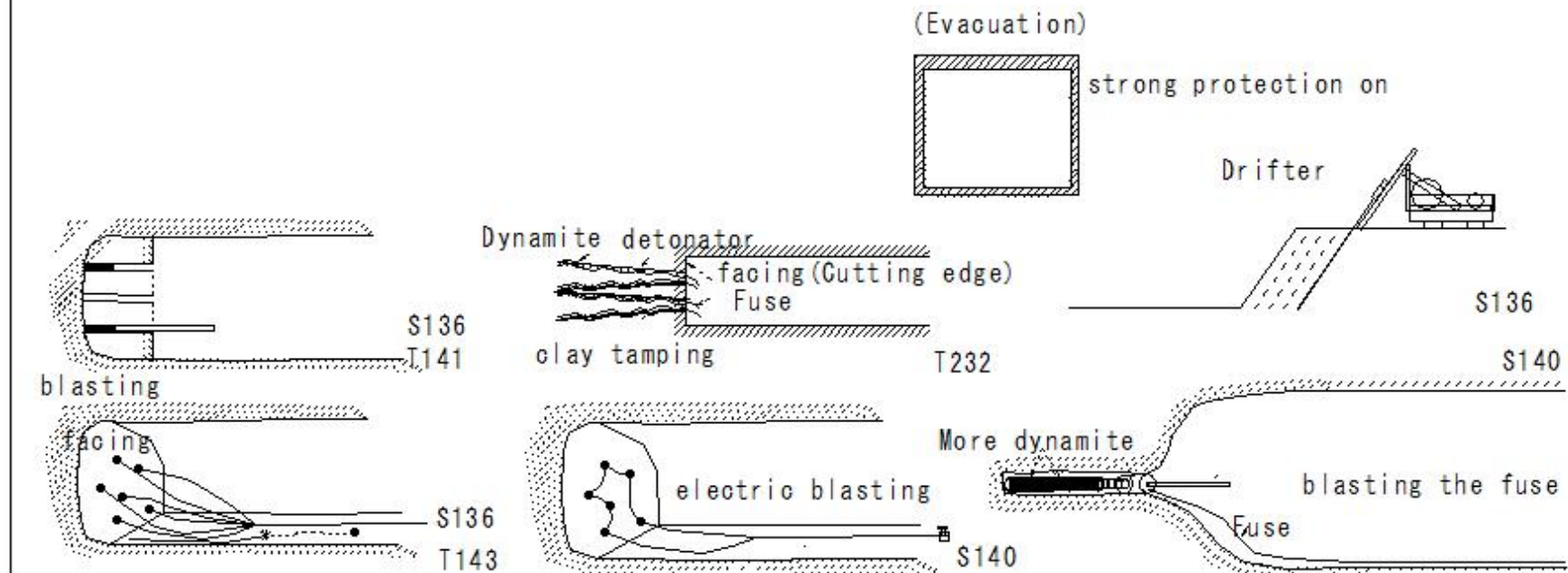
(S1039) Blasting

Blasting Safety Work

Safety and Health Regulations 321

(Evacuation)

- ① In case of workers cannot evacuate to a safe distance
- ② A shelter with strong protection on the front and top must be provided.



(S1040) Blasting

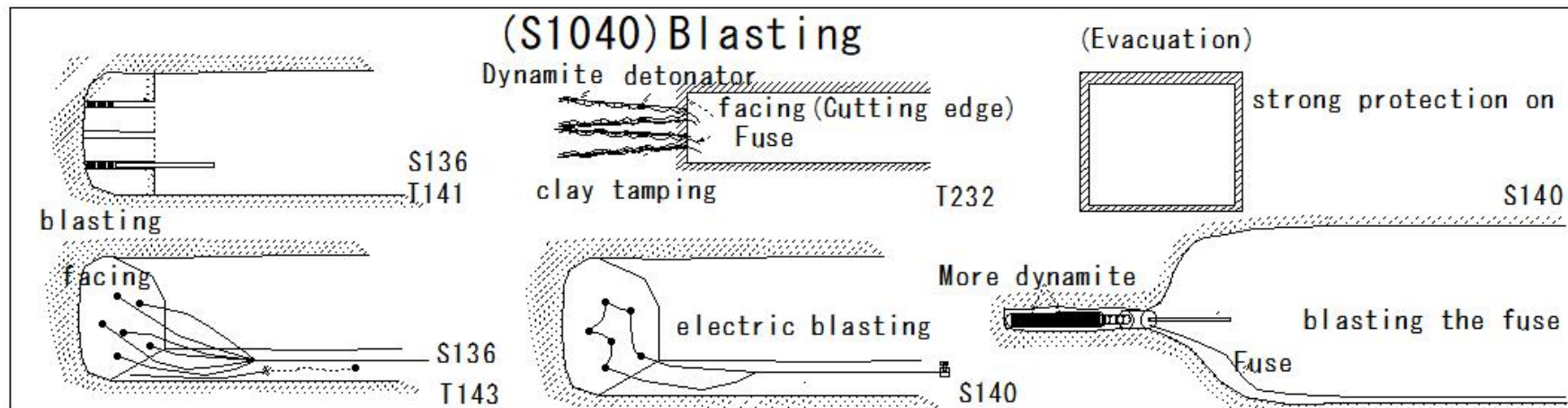
(S1040) Blasting

Safe blasting operations

Safety and Health Regulations No. 318

(Standards for blasting operations)

- ① Frozen dynamite should not be melted in a dangerous manner, such as :
- ② In case of loading gunpowder or explosives, do not use open flames or smoke in the vicinity.
- ③ Use safe loading tools that are not likely to cause explosions due to friction.
- ④ Use materials such as clay, sand, and other materials that are not likely to ignite or catch fire.
- ⑤ If the loaded explosives do not explode after ignition, or if it is difficult to confirm that the loaded explosives have exploded, follow the following.
- ⑥ In case of using an electric detonator, remove the blasting main wire from the area.
- ⑦ For anything other than an electric detonator, do not approach the area where explosives are loaded until at least 15 minutes have passed since ignition.



(S1041) Blasting

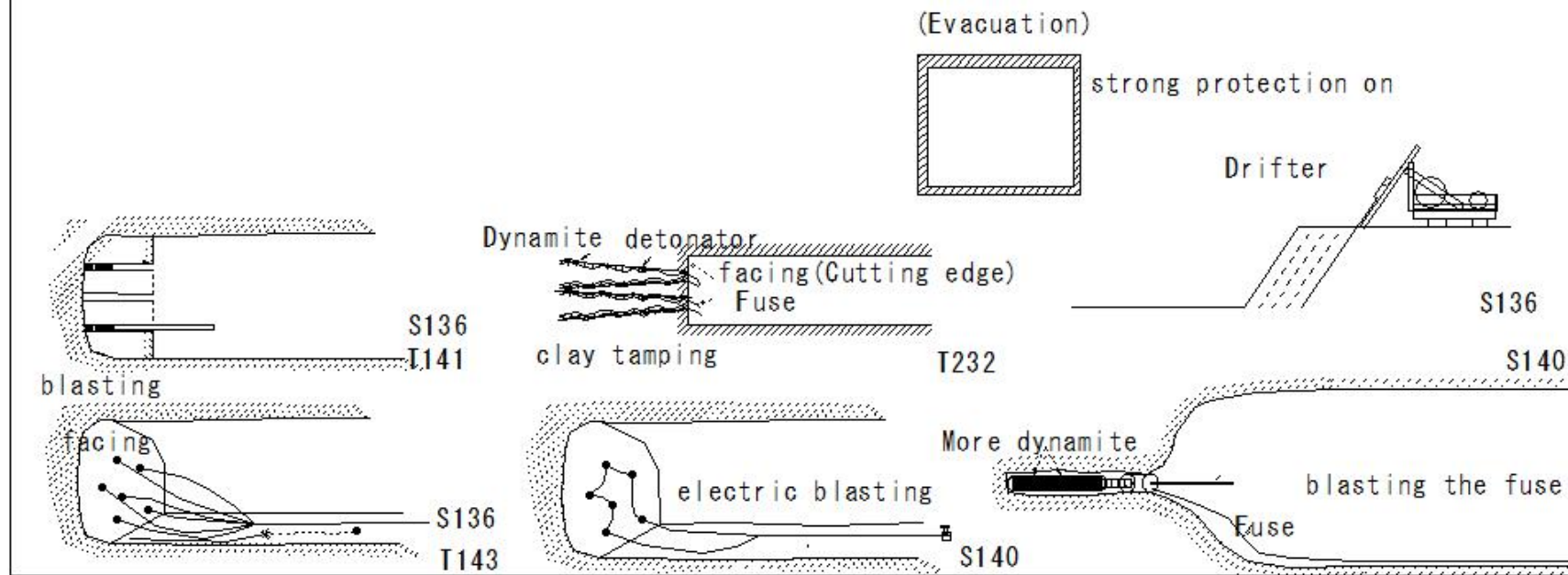
(S1041) Blasting

Blasting Safety Work

Safety and Health Regulations 319

(Fuse blasting work supervisor)

- ① Workers engaged in fuse blasting work must follow the instructions and signals given by the supervisor.



(S1042) Explosives

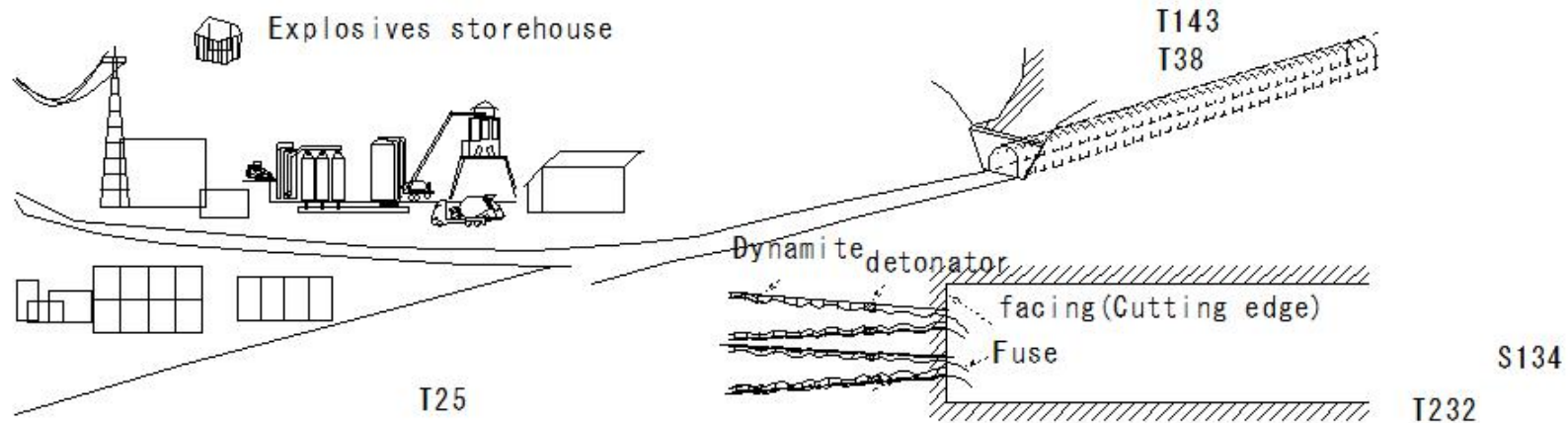
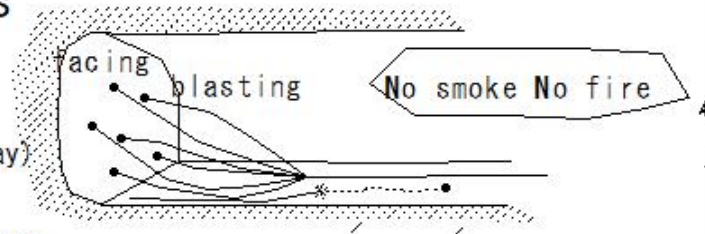
(S1042) Explosives

Explosives management system and markings, etc.

Organizational chart of the site of consumption

(In case of consuming more than 25 kg of explosives per day)

- | | | |
|--|---------------------------|---------------------|
| ① Excavation manager | Blasting site | |
| ② Crushed stone manager | ⑥ Blasting manager | |
| ③ Ground excavation manager | ⑦ Blasting record manager | |
| ④ Excavation manager for tunnels, etc. | ⑧ Blasting record manager | |
| ⑤ Excavation manager for crushed stone | ⑨ Blasting worker | ⑩ Transport vehicle |



(S1043) Explosives

(S1043) Explosives

Explosives management system and signs, etc.

Signs, etc.

	③ Location	④ Explosives magazine, external storage	⑤ Handling area	⑥ Pyrotechnics factory	⑦ Office
	② Type				
① Signs and notices	⑧ Security management organization chart	○	○	○	○
	⑨ Emergency contact chart				○
	⑩ Facility name	○	○	○	
	⑪ Name of person in charge, etc.	○	○	○	
	⑫ Regulations and handling guidelines	○	○	○	
	⑬ No entry, no open flames	○	○	○	
	⑭ Maximum storage amount, maximum remaining amount	⑱ Storage amount	⑲ Remaining amount		
	⑮ Person in charge of automatic alarm system management and inspection	○			○
	⑯ Capacity		○	○	
	⑰ Blasting period, time, signaling method	⑳ Necessary locations such as roads leading to dangerous areas			

(S1044) Concrete Crusher

(S1044) Concrete Crusher

Management of concrete crusher work

Concrete crusher

Safety and Health Regulations Article 321-3

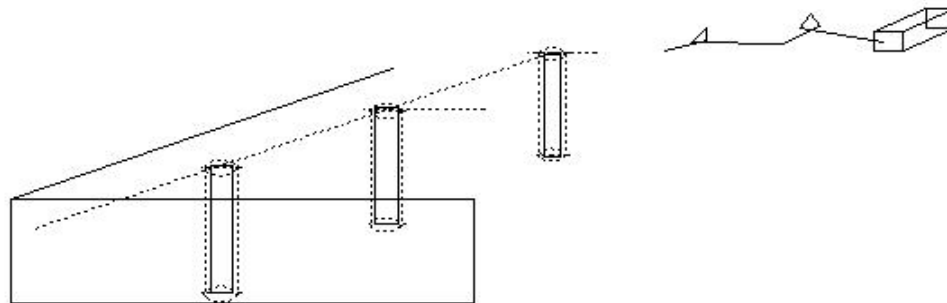
Work to destroy concrete or rock using a concrete crusher

Duties of the concrete crusher work chief)

Safety and Health Regulations Article 321-4

The employer must have the concrete crusher work chief perform the following:

1. Determine the method of work and directly supervise the work.
2. Instruct the workers engaged in the work on the evacuation location and route.
3. Confirm that workers have evacuated from the danger zone before ignition.
4. Designate the igniter.
5. Give the signal to ignite.
6. Check for the presence of unexploded charges or remaining charges.



(S1045) Concrete Crusher

(S1045) Concrete Crusher

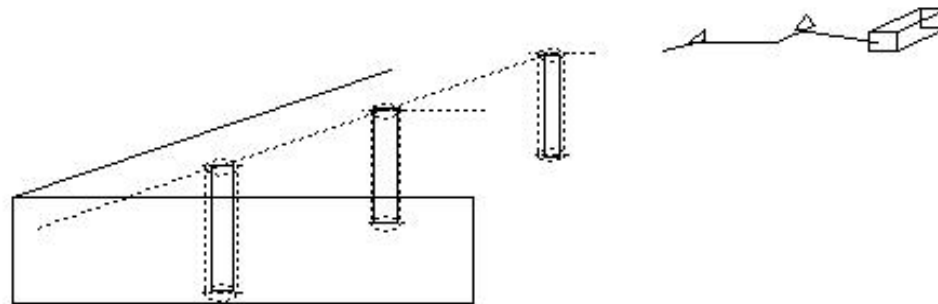
Management of concrete crusher work

Safety and Health Regulations 321-2

(Standards for concrete crusher work)

In case of performing crushing work using a concrete crusher

1. Prohibit the use of open flames or smoking.
2. Use loading tools that will not pose a risk of the concrete crusher catching fire.
3. Use materials that will not ignite or catch fire.
4. Measures to prevent scattering of crushed materials, etc.
5. In case of the material does not ignite after ignition or if it is difficult to confirm that it has ignited, do not allow workers to approach the loading area of the concrete crusher.



(S1046) Concrete Crusher

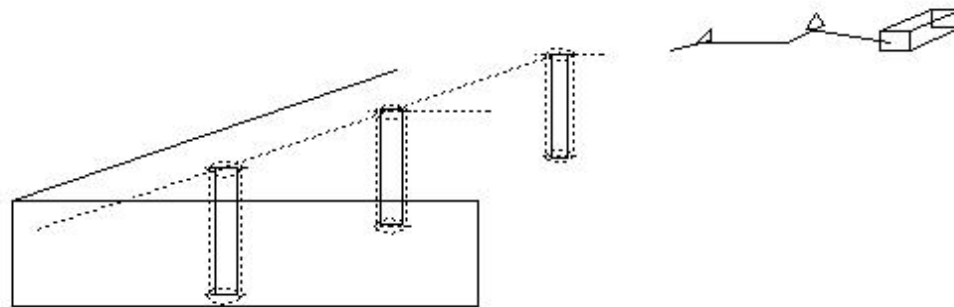
(S1046) Concrete Crusher

Management of concrete crusher work

Management of concrete crusher work

(Standards for concrete crusher work)

- ① Work using concrete crushers: Industrial Safety and Health Act
- ② Loading concrete crushers: Prohibit use of open flames and smoking
- ③ Use loading tools that do not pose a risk of ignition due to friction, impact, static electricity, etc.
- ④ Use materials that do not pose a risk of ignition or fire, such as cement mortar or sand, for loading materials
- ⑤ Take measures to prevent scattering of crushed materials, etc.
- ⑥ In case of the loaded concrete crusher does not ignite after ignition or if it is difficult to confirm ignition, do not allow workers engaged in the work to approach the loading area.



(S1047) Tunnel

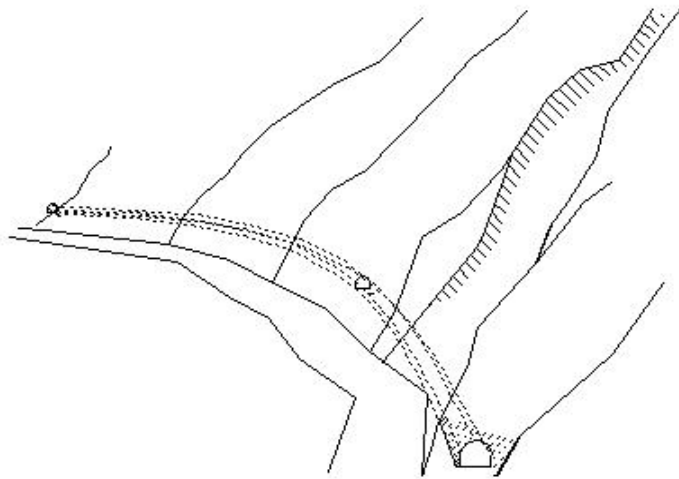
(S1047) Tunnel

Management of investigations of tunnels, etc.

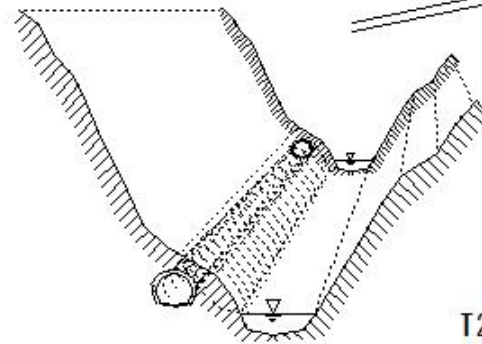
Safety and Health Regulations 379

(Investigation and Records)

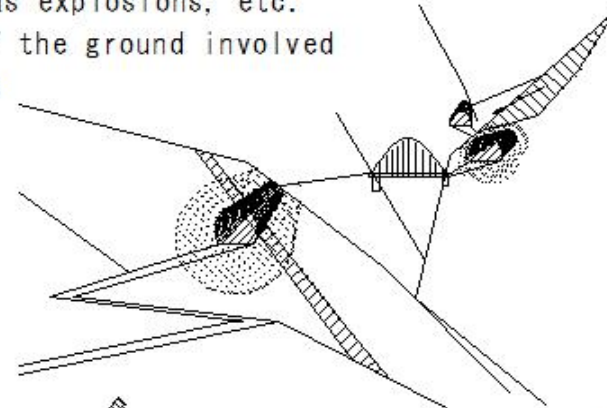
- ① In case of carrying out excavation work of tunnels, etc.,
- ② Prevent danger to workers due to rock falls, flooding, gas explosions, etc.
- ③ Investigate the shape, geology and state of the strata of the ground involved in the excavation by boring or other appropriate methods
- ④ Record the results.



T17



T22



T9

T101

(S1048) Tunnel

(S1048) Tunnel

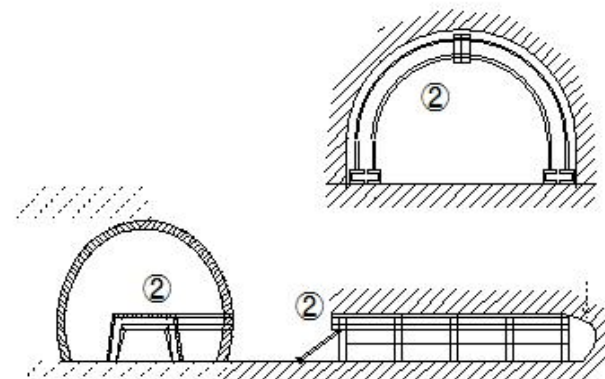
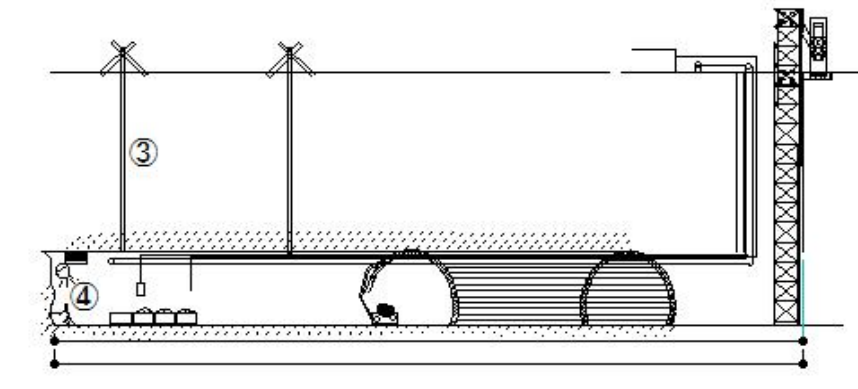
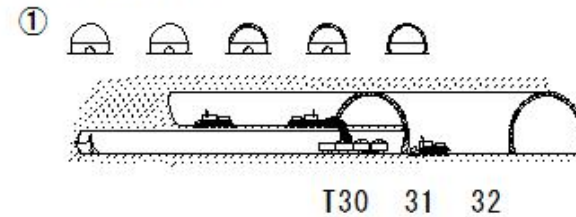
Management of investigations of tunnels, etc.

Safety and Health Regulations 380

(Construction plans)

Excavation work of tunnels, etc.: Investigation, Construction plans

- ① Excavation method
- ② Construction of tunnel supports
- ③ Spring water or flammable gases
- ④ Ventilation or lighting



(S1049) Tunnel

(S1049) Tunnel

Management of investigations of tunnels, etc.

Management of tunnel surveys, etc.

Safety and Health Regulations 381

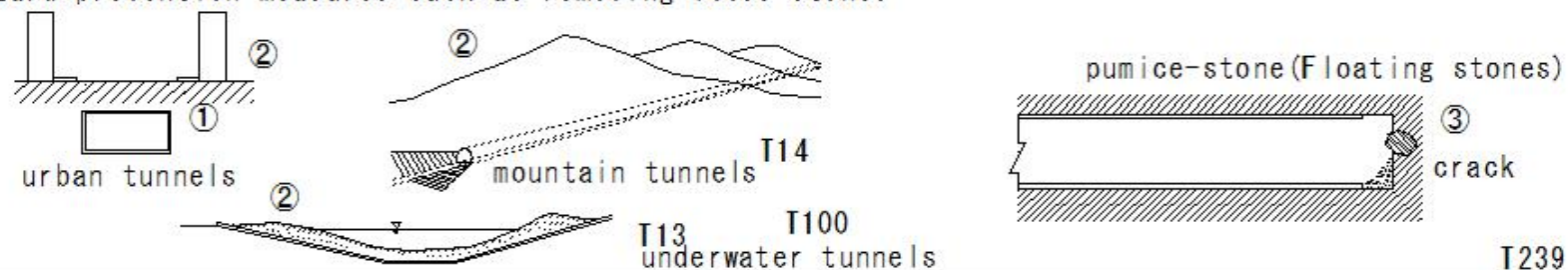
(Observation and Recording)

In case of excavating tunnels, etc., observations of the excavation site and surrounding ground must be recorded daily to prevent workers from falling rocks, flooding,

1. Geology and stratum condition
2. Presence and condition of water and spring water
3. Presence and condition of flammable gas
4. Presence and condition of high-temperature gas and steam

○ In case of excavation work is performed by covering the excavation site and surrounding ground with a machine, observations must be performed using measuring equipment.

- ① Daily and for moderate earthquakes and above
- ② Inspect and check the ground
- ③ Hazard prevention measures such as removing loose stones



(S1050) Tunnel

(S1050) Tunnel

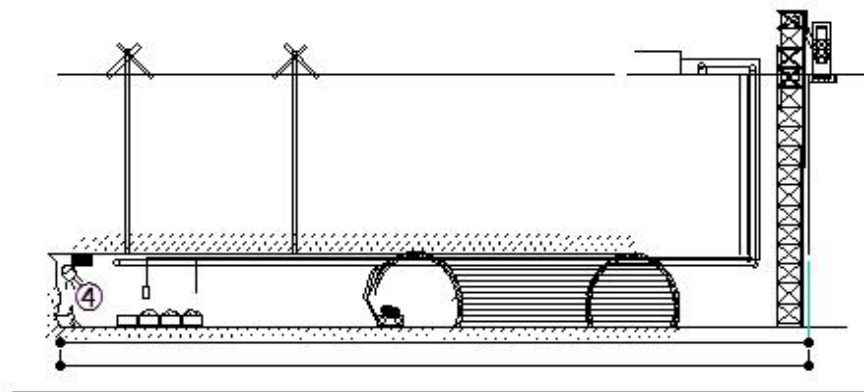
Management of investigations of tunnels, etc.

Management of tunnel surveys, etc.

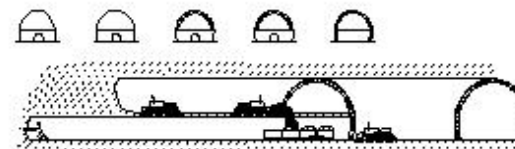
Safety and Health Regulations 383

(Changes to construction plans)

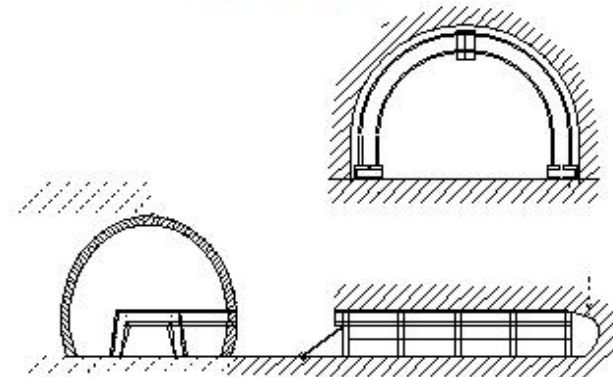
- ① In case of the construction plan no longer fits the conditions of the ground known through measurements, etc.
- ② Change the construction plan
- ③ Implement the changed construction plan



S108



T30 31 32



T152

(S1051) Tunnel

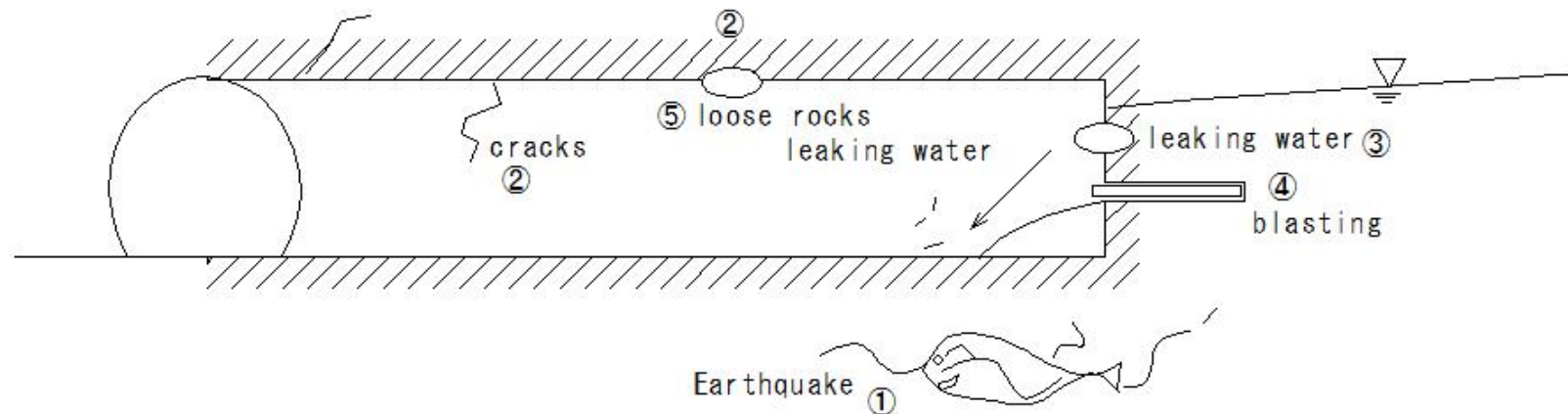
(S1051) Tunnel

Inspection and management of tunnels, etc.

Safety and Health Regulations 382

- ① Every day and after earthquakes of moderate magnitude or greater,
- ② The presence and condition of loose rocks and cracks
- ③ Changes in water content and leaking water
- ④ After blasting
- ⑤ The presence and condition of loose rocks and cracks must be inspected.

(Inspection)



(S1052) Tunnel

(S1052) Tunnel

Management of tunnel inspections, etc.

Safety and Health Regulations 382-2

(Measurement of flammable gas concentration, etc.)

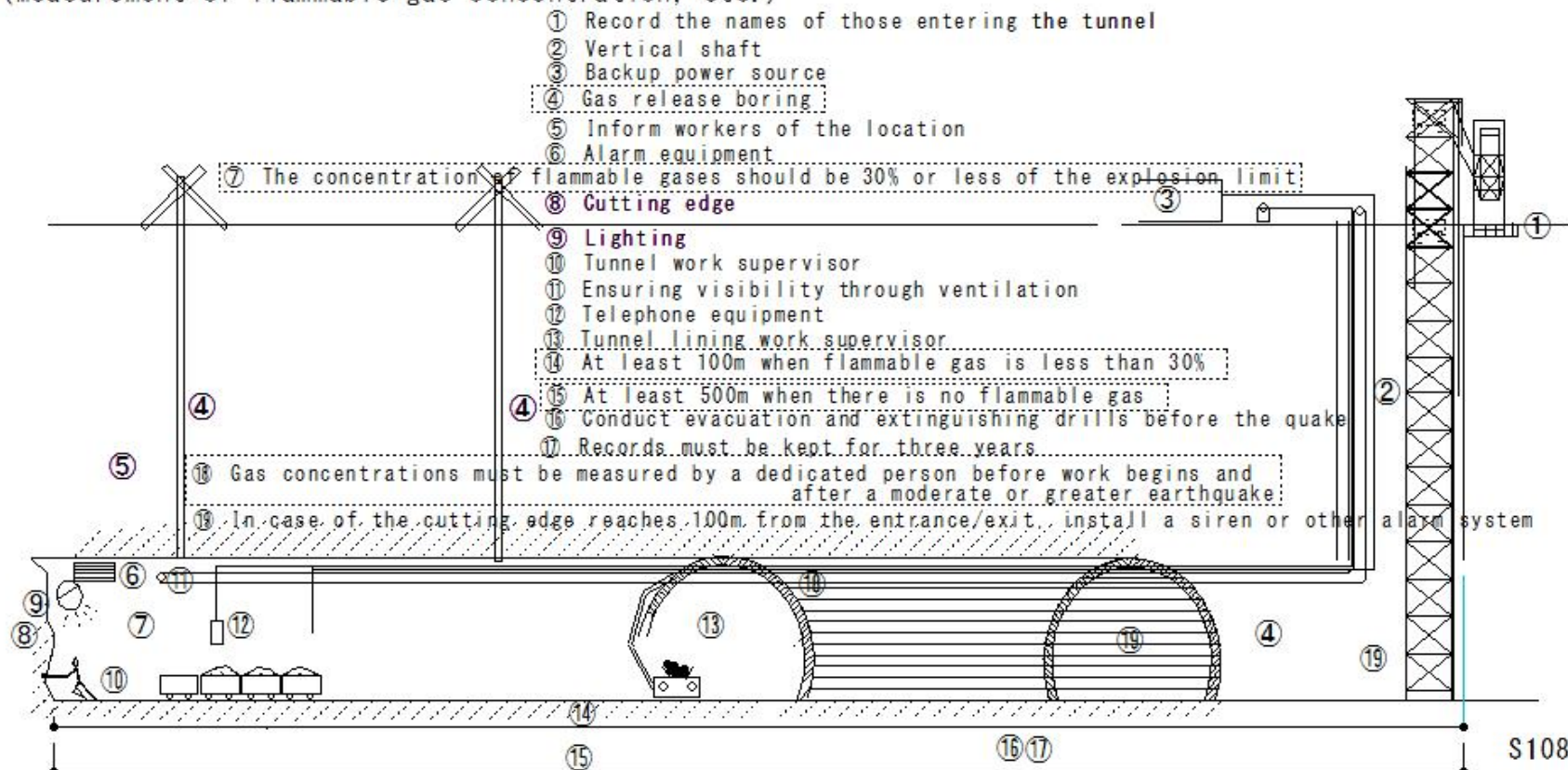


Fig. 3-18 Tunnel excavation

S108
F127

(S1053) Tunnel

(S1053) Tunnel

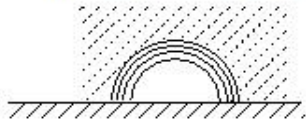
Management of tunnel work

Tunnels, etc. refer to tunnels other than tunnels and vertical shafts.

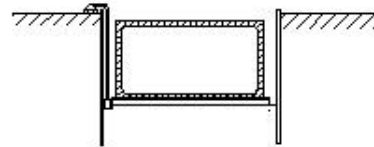
① Mountain tunnel construction method

2. Work piles, tunnels for underground power generation, storage of goods, large blasting, etc.

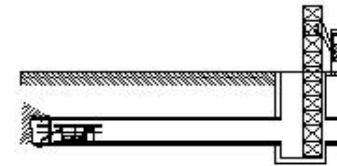
1. Tunnel construction



② Open cut construction method

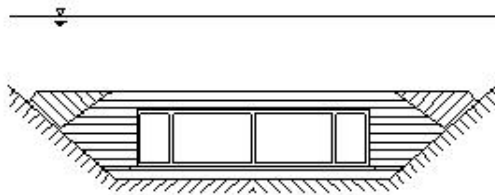


③ Shield construction method



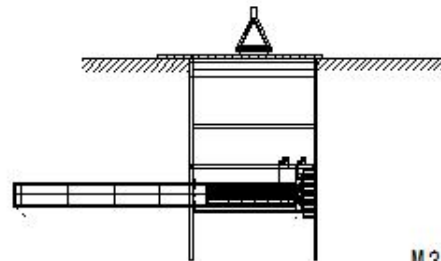
C1051
M420

④ trench method



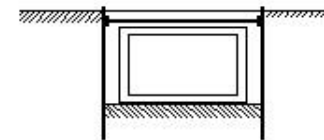
C1072

⑤ Push-through tunnel construction method



M396

⑥ Caisson tunnel construction method



T3
E505

(S1054) Tunnel

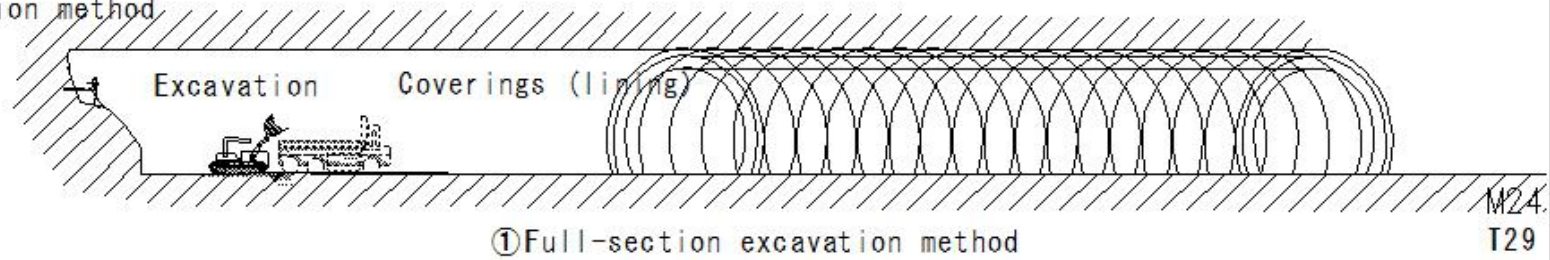
(S1054) Tunnel

Tunnel work management

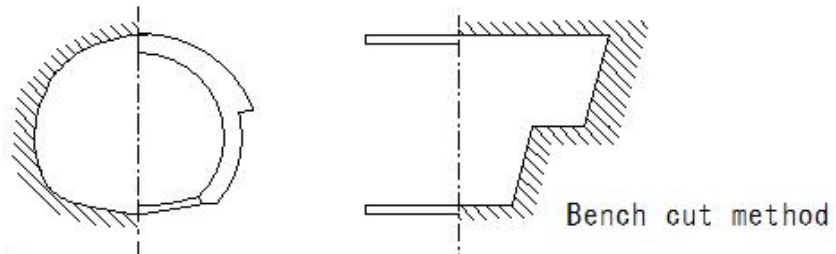
Excavation work

Excavation work using excavation machinery

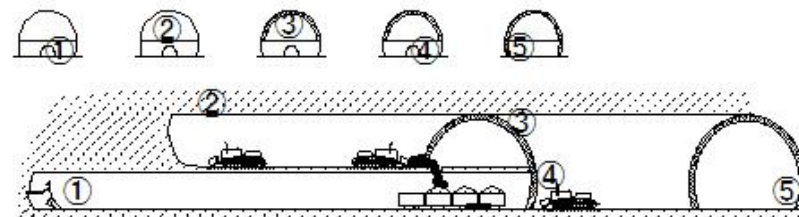
Full section method



Bench cut method



Heading excavation method



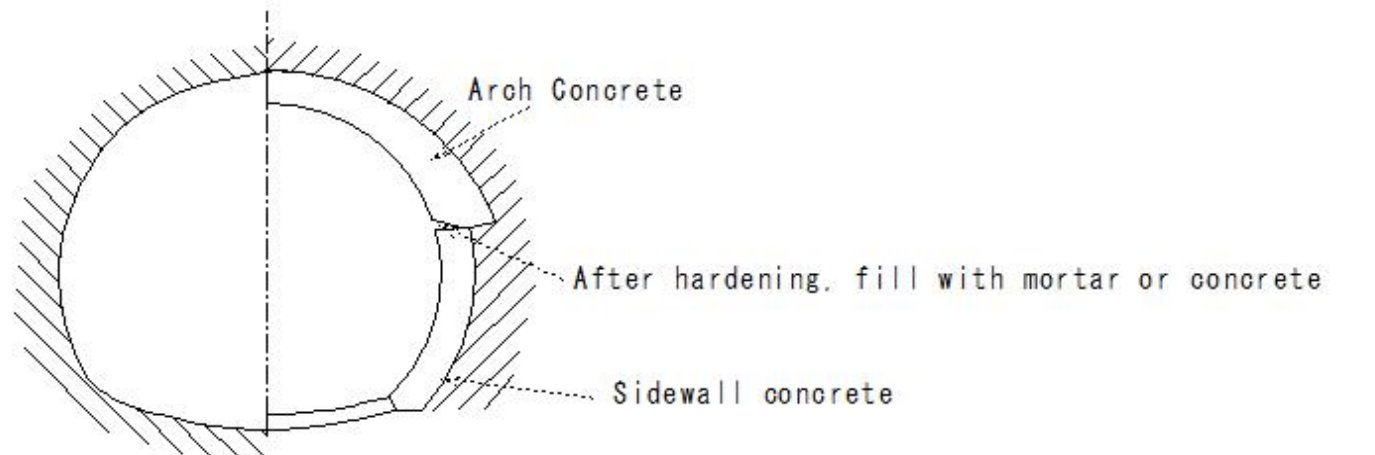
(S1055) Tunnel

(S1055) Tunnel

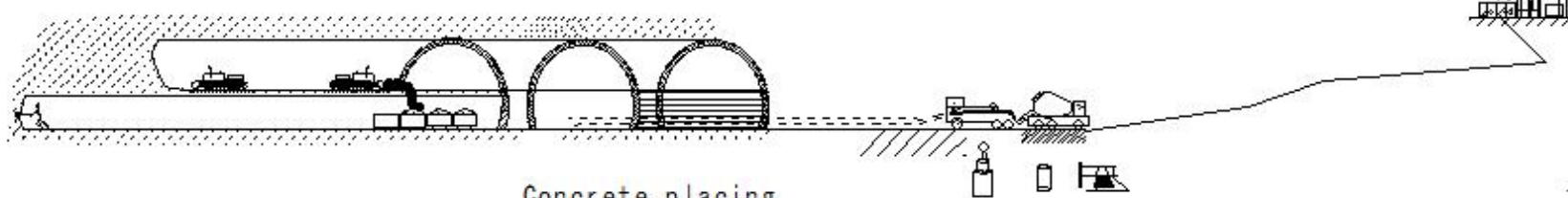
Tunnel work management

Covering work

Assembling, moving or dismantling tunnel formwork supports,
or pouring concrete associated with moving



T33



T78

(S1056) Tunnel

(S1056) Tunnel

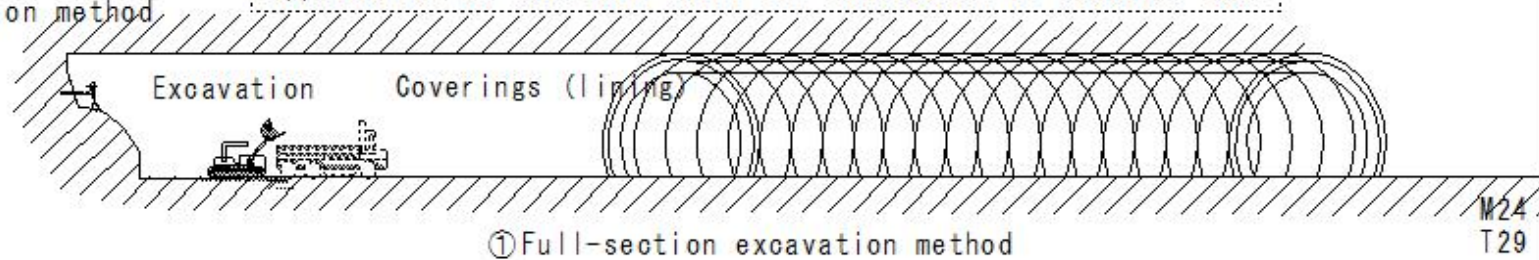
Tunnel work management

Excavation of tunnels, etc.

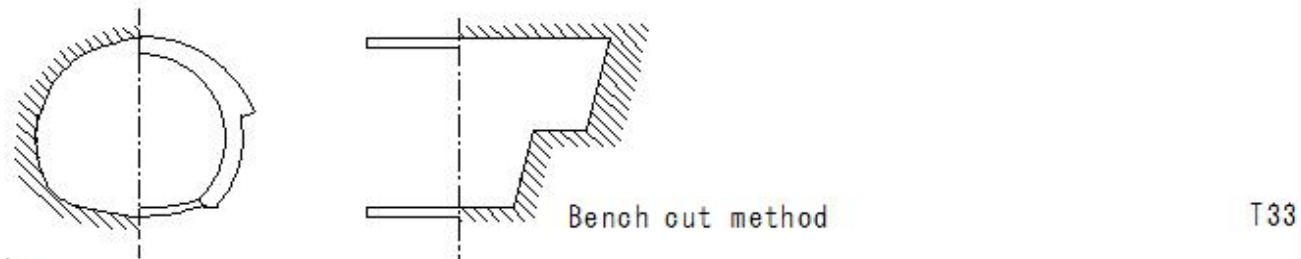
Safety and Health Regulations 383-2

Appointment of the work chief for excavation of tunnels, etc.

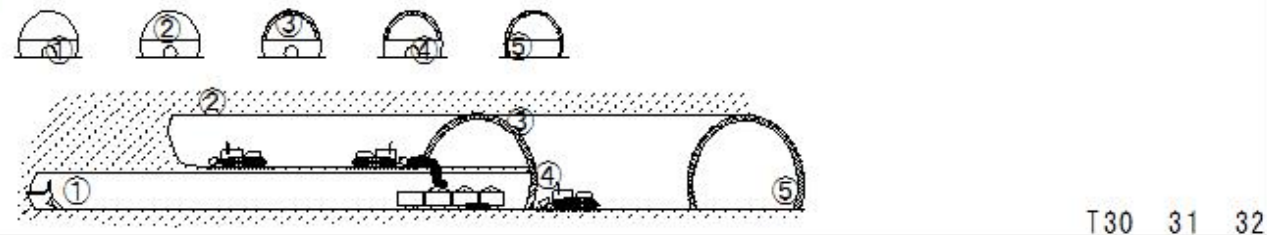
Full section method



Bench cut method



Heading excavation method



(S1057) Tunnel

(S1057) Tunnel

Management of tunnel work

Excavation of tunnels, etc.

Safety and Health Regulations 383-3

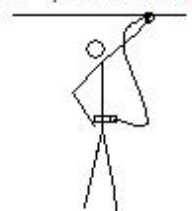
(Duties of the tunnel excavation work chief)

Article 383-3: The employer must have the tunnel excavation work chief perform the following:

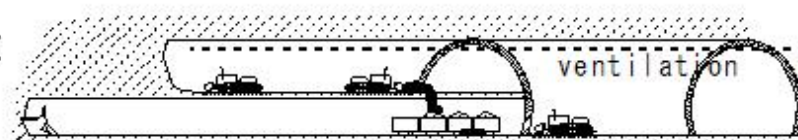
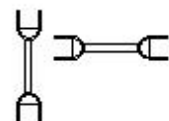
1. Determine the method of work and the placement of workers, and directly supervise the work.
2. Determine the ventilation method, etc., and select respiratory protective equipment to be used by workers.
3. Check the function of tools, fall protection equipment with required performance, protective helmets, and respiratory protective equipment, and remove defective items.
4. Monitor the use of fall protection equipment with required performance, protective helmets, and respiratory protective equipment.

(Duties of the tunnel excavation work chief)

fall protection equipment



tools



ventilation

respiratory protective equipment

Safety First

safety helmets

tunnel excavation work chief

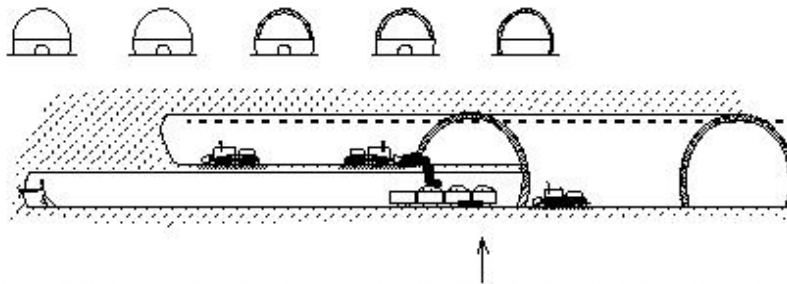
(S1058) Tunnel

(S1058) Tunnel

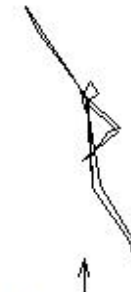
Management of tunnel work

Excavation of tunnels

Safety and Health Regulations 36-30



Excavation work or associated transportation of rubble, materials, etc.



Special training course completed

(S1059) Tunnel

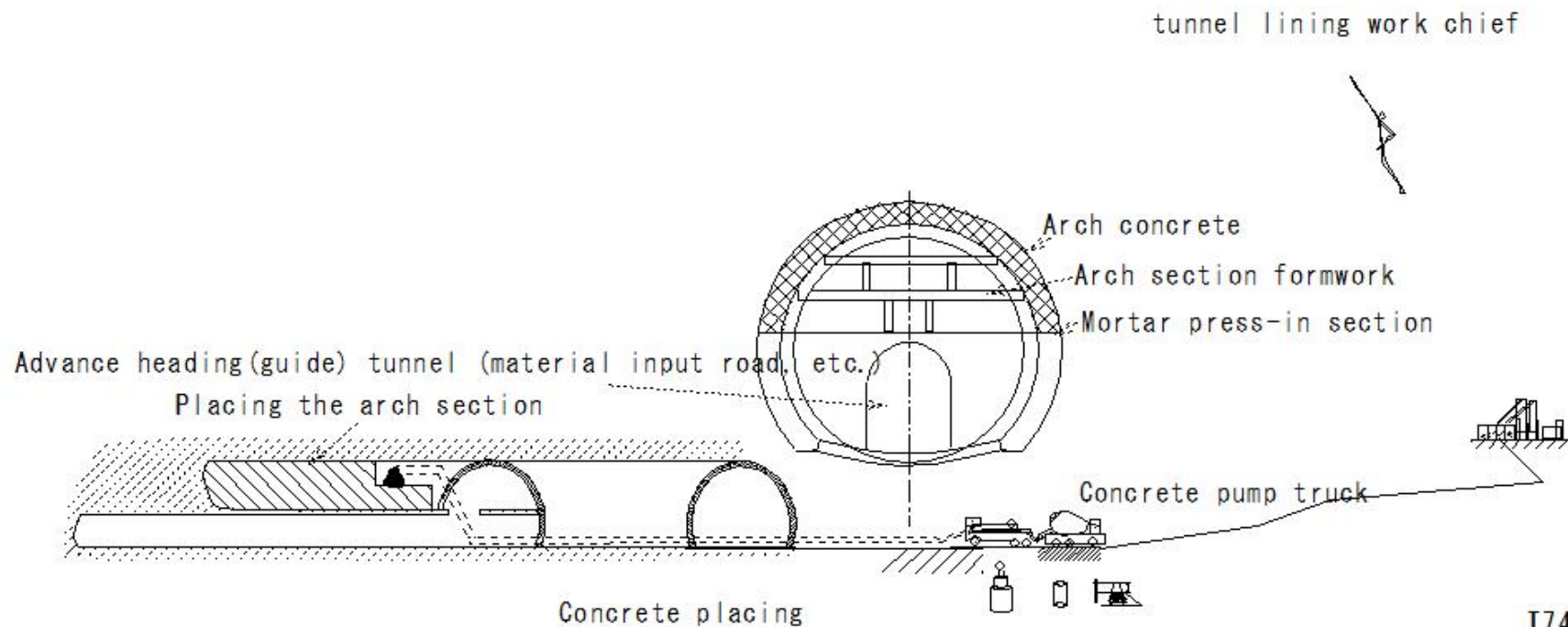
(S1059) Tunnel

Management of tunnel work, etc.

Excavation of tunnels, etc.

Safety and Health Regulations No. 383-4

(Appointment of a tunnel lining work chief)



(S1060) Tunnel

(S1060) Tunnel I

Management of tunnel work, etc.

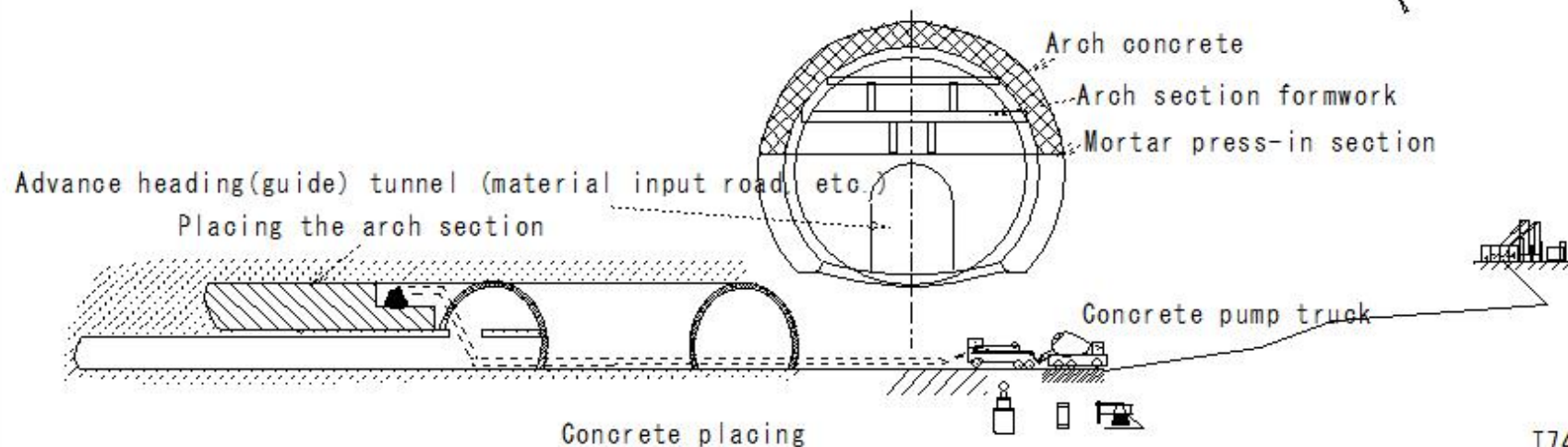
Special training course completed

Safety and Health Regulations 36-30

Work such as pouring concrete for lining

Special training course completed

Work such as pouring concrete for lining



(S1061) Tunnel

(S1061) Tunnel

Management of tunnel work

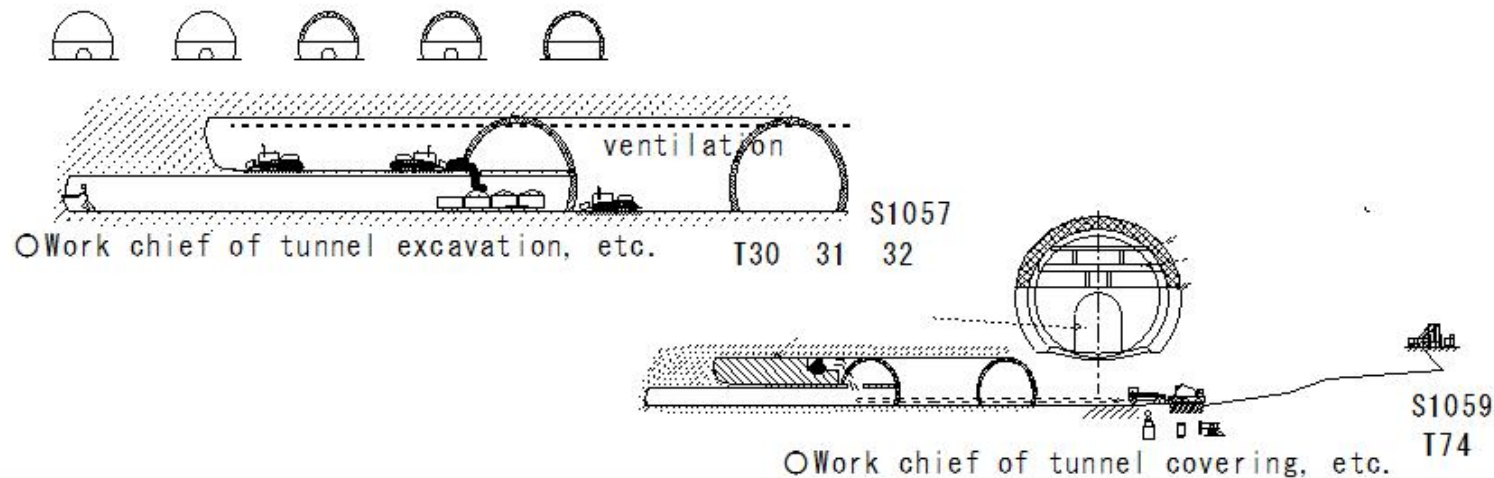
Work requiring the appointment of a work chief

○ Work chief of tunnel excavation, etc.

This is an important qualification for the excavation of tunnels, etc. (tunnels and tunnels other than vertical tunnels) or the associated work of piling muck, assembling tunnel supports, installing rock bolts, or spraying concrete, etc.

○ Work chief of tunnel covering, etc.

The person responsible for supervising the assembly of tunnel formwork and the work of covering the tunnel inner wall, etc.



(S1062) Tunnel

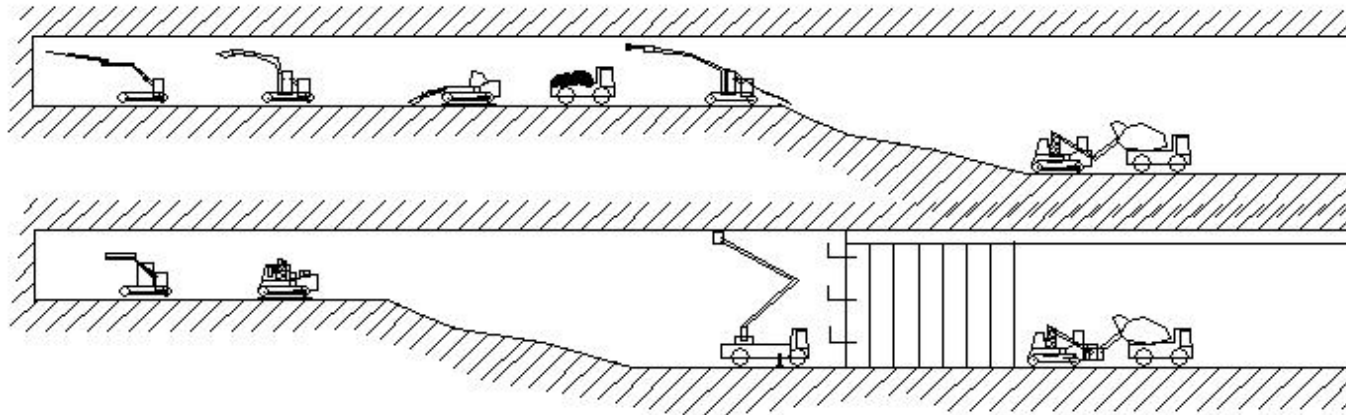
(S1062) Tunnel

Work management for tunnels, etc.

Prevention of dangers due to rock falls, collapse of ground, etc.

Safety and Health Regulations No. 384

- ① Methods for excavating tunnels, etc.,
- ② Methods for piling rubble
- ③ Types and structures of tunnel supports
- ④ Methods for assembling tunnel supports
- ⑤ Methods for installing lock bolts
- ⑥ Methods for spraying concrete, etc.
- ⑦ Treatment of loose rocks
- ⑧ Methods for treating and draining floodwaters



T215

(S1063) Tunnel

(S1063) Tunnel

Management of tunnel work

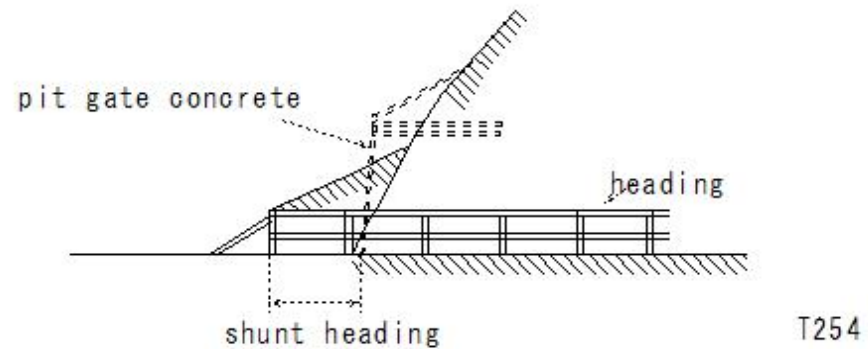
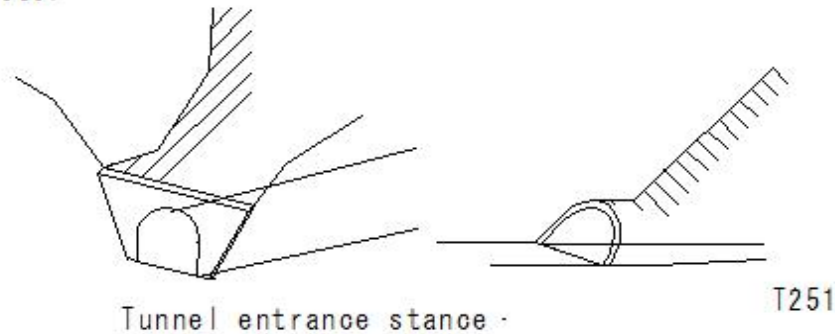
Prevention of dangers due to rock falls, ground collapse, etc.

Safety and Health Regulations 385

(Prevention of dangers due to ground collapse near entrances and exits)

Around the entrances and exits of tunnels, etc.

- ① Install earth retaining supports,
- ② Install protective nets,
- ③ Remove loose rocks,
- ④ Spray mortar



(S1064) Tunnel

(S1064) Tunnel

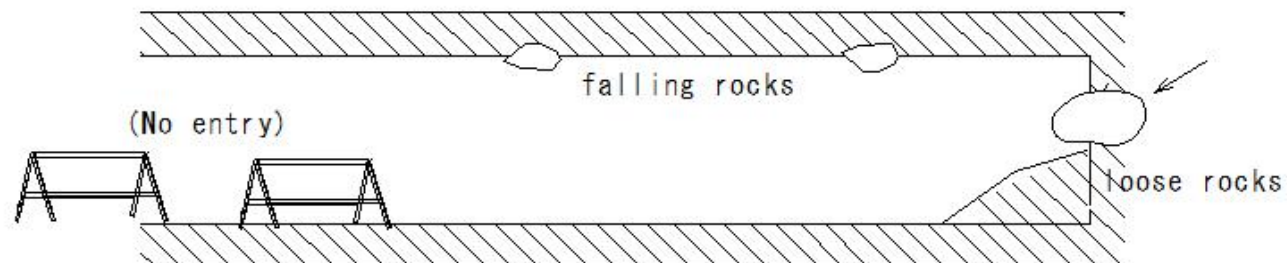
Management of tunnel work

Prevention of dangers due to rock falls, ground collapse, etc.

Safety and Health Regulations No. 386

(No entry)

- ① Workers must not enter.
- ② Areas where loose rocks are being removed or areas where reinforcement or repair work for tunnel supports is being carried out due to falling loose rocks
- ③ Areas where rocks have fallen or surface damage has occurred
- ④ Areas where rocks have fallen or surface damage has occurred



E497

S863

(S1065) Tunnel

(S1065) Tunnel

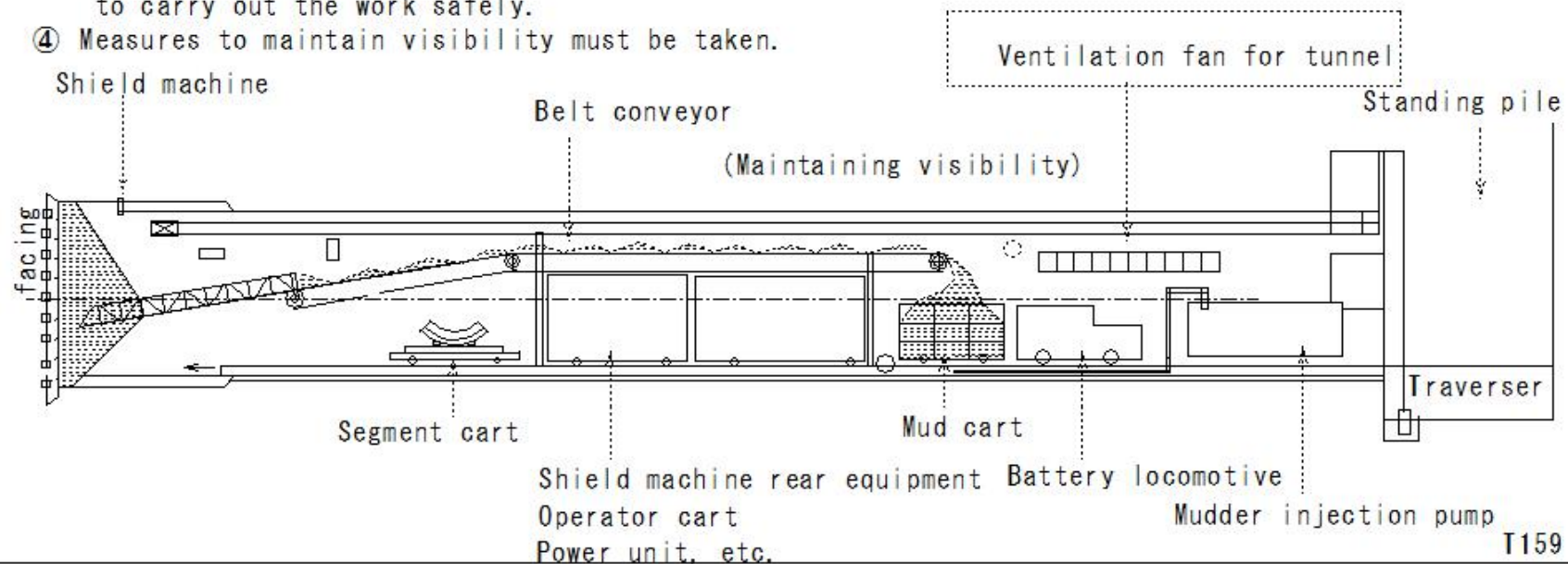
Management of tunnel work

Prevention of dangers due to rock falls, ground collapse, etc.

Safety and Health Regulations No. 387

(Maintaining visibility)

- ① Construction work of tunnels, etc.
- ② In case of visibility inside a tunnel, etc. is significantly restricted by exhaust gases, dust
- ③ Ventilate, water, etc., and take measures to maintain visibility, which are necessary to carry out the work safely.
- ④ Measures to maintain visibility must be taken.



(S1066) Tunnel

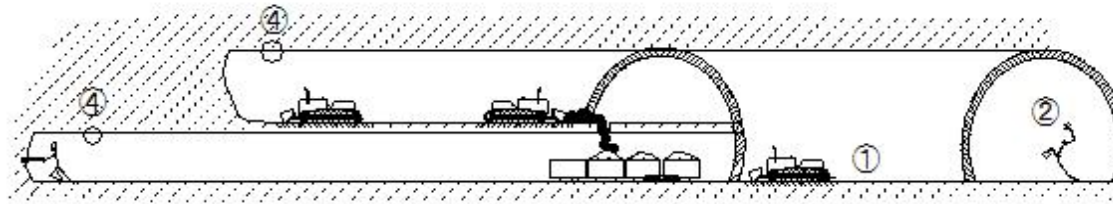
(S1066) Tunnel

Management of tunnel work

Prevention of dangers due to rock falls, ground collapse, etc.

Safety and Health Regulations No. 388 Safety and Health Regulations No. 364-367

- ① Routes of transport machinery, etc.
- ② Placement of guides
- ③ Wearing protective helmets
- ④ Maintaining illumination



(S1067) Tunnel

(S1067) Tunnel

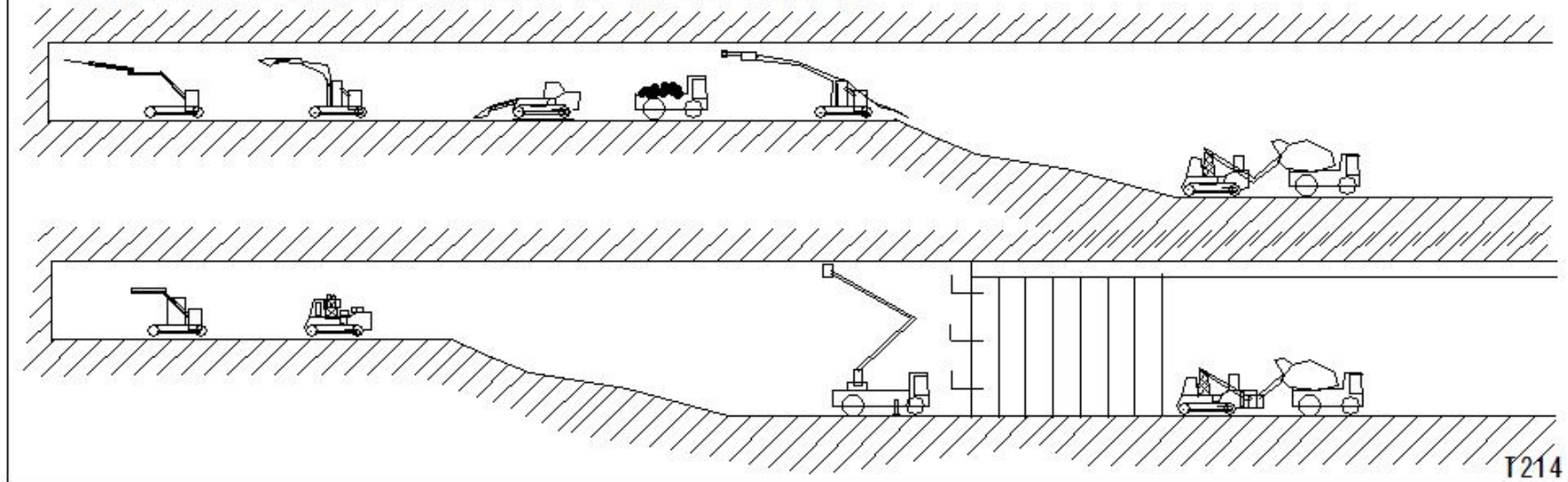
Management of tunnel work

Prevention of dangers due to rock falls, ground collapse, etc.

Safety and Health Regulations 651

(Measures for tunnels, etc.)

- ① In case of carrying out construction work such as tunnels
- ② Rock falls or surface shedding
- ③ Installing supports
- ④ Installing Rock bolts
- ⑤ Measures to prevent rock falls or surface shedding



(S1068) Tunnel

(S1068) Tunnel

Management of tunnel work

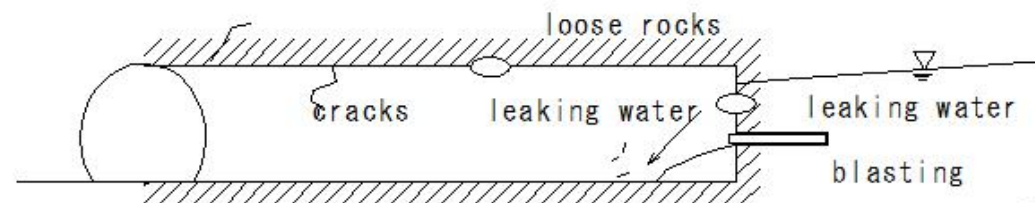
Prevention of dangers caused by rock falls, ground collapse, etc.

Safety and Health Regulations 652

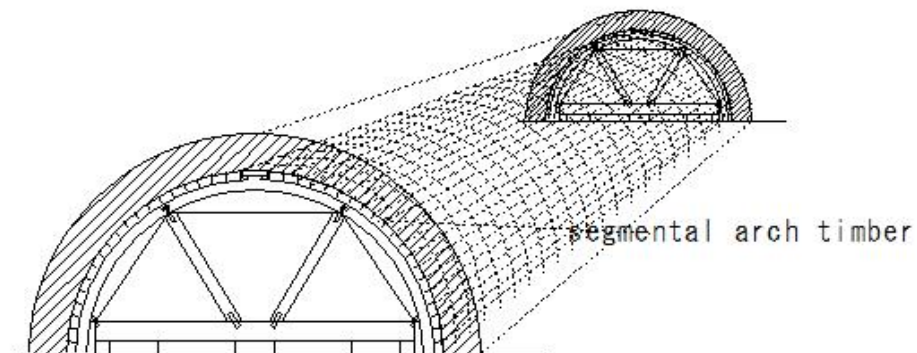
(Measures for tunnel-type Frame Falsework)

Pay attention to changes in the ground

① Tunnel-type Frame Falsework



S1051



T246

T240

(S1069) Tunnel

(S1069) Tunnel

Management of tunnel operations

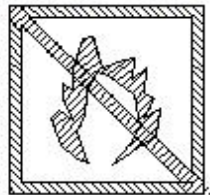
Prevention of explosions, fires, etc. in tunnels

Safety and Health Regulations 389

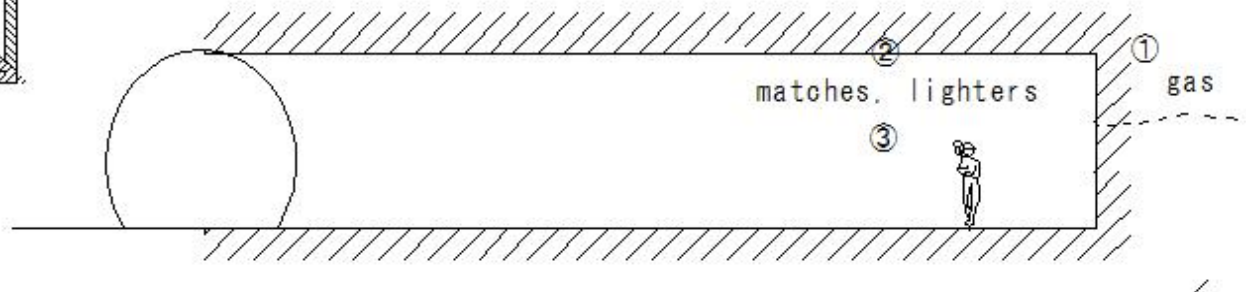
(Prohibition of carrying ignition tools, etc.)

- ① Flammable gas is present
- ② Fire, matches, lighters, and other items that may cause fire
- ③ Prohibition of bringing items into tunnels, etc.
- ④ Post a notice prohibiting bringing items in a conspicuous place near the entrance/exit

No open flames



④



(S1070) Tunnel

(S1070) Tunnel

Management of tunnel operations

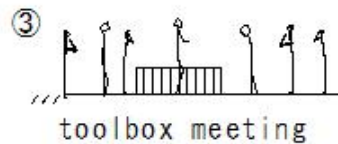
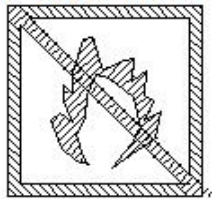
Prevention of explosions, fires, etc. in tunnels

Safety Health Regulations 389-2

(Measures to be taken when an automatic alarm is activated)

- ① In case of an automatic alarm is activated, the relevant
- ② Measures to be taken to prevent explosions or fires caused by flammable gases
- ③ Must be made known to workers.

No open flames



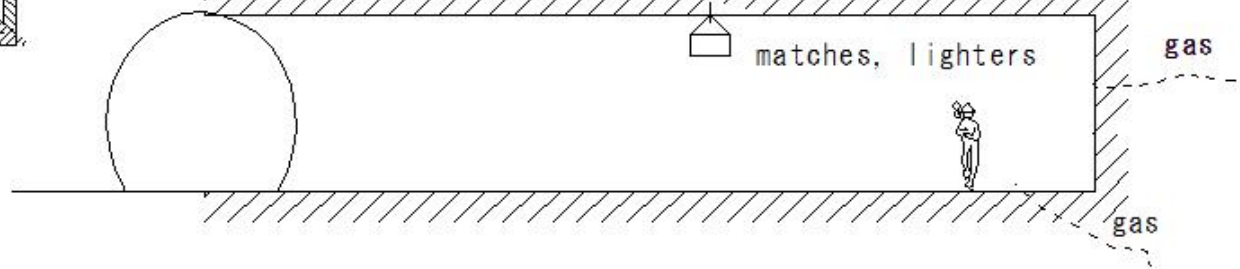
Inform

① ②
automatic alarm

matches, lighters

gas

gas



(S1071) Tunnel

(S1071) Tunnel

Management of tunnel operations

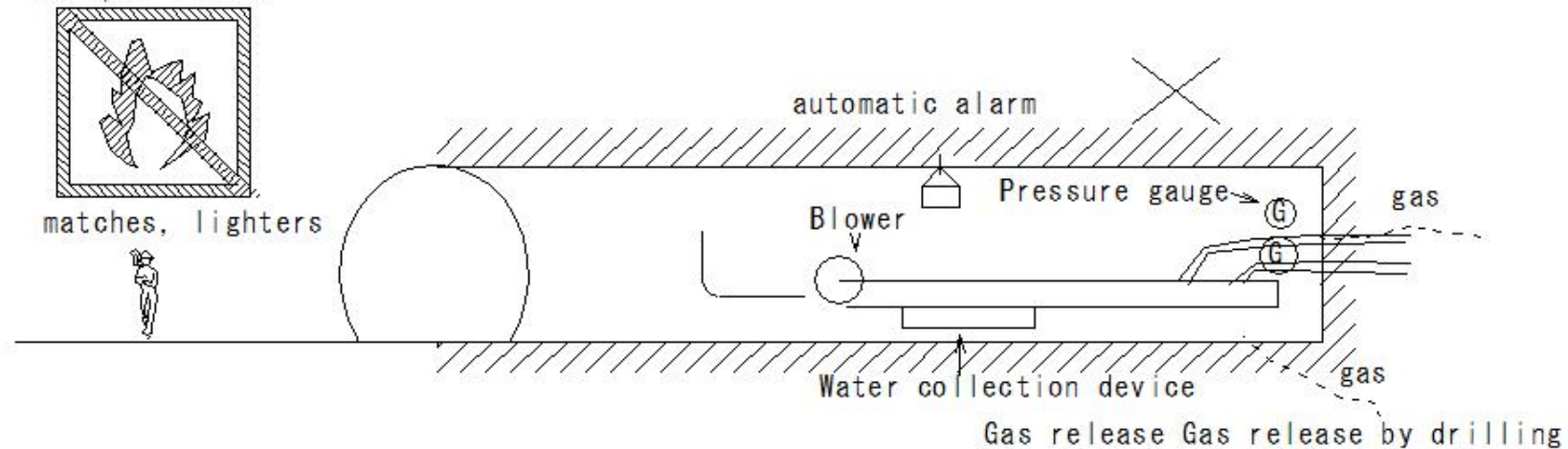
Prevention of explosions, fires, etc. in tunnels

The Safety and Health Regulations 389-2-2

(Measures such as gas release)

- ① In case of flammable gas is present,
- ② To prevent explosions or fires caused by the flammable gas,
- ③ Gas release by drilling
- ④ Necessary measures must be taken to prevent the escape of flammable gas.

No open flames



(S1072) Tunnel

(S1072) Tunnel

Management of tunnel operations

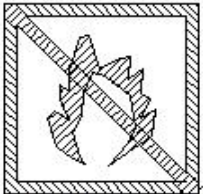
Prevention of explosions, fires, etc. in tunnels

Safety and Health Regulations 389-3

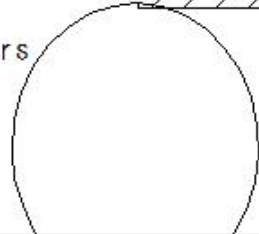
(Fire prevention measures when performing gas welding and other work)

- ① Remove rags, wood chips, waste paper, and other flammable materials in the vicinity
- ② Cover flammable materials with non-flammable materials
- ③ Install partitions to prevent the scattering of sparks, etc.

No open flames



matches, lighters

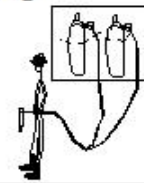


rags, wood chips, waste paper

① ② ③



Gas welding



(S1073) Tunnel

(S1073) Tunnel

Management of tunnel operations

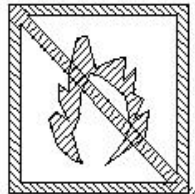
Prevention of explosions, fires, etc. in tunnels

Safety and Health Regulations 389-3

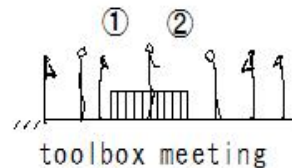
(Fire prevention measures when performing gas welding and other work)

- ① Inform everyone of the location of fire extinguishing equipment and how to use it.
- ② In case of an abnormality is found, take the necessary measures immediately.
- ③ After work is completed, make sure there is no risk of fire caused by sparks, etc.

No open flames



matches, lighters

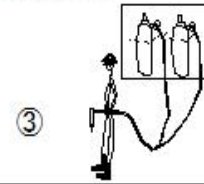


Inform

rag, wood chips, waste paper



Gas welding



(S1074) Tunnel

(S1074) Tunnel

Management of tunnel operations

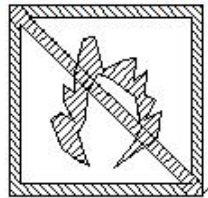
Prevention of explosions, fires, etc. in tunnels

Safety and Health Regulations 389-4

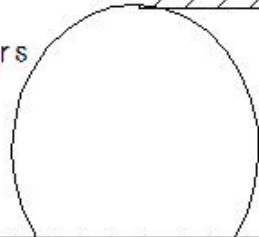
(Fire prevention officer)

- ① Places where fire or arc is used inside
- ② Appoint a fire prevention officer
- ③ Monitor the use of fire or arc,
- ④ In case of any abnormality is found, take the necessary measures immediately.
- ⑤ Check the status of extinguishing any remaining fire

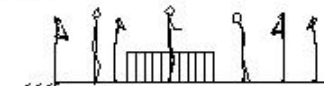
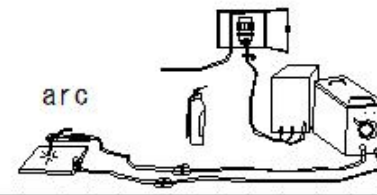
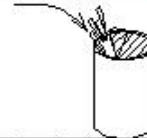
No open flames



matches, lighters



rags, wood chips, waste paper



toolbox meeting

Inform

(S1075) Tunnel

(S1075) Tunnel

Management of tunnel operations

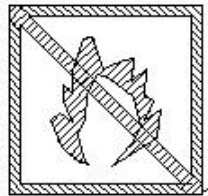
Prevention of explosions, fires, etc. in tunnels

Article 389-5 of the Safety and Health Regulations

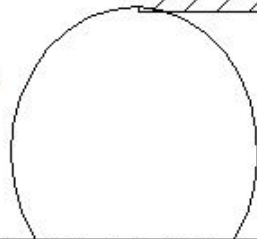
(Fire extinguishing equipment)

- ① In case of carrying out construction work on tunnels, etc.
- ② Places where fire or arcs are used
- ③ Places where distribution boards, transformers, or circuit breakers are installed
- ④ Fire extinguishing equipment must be installed
- ⑤ The installation locations and how to use them must be made known to the public.

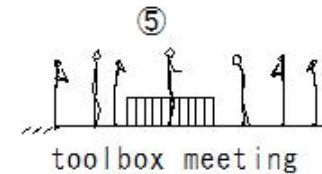
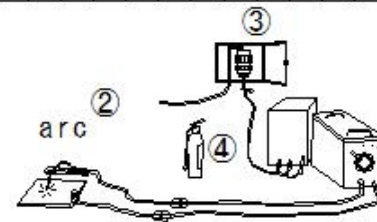
No open flames



matches, lighters



rags, wood chips, waste paper



Inform

(S1076) Tunnel

(S1076) Tunnel

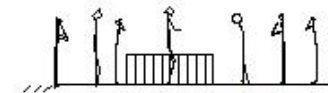
Management of tunnel operations

Prevention of explosions, fires, etc. in tunnels

Article 389-6 of the Safety and Health Regulations

(Construction of vertical shafts)

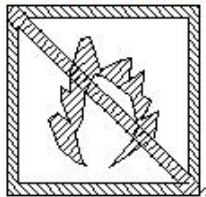
①Applies mutatis mutandis to construction of vertical shafts.



toolbox meeting

Inform

No open flames



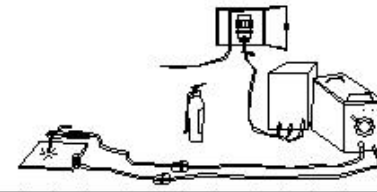
matches, lighters



bags, wood chips, waste paper



vertical shafts



(S1077) Tunnel

(S1077) Tunnel

Management of tunnel operations

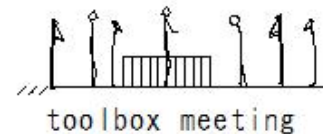
Prevention of explosions, fires, etc. in tunnels

Work management for tunnels, etc.

Evacuation of tunnels, etc.

Article 389-9 of the Safety and Health Ordinance

(Alarm equipment, etc.) In case of constructing tunnels, etc.,



② Inform

① In the event of a rock fall, flooding, gas explosion, fire, or other emergency

② In order to promptly inform the workers concerned,

③ The equipment listed in each item must be installed,

④ The location of the equipment must be made known to the workers concerned.

⑤ In case of the distance to the face reaches 100 meters

⑥ Alarm equipment such as sirens and emergency bells (alarm equipment)

⑦ In case of the distance reaches 500 meters Alarm equipment and telephones
and other communication devices

⑧ Only those that can make calls between the outside and inside of the mine (communication devices)

⑨ Alarm equipment and communication devices must be kept in working order at all times.

⑩ A backup power source must be provided.

⑤⑥ (alarm equipment) 100 meters

rock fall, flooding, gas explosion, fire

①

⑦⑧ communication devices 500 meters

(S1078) Tunnel

(S1078) Tunnel

Management of tunnel operations

Prevention of explosions, fires, etc. in tunnels

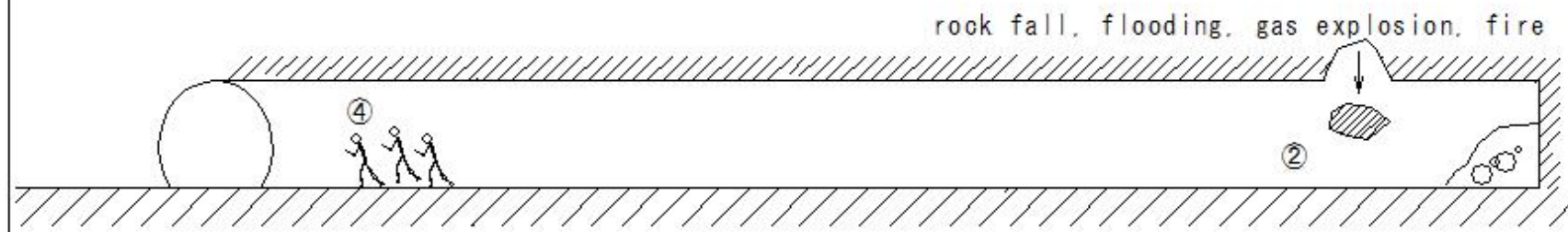
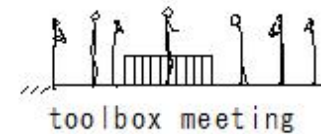
Work management for tunnels, etc.

Evacuation of tunnels, etc.

Article 389-7 of the Safety and Health Regulations

(Evacuation)

- ① Construction of tunnels
- ② In case of there is an imminent danger of a workplace accident due to a rock fall, flooding, etc.
- ③ Stop work immediately
- ④ Workers must be evacuated to a safe place.



(S1079) Tunnel

(S1079) Tunnel

Management of tunnel operations

Prevention of explosions, fires, etc. in tunnels

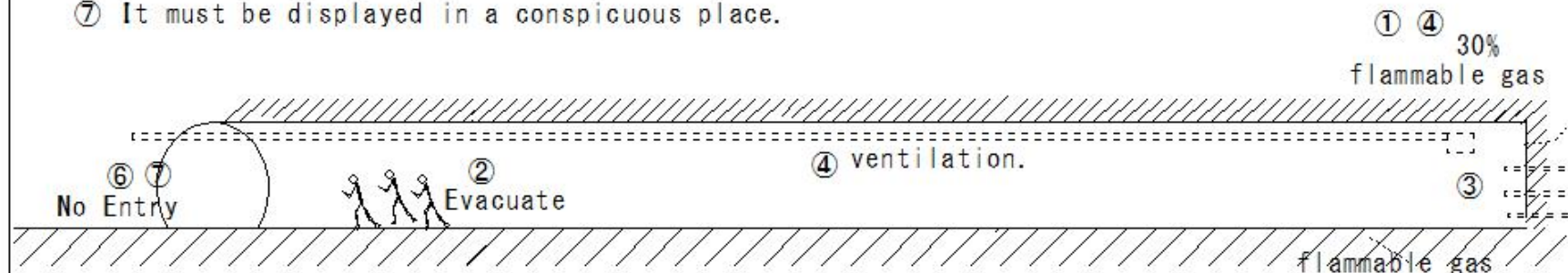
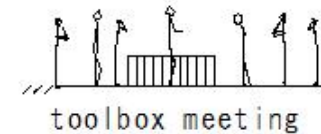
Work management for tunnels, etc.

Evacuation of tunnels, etc.

Article 389-8 of the Safety and Health Regulations

(Evacuation)

- ① In case of it is confirmed that the concentration of flammable gas is 30% or more of the lower explosion limit,
- ② Evacuate workers to a safe place immediately,
- ③ Stop using fire or other sources of ignition,
- ④ Take measures such as ventilation.
- ⑤ Until it is confirmed that the concentration of flammable gas is less than 30% of the lower explosion limit,
- ⑥ Entry by persons other than those involved must be prohibited,
- ⑦ It must be displayed in a conspicuous place.



(S1080) Tunnel

(S1080) Tunnel

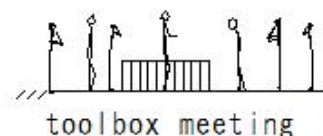
Work management for tunnels, etc.

Evacuation from tunnels, etc.

Article 389-10 of the Safety and Health Regulations

(Evacuation equipment)

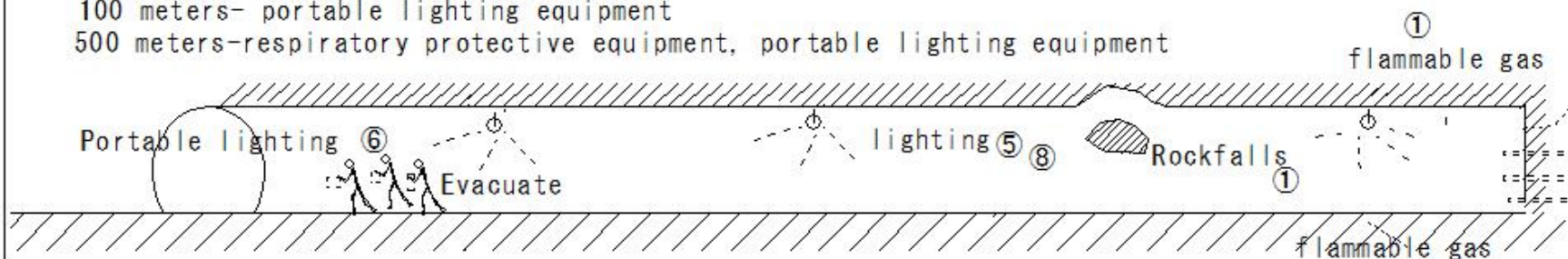
- ① Rockfalls, flooding, gas explosions
- ② Evacuation equipment
- ③ Publicize the installation locations and usage methods
- ④ Distance to the face is 100 meters
- ⑤ Portable lighting equipment such as flashlights ("portable lighting equipment")
- ⑥ In case of it reaches 500 meters, respiratory protective equipment, portable lighting equipment
- ⑦ Respiratory protective equipment - keep it effective and clean
- ⑧ Ensure lighting



④

100 meters- portable lighting equipment

500 meters-respiratory protective equipment, portable lighting equipment



(S1081) Tunnel

(S1081) Tunnel

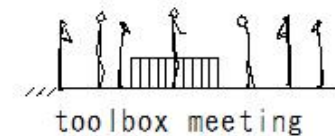
Work management for tunnels, etc.

Evacuation from tunnels, etc.

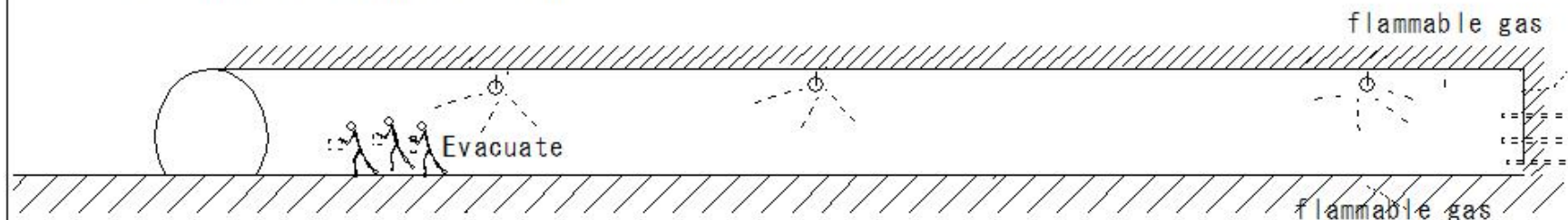
Article 389-11 of the Safety and Health Regulations

(Training for evacuation, etc.)

- ① For tunnels, etc., where the distance to the face is 100 meters (where flammable gas is present and there is a risk of explosion or fire),
- ② Evacuation and firefighting training must be conducted once every six months.
- ③ In case of training for evacuation, etc. is conducted, the following items must be recorded and kept for three years.
 1. Date of implementation
 2. Name of person who received training
 3. Content of training



(Training for evacuation, etc.)



(S1082) Tunnel

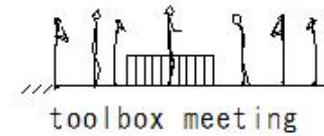
(S1082) Tunnel

Work management for tunnels, etc.

Evacuation from tunnels, etc.

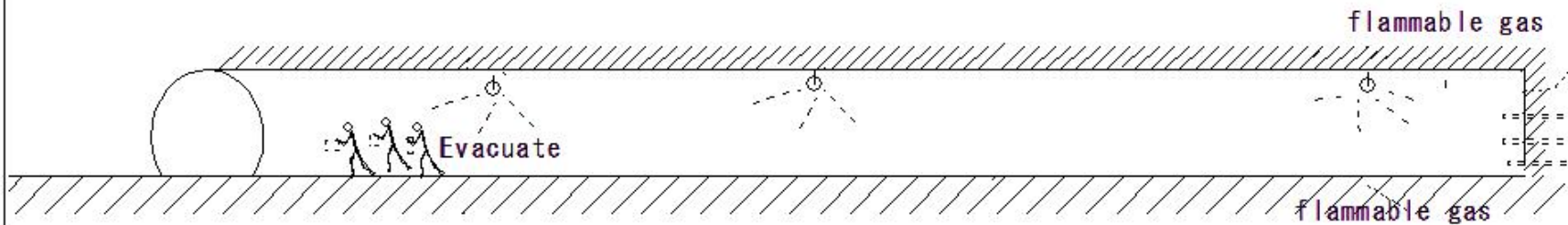
Article 642-2 of the Safety and Health Regulations

Unification of methods for carrying out Evacuation Training



Evacuation Training

(Training for evacuation, etc.)



(S1083) Tunnel

(S1083) Tunnel

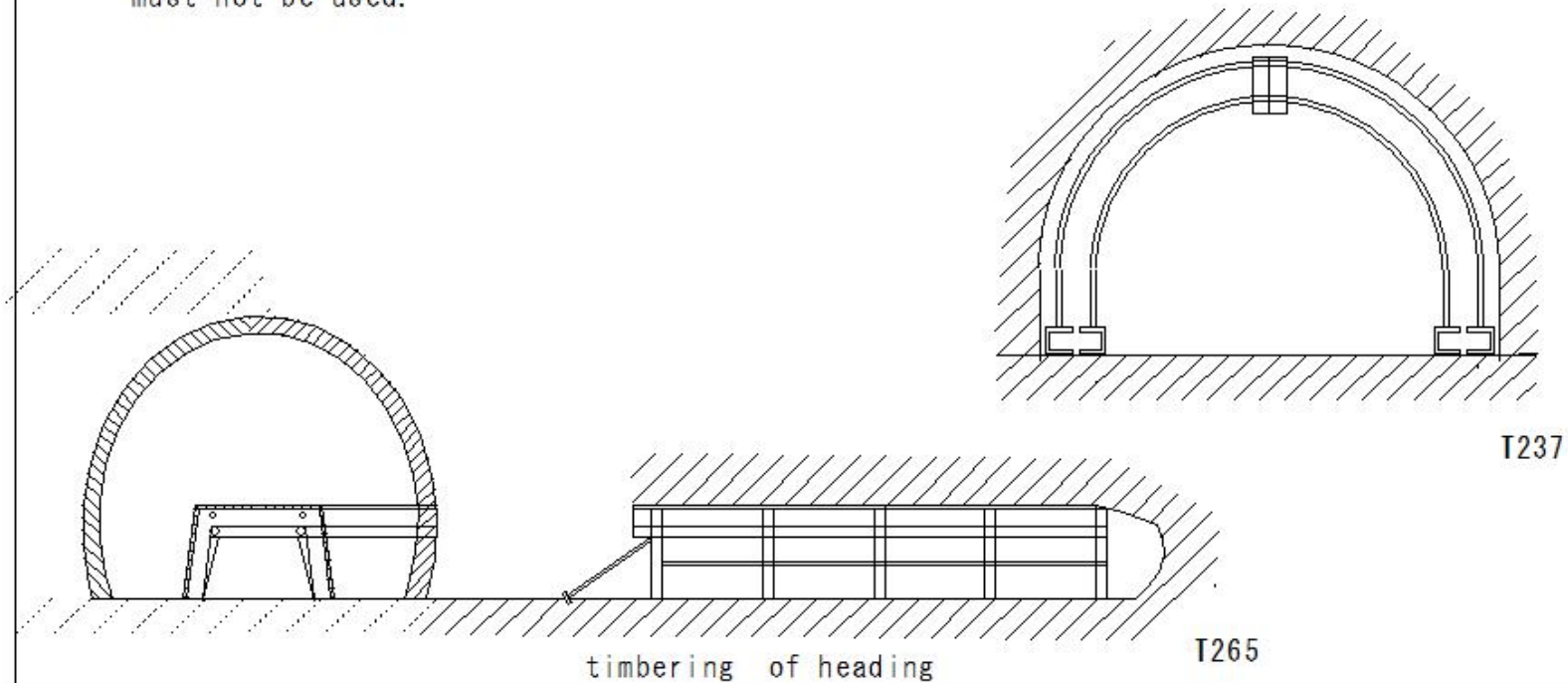
Management of tunnel work

Structure of tunnel supports

Article 390 of the Safety and Health Regulations

(Materials)

- ① Materials for tunnel supports that are significantly damaged, deformed, or corroded must not be used.



(S1084) Tunnel

(S1084) Tunnel

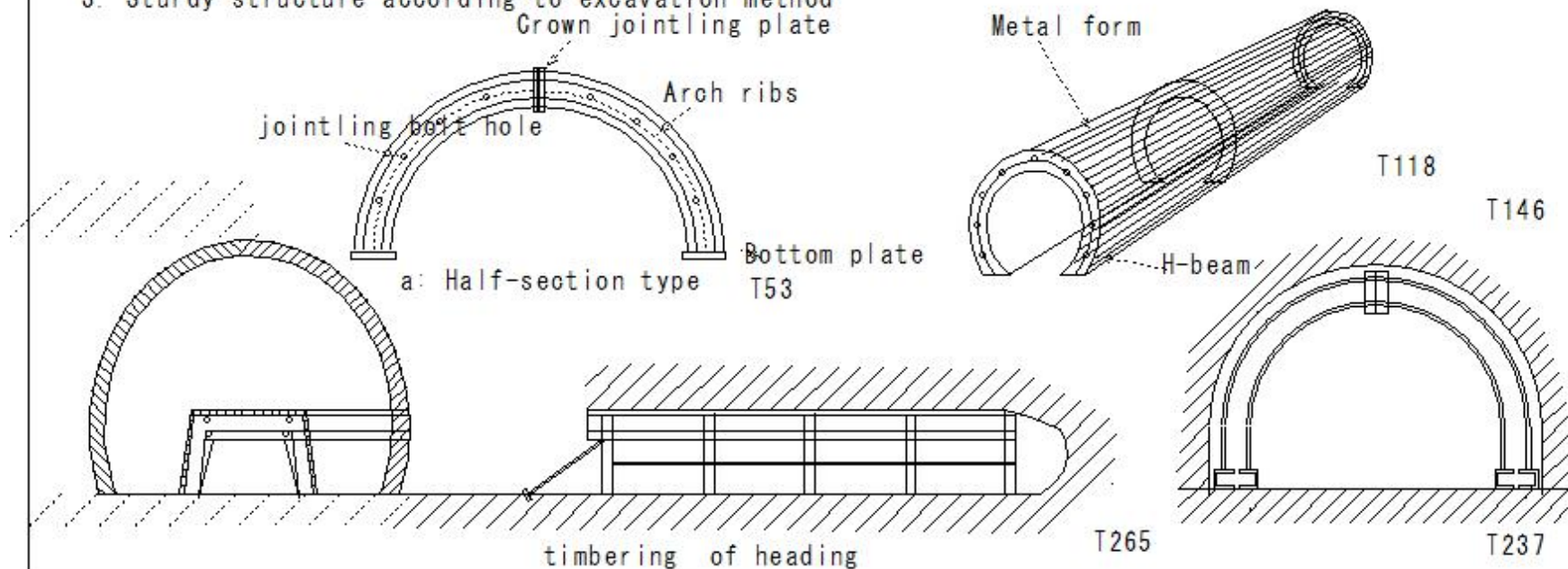
Management of tunnel work

Structure of tunnel supports

Safety and Health Regulations Article 391

(Structure of tunnel supports)

1. Structure of tunnel supports
2. Geology, strata, water content, spring water, cracks and loose rocks
3. Sturdy structure according to excavation method



(S1085) Tunnel

(S1085) Tunnel

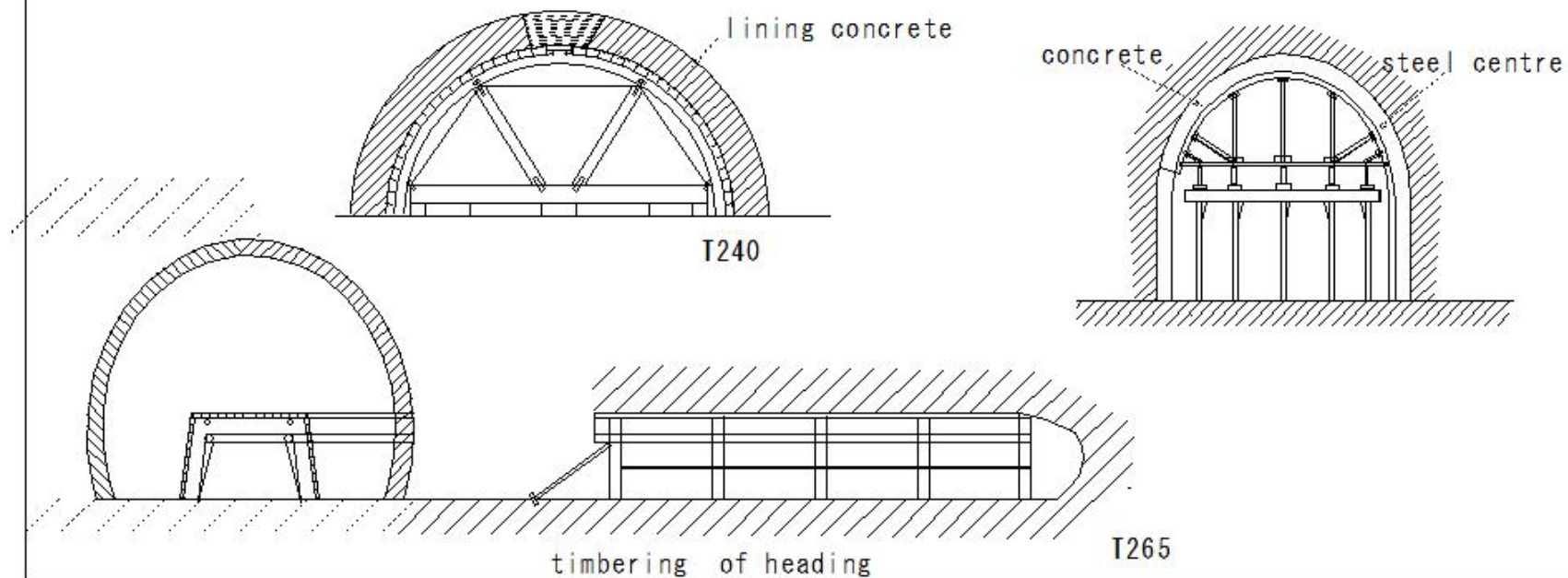
Management of tunnel work

Structure of tunnel supports

Article 392 of the Safety and Health Regulations

(Standard drawings)

- ① Assembling tunnel supports – Standard drawings must be created and assembled.
- ② The standard drawings show the layout, dimensions, and materials of the tunnel supports.



(S1086) Tunnel

(S1086) Tunnel

Management of tunnel work

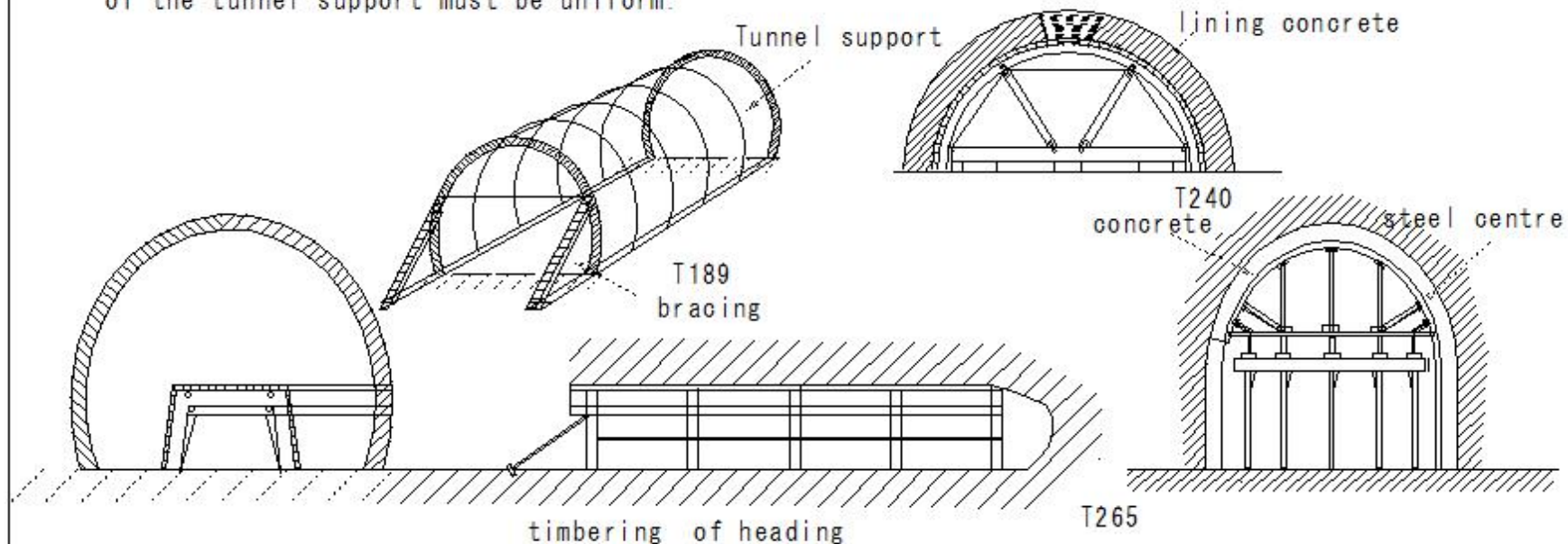
Structure of tunnel supports

Article 393 of the Safety and Health Regulations

(Assembly or modification)

Assembling and modifying tunnel supports

1. A set of components that make up the main structure must be placed on the same plane.
2. In the case of wooden tunnel supports, the degree of compression of each component of the tunnel support must be uniform.



(S1087) Tunnel

(S1087) Tunnel

Management of tunnel work

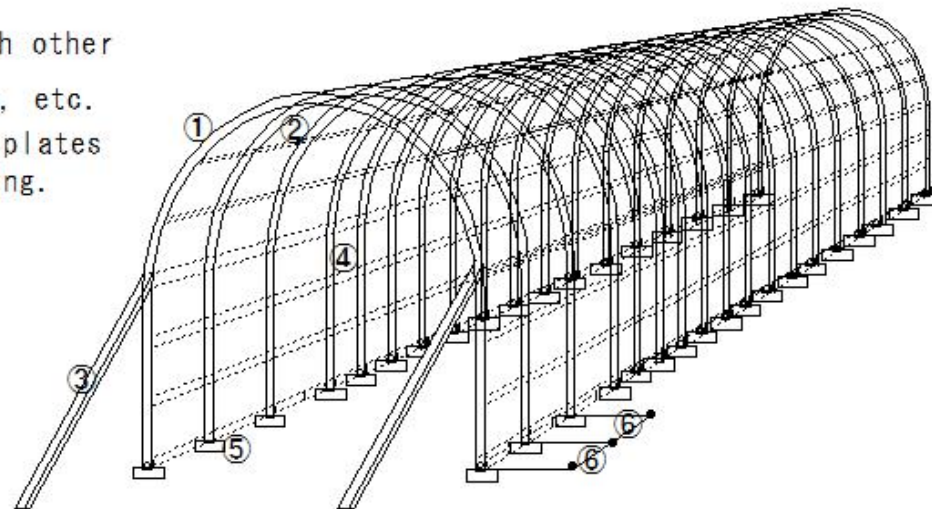
Structure of tunnel supports

Article 394 of the Safety and Health Regulations
(Prevention of dangers in tunnel supports)

Tunnel supports

○ Steel arch supports

- ① Take measures such as driving in wedges.
- ② Install sheet piles, arrow beams, liner plates, etc.
- ③ Install guardrails at the entrances and exits of tunnels, etc.
- ④ Firmly connect the main materials to each other using tie bolts, tie beams, braces, etc.
- ⑤ Take measures such as using countersunk plates for the legs to prevent them from sinking.
- ⑥ The erection interval should be 1.5 meters or less.



(S1088) Tunnel

(S1088) Tunnel

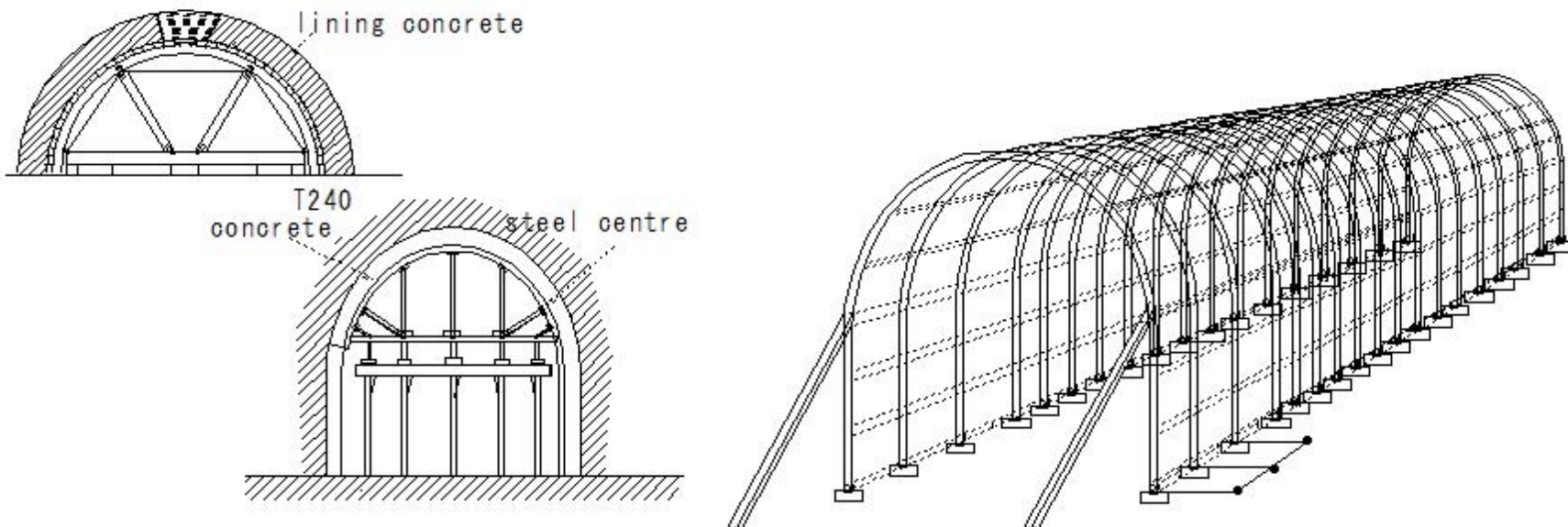
Management of tunnel work

Structure of tunnel supports

Safety and Health Regulations Article 395

(Removal of components)

- ① In case of removing components of tunnel supports
- ② After taking measures to transfer the load to tunnel frame supports, etc.
- ③ Remove the components



(S1089) Tunnel

(S1089) Tunnel

Management of tunnel work

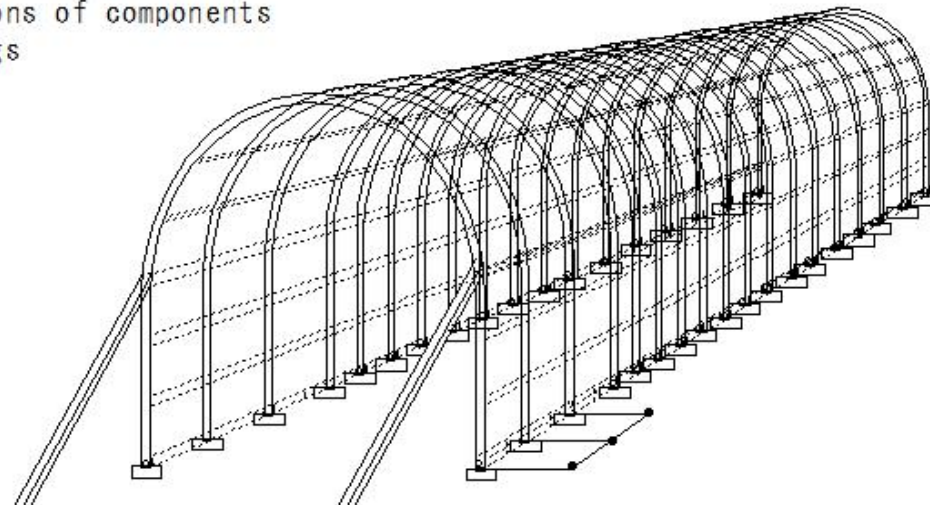
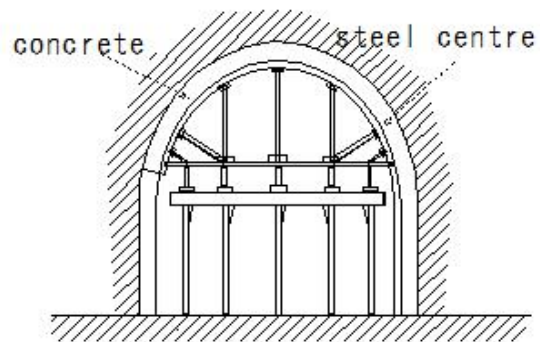
Structure of tunnel supports

Article 396 of the Safety and Health Regulations

(Inspection)

- ① Inspect every day and after an earthquake of moderate magnitude or greater.
- ② In case of any abnormality is found, reinforce or repair must be made immediately.
 1. Presence and condition of damage, deformation, corrosion, displacement, and falling off of components
 2. Degree of compression of components
 3. Condition of connections and intersections of components
 4. Presence and condition of sinking of legs

Earthquake



(S1090) Tunnel

(S1090) Tunnel

Management of tunnel work

Structure of tunnel supports

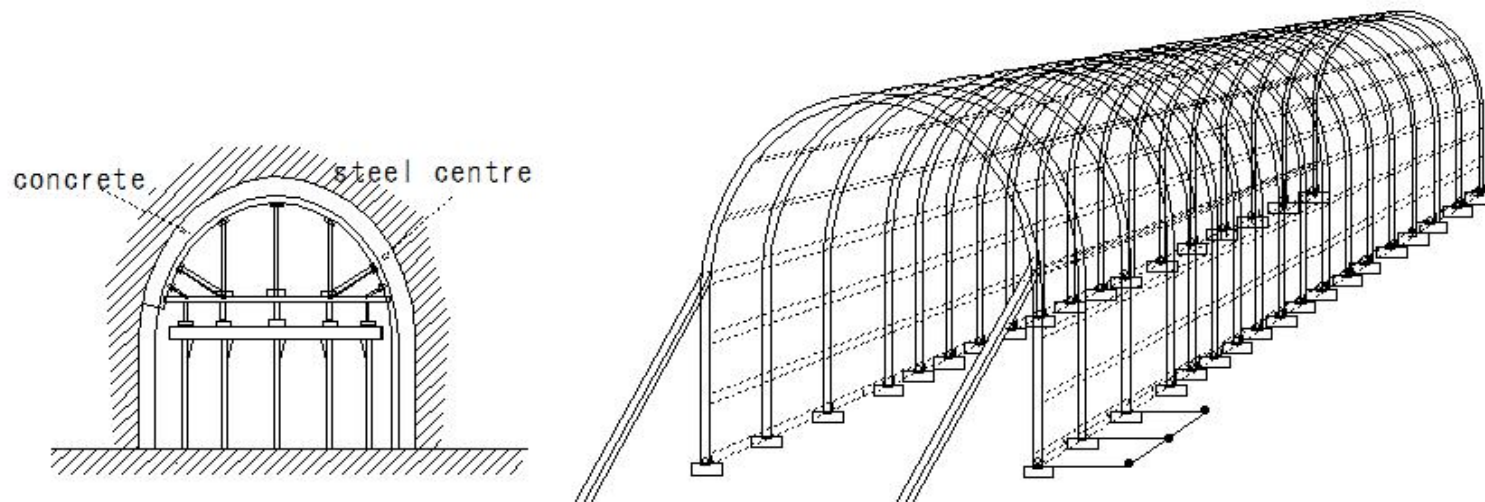
Article 397/398 of the Safety and Health Regulations

(Materials)

- ① Materials for supports must not be used that are significantly damaged, deformed or corroded.

(Structure)

- ② Materials must be sturdy according to the load, shape of the formwork, etc.



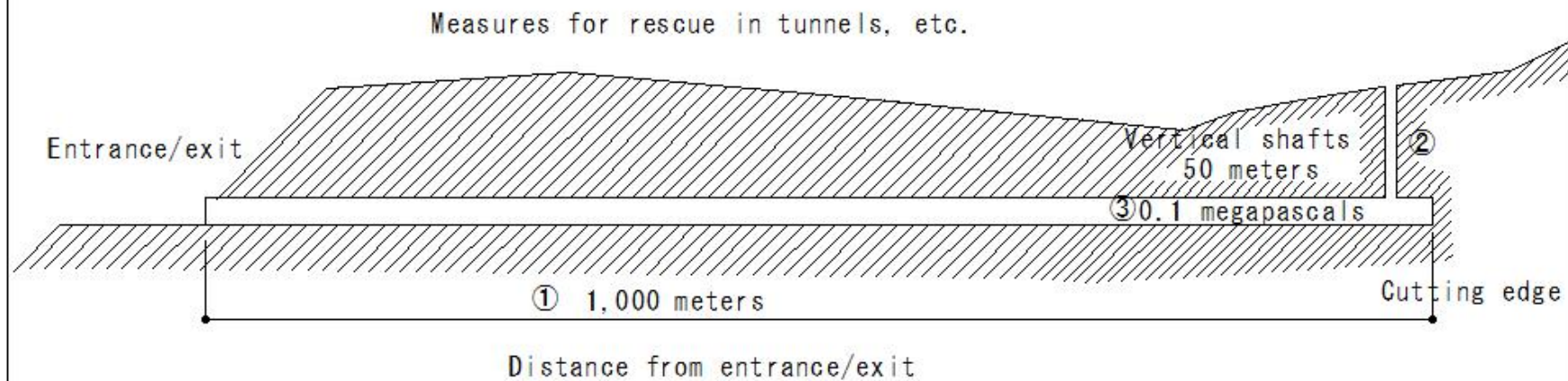
(S1091) Tunnel

(S1091) Tunnel

Measures for rescue in tunnels, etc.

Article 9-2 of the Industrial Safety and Health Ordinance

- ① Work at a location 1,000 meters or more away from the entrance/exit
- ② Vertical shafts with a depth of 50 meters or more
- ③ Work involving compressed air, with a gauge pressure of 0.1 megapascals or more



(S1092) Tunnel

(S1092) Tunnel

Measures for rescue in tunnels, etc.

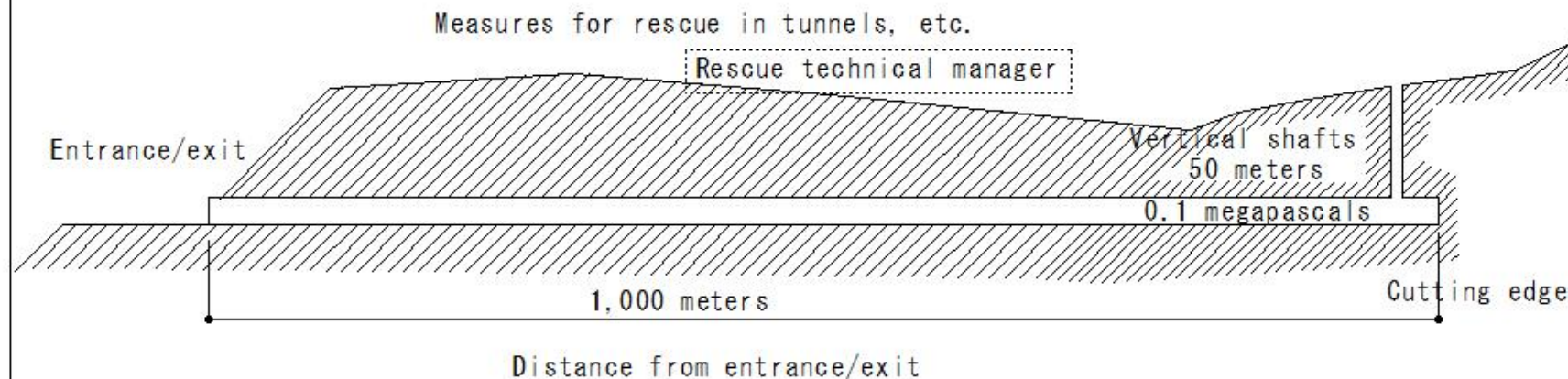
Article 24-7・8 of the Safety and Health Regulations

Appoint a dedicated person at the workplace.

Rescue technical manager

(Qualifications for a person who manages technical matters related to rescue)

1. A person who has more than three years of experience in construction work on tunnels, etc.
2. A person who has more than three years of experience in work using compressed air construction methods



(S1093) Tunnel

(S1093) Tunnel

Measures for rescue in tunnels, etc.

Article 24-3 of the Safety and Health Regulations

(Machinery, etc. necessary for rescue)

① Respiratory or oxygen respirator

② Measuring equipment necessary for measuring the concentration of methane, hydrogen sulfide, carbon monoxide, and oxygen

③ Portable lighting equipment such as flashlights

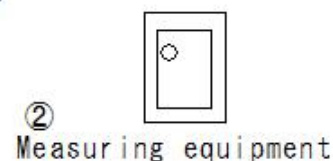
④ Machinery, etc. necessary for rescue of workers

Ladders, ropes

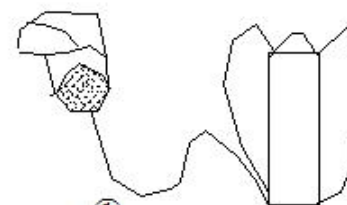
Respiratory apparatus

Evacuation equipment

Don't forget to check and confirm



③ Portable lighting



① Oxygen respirator

④ Ladders

Measures for rescue in tunnels, etc.

Rescue technical manager

Entrance/exit

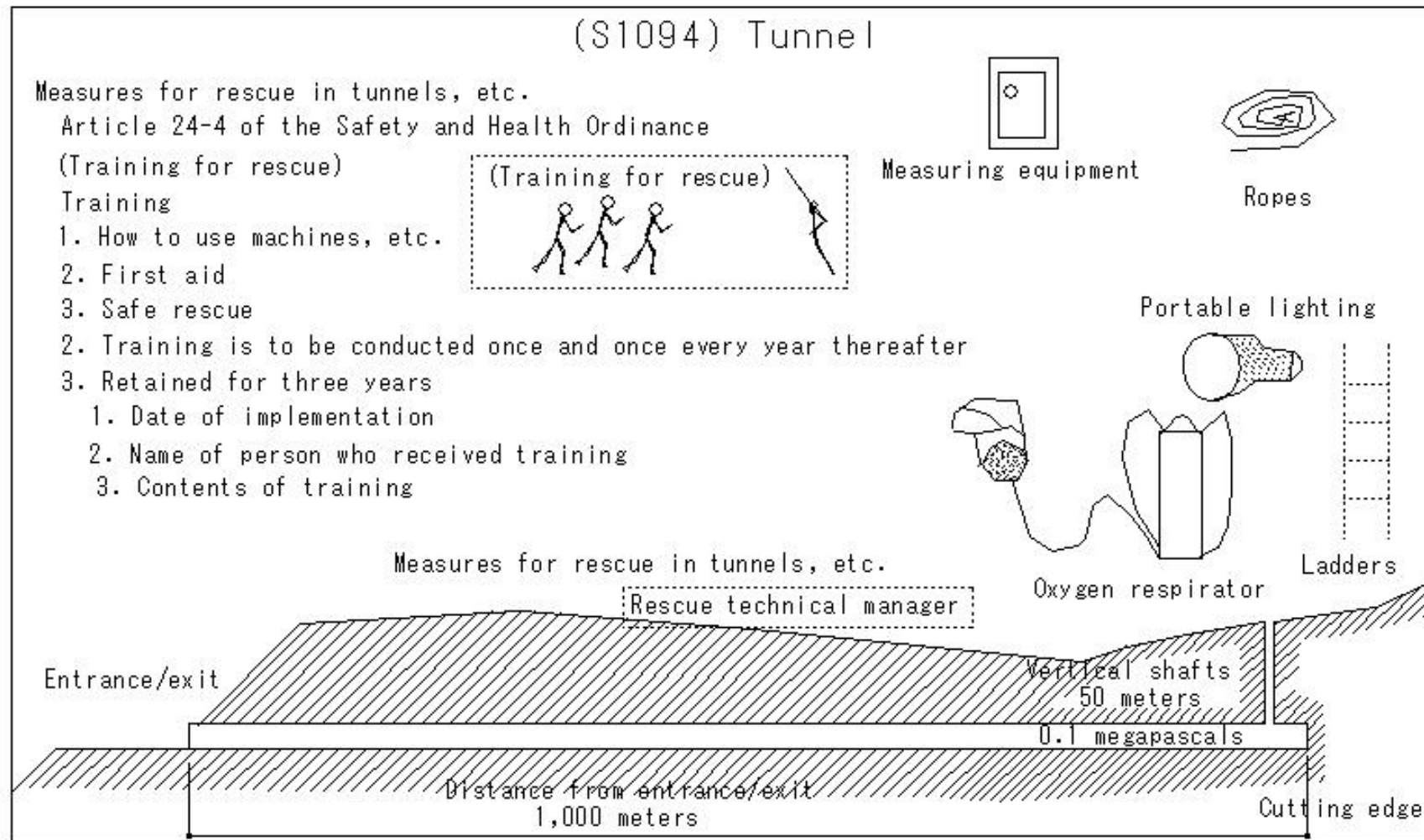
Vertical shafts
50 meters

0.1 megapascals

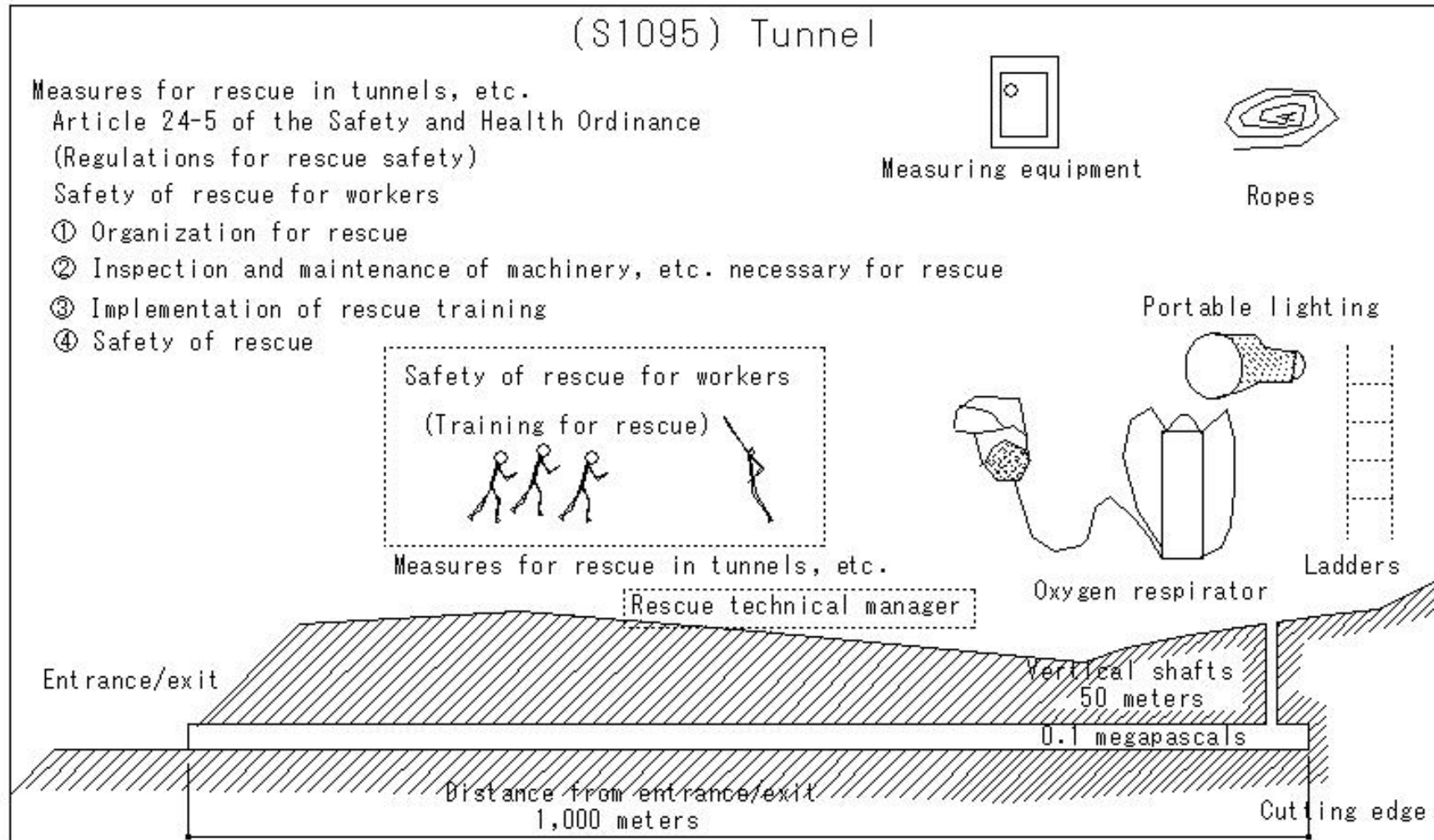
Distance from entrance/exit
1,000 meters

Cutting edge

(S1094) Tunnel



(S1095) Tunnel



(S1096) Tunnel

(S1096) Tunnel

Measures for rescue in tunnels, etc.

Article 24-6 of the Safety and Health Regulations

(Confirmation of personnel)

① Tunnel work, etc.

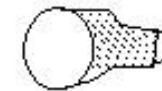
② Constant confirmation of the number and names of workers

Measuring equipment



Ropes

Portable lighting



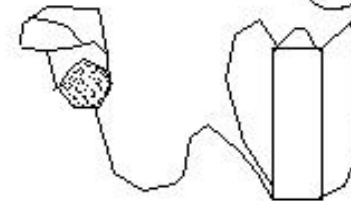
Safety of rescue for workers

(Training for rescue)

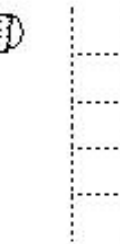


Measures for rescue in tunnels, etc.

Rescue technical manager



Oxygen respirator



Ladders



Entrance/exit

Distance from entrance/exit
1,000 meters

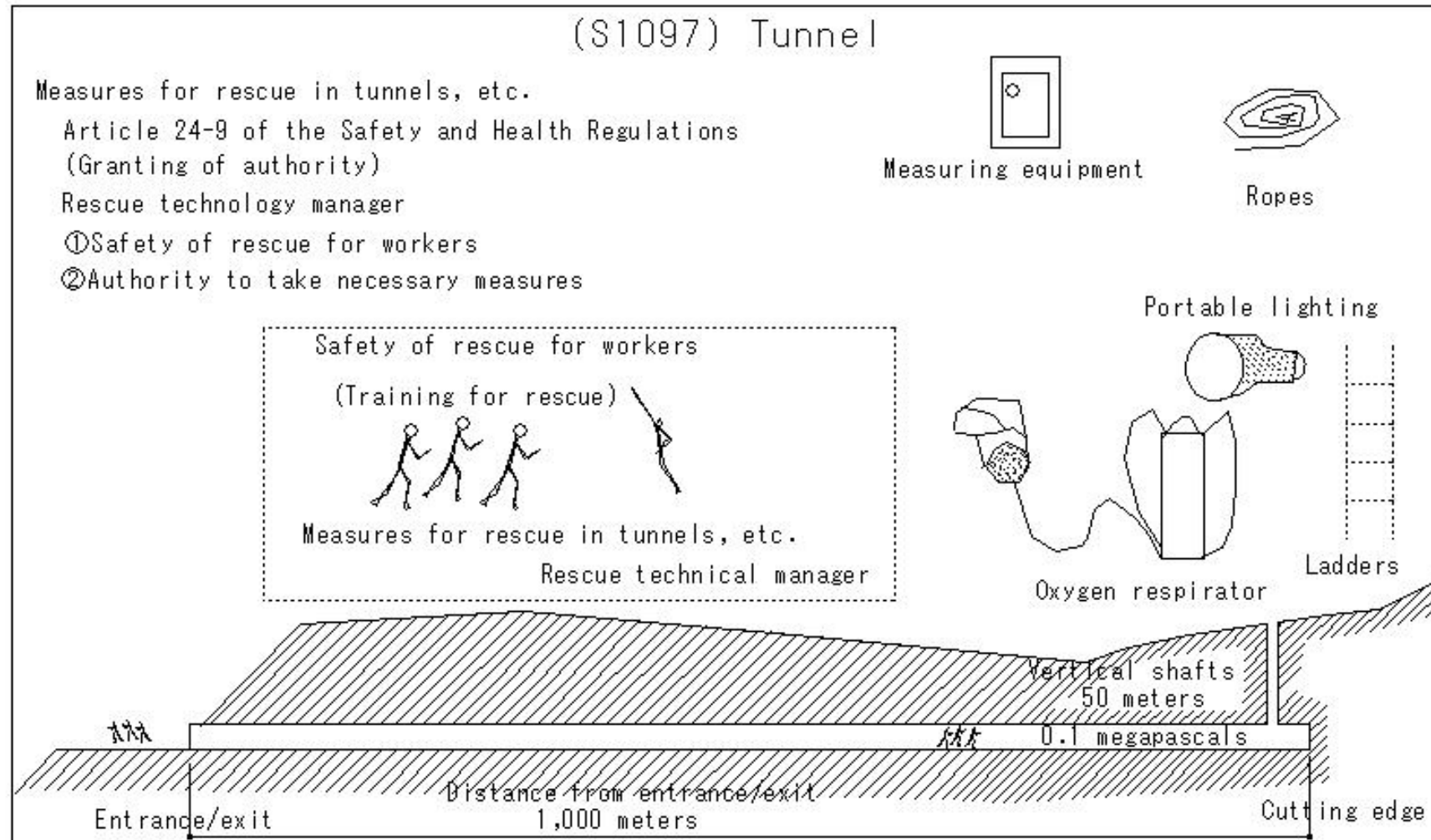


Vertical shafts
50 meters

0.1 megapascals

Cutting edge

(S1097) Tunnel



(S1098) Tunnel

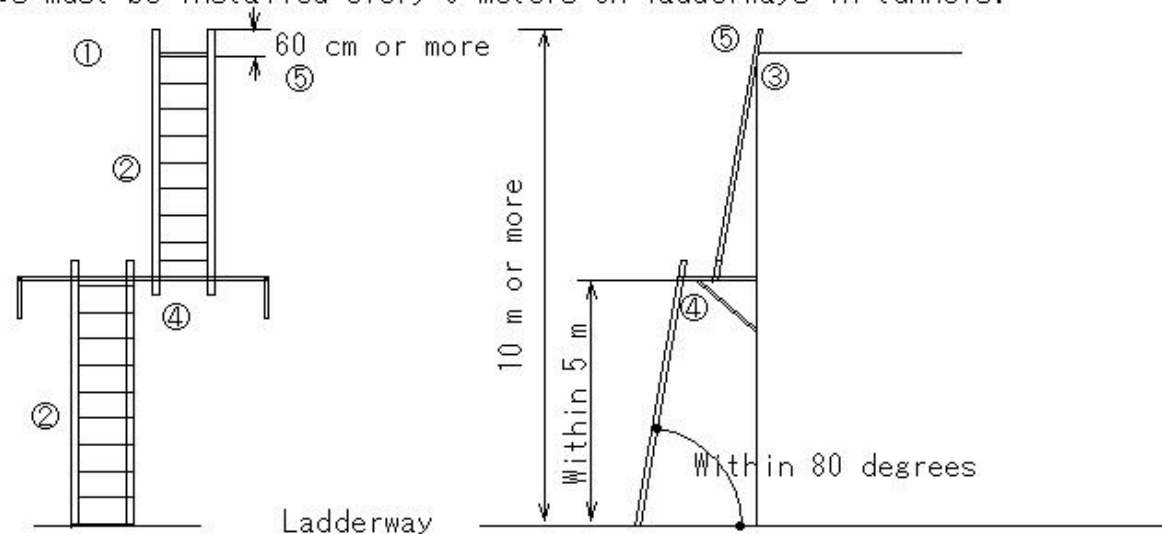
(S1098) Tunnel

Management of tunnel-specific passages and working environment

Article 556 of the Safety and Health Regulations

(Ladderway)

- ① The structure must be sturdy.
- ② Steps must be installed at equal intervals.
- ③ An appropriate distance must be maintained between the steps and the wall.
- ④ Measures must be taken to prevent the ladder from shifting.
- ⑤ The top of the ladder must protrude at least 60 cm above the floor.
- ⑥ Steps must be installed every 5 meters on ladderways in tunnels.



(S1099) Tunnel

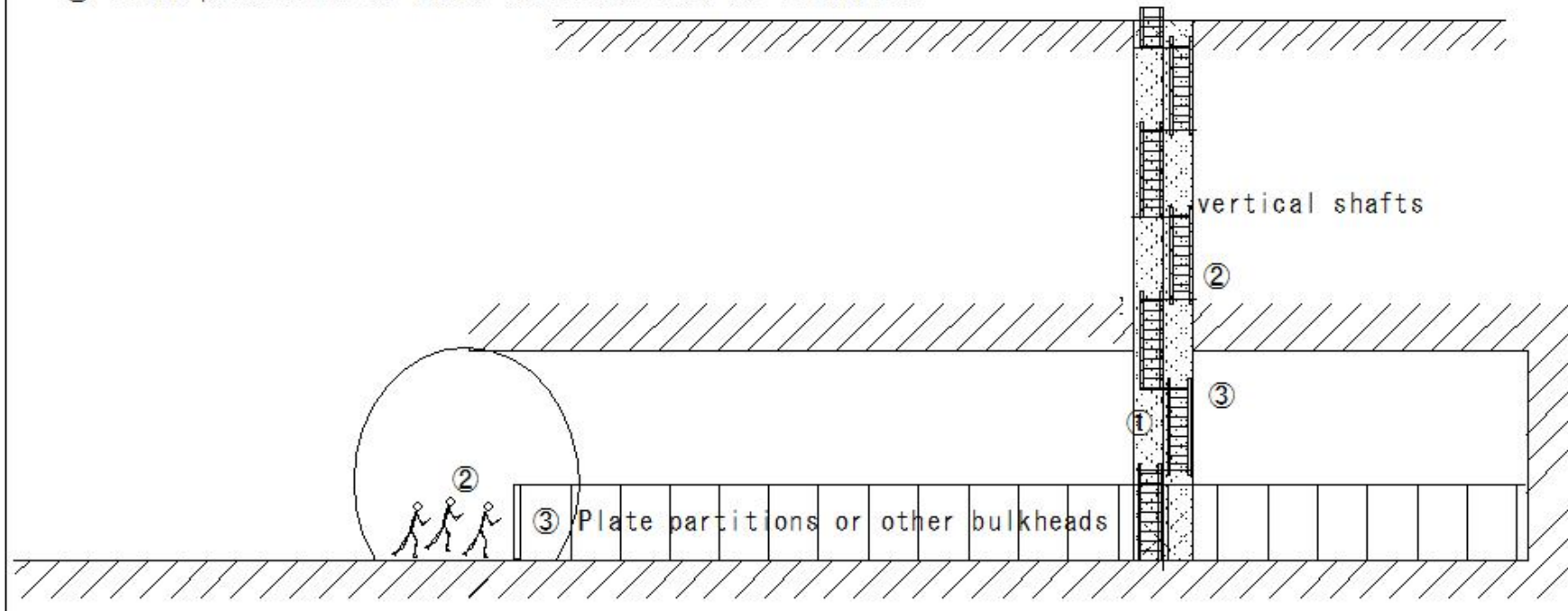
(S1099) Tunnel

Management of tunnel-specific passages and working environment

Safety and Health Regulations Article 557

(Passages, etc. installed inside tunnels)

- ① Passages or ladders installed inside tunnels
- ② Places where there is a risk of contact between hoisting equipment and workers
- ③ Plate partitions or other bulkheads must be installed.



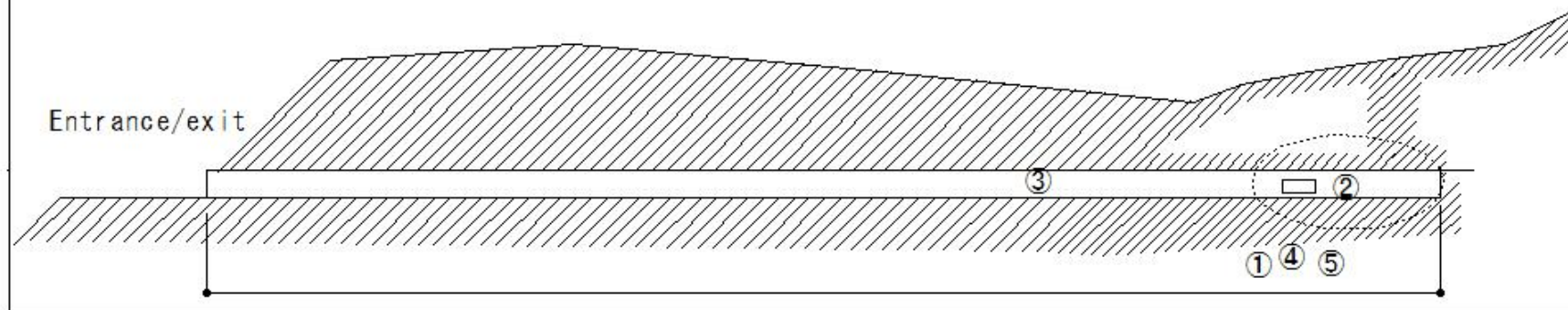
(S1100) Tunnel

(S1100) Tunnel

Management of tunnel-specific passages and working environments

Article 578 of the Safety and Health Regulations

- ① In places where natural ventilation is insufficient
- ② Do not use machines with internal combustion engines
 - Article 578 of the Industrial Safety and Health Regulations
(prohibition of use of internal combustion engines)
- ③ Inside tunnels, wells, caisson hulls, tanks or holds
- ④ In places where natural ventilation is insufficient
- ⑤ Do not use machines with internal combustion engines



(S1101) Tunnel

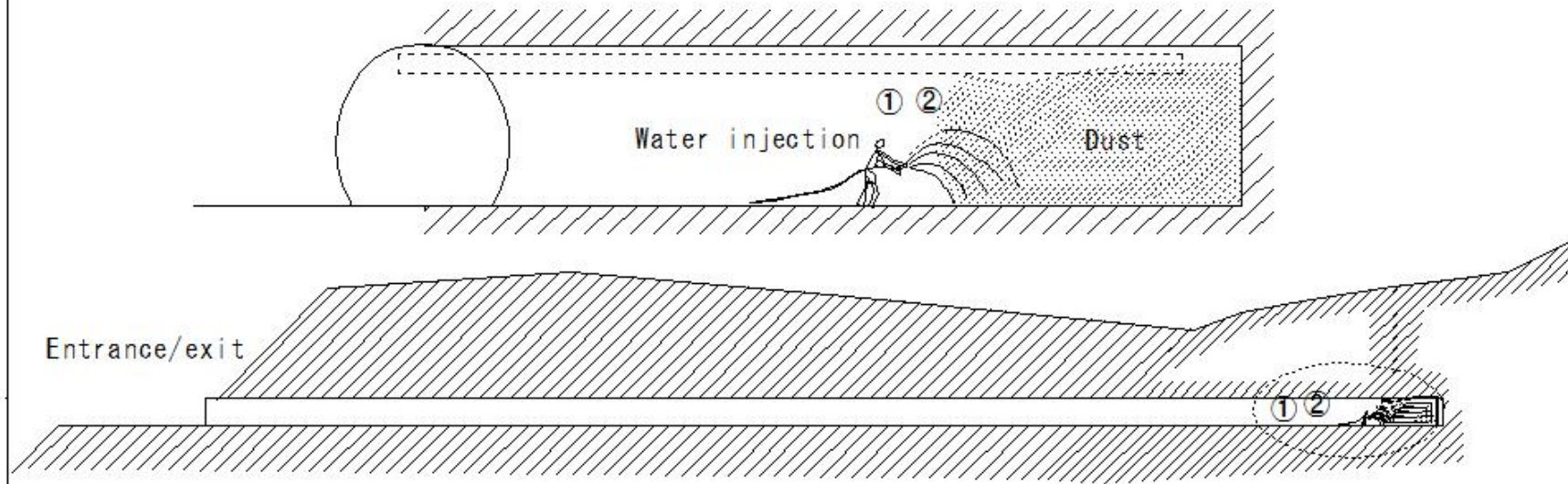
(S1101) Tunnel

Management of tunnel-specific passages and working environments

Article 582 of the Safety and Health Regulations

(Prevention of dust dispersion)

- ① Outdoor or underground work areas where dust is significantly dispersed
- ② Water injection and other measures to prevent dust dispersion



(S1102) Tunnel

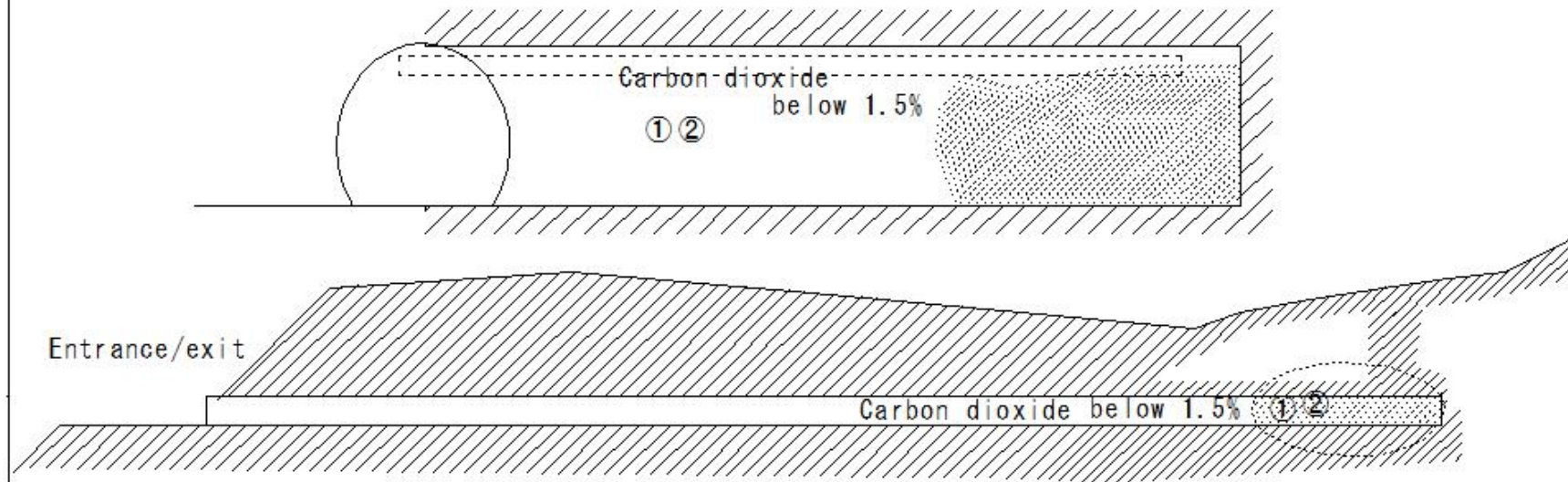
(S1102) Tunnel

Management of tunnel-specific passages and working environments

Safety and Health Regulations Article 583

(Standards for carbon dioxide concentration in tunnels)

- ① In tunnel work areas
- ② Carbon dioxide concentration must be below 1.5%



(S1103) Tunnel

(S1103) Tunnel

Management of tunnel-specific passages and working environments

Article 592 of the Safety and Health Regulations

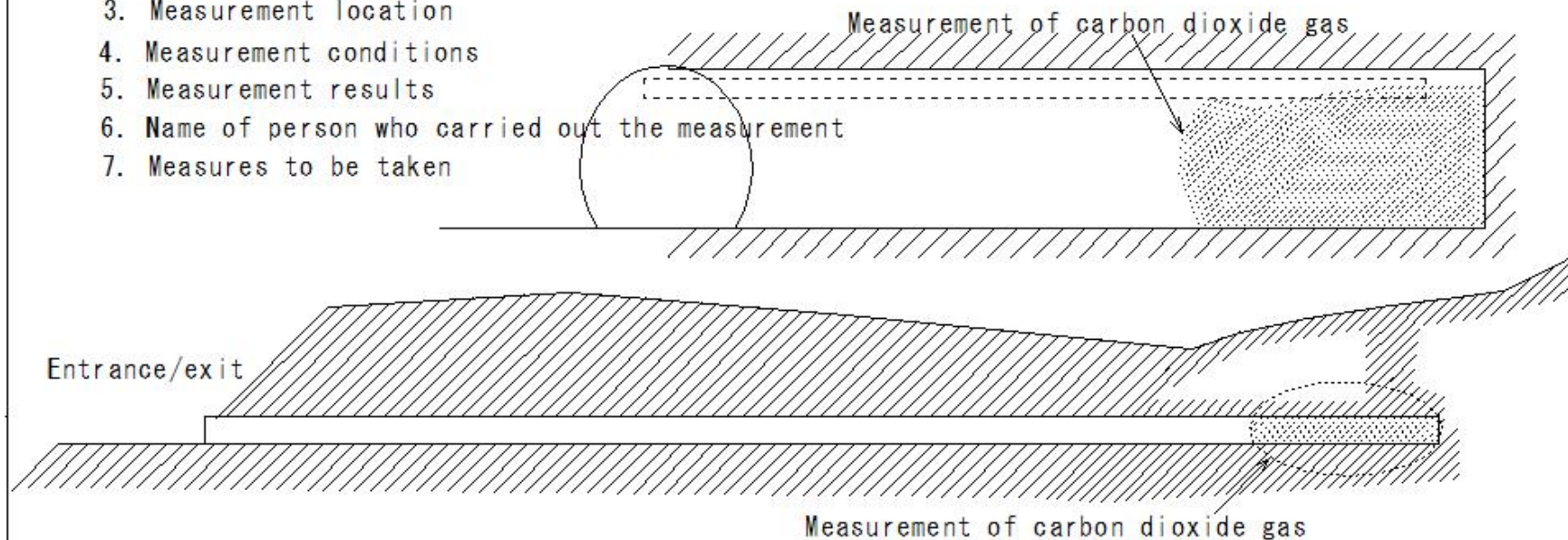
Measurement of carbon dioxide gas concentration in tunnels)

① Measure carbon dioxide gas concentration regularly once a month

② Measurement record - keep for three years

Carbon dioxide

1. Measurement date and time
2. Measurement method
3. Measurement location
4. Measurement conditions
5. Measurement results
6. Name of person who carried out the measurement
7. Measures to be taken



(S1104) Tunnel

(S1104) Tunnel

Management of tunnel-specific passages and working environments

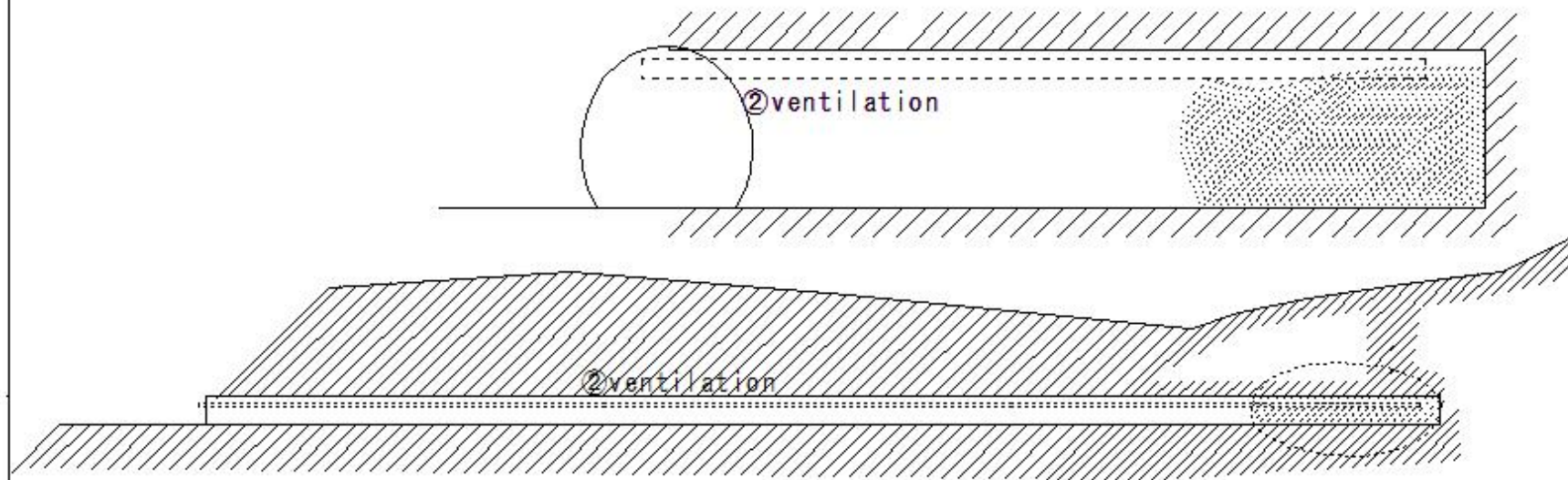
Safety and Health Regulations Article 602

(Ventilation equipment in tunnels)

① Work area in tunnels

② Install ventilation equipment

(Ventilation equipment in tunnels)



(S1105) Tunnel

(S1105) Tunnel

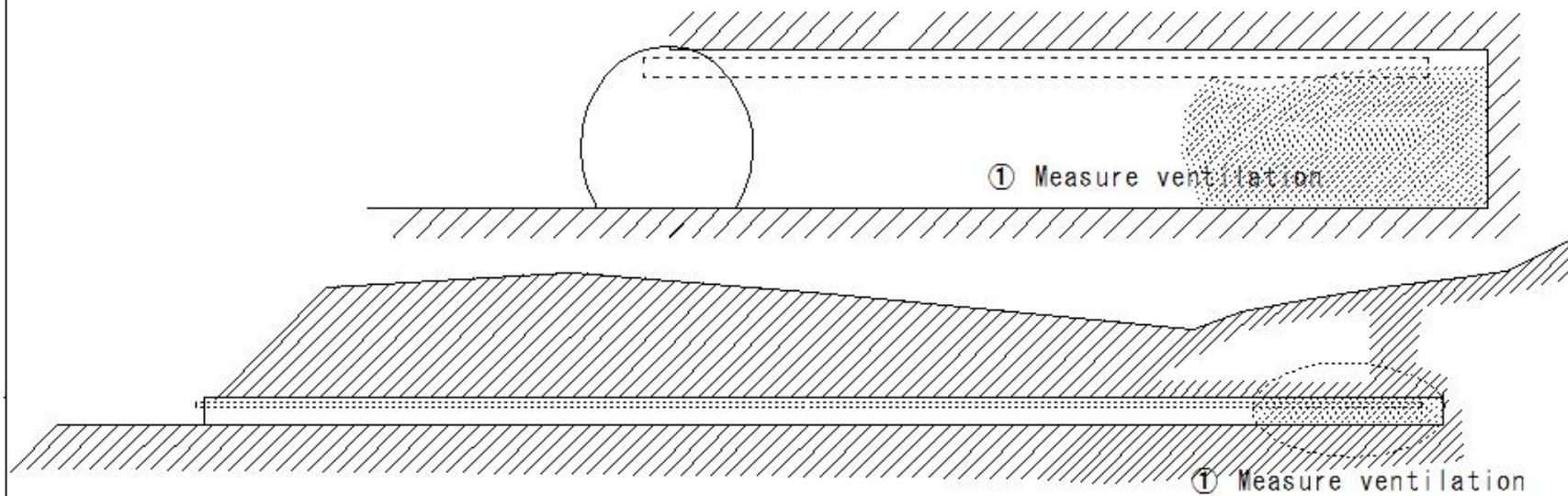
Management of tunnel-specific passages and working environments

Safety and Health Regulations Article 603

(Measurement of ventilation in tunnels)

- ① Measure ventilation once every two weeks
- ② Measure ventilation on a regular basis

(Measurement of ventilation in tunnels)



(S1106) Tunnel

(S1106) Tunnel

Management of tunnel-specific passages and working environments

Safety and Health Regulations Article 611 • 612

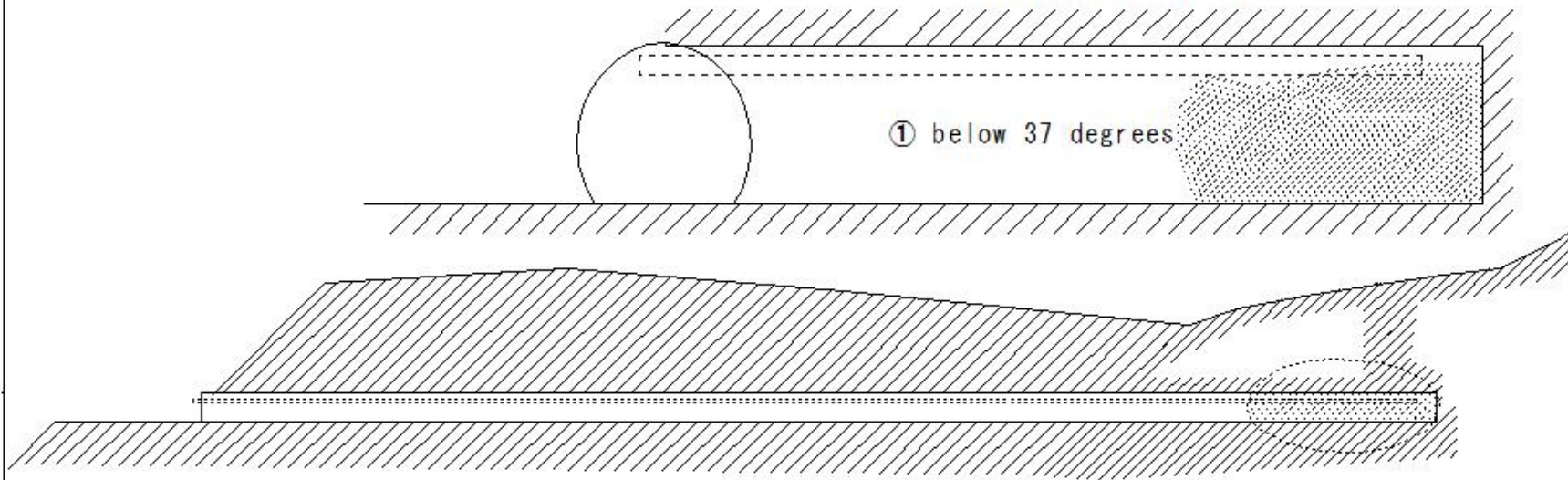
Temperature inside the tunnel

- ① Maintain the temperature inside the tunnel below 37 degrees

Temperature inside the tunnel

- ① below 37 degrees

- ① below 37 degrees



(S1107) Tunnel

(S1107) Tunnel

Management of tunnel-specific passages and working environments

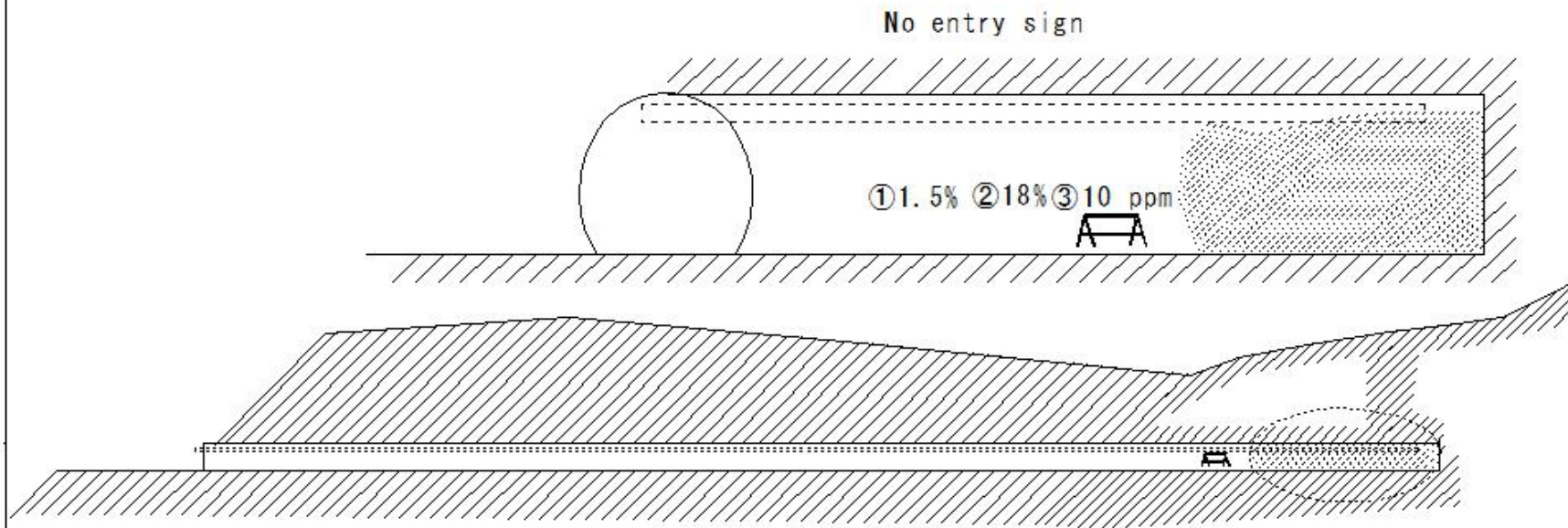
Safety and Health Regulations Article 585

No entry sign

① Carbon dioxide concentration exceeds 1.5%

② Oxygen concentration is less than 18%

③ Hydrogen sulfide concentration exceeds 10 parts per million



(S1108) Quarrying work

(S1108) Quarrying work

Management of Quarrying work

Article 399 of the Safety and Health Regulations
(Investigation and recording)

○ Quarrying work

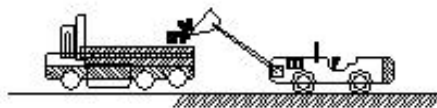
- ① Excavation work for the purpose of extracting rocks
- ② Breaking rocks into smaller pieces at the quarry
- ③ Processing and transportation work

○ Investigation and recording

- ④ Prevention of natural ground collapses, falls of excavation machinery, etc.
- ⑤ Investigate the shape of the natural ground, geology and state of the strata, and record the results

○ Quarrying work

○ Investigation and recording



Excavator and dump truck

(S1109) Quarrying work

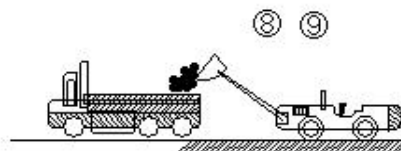
(S1109) Quarrying work

Management of Quarrying work

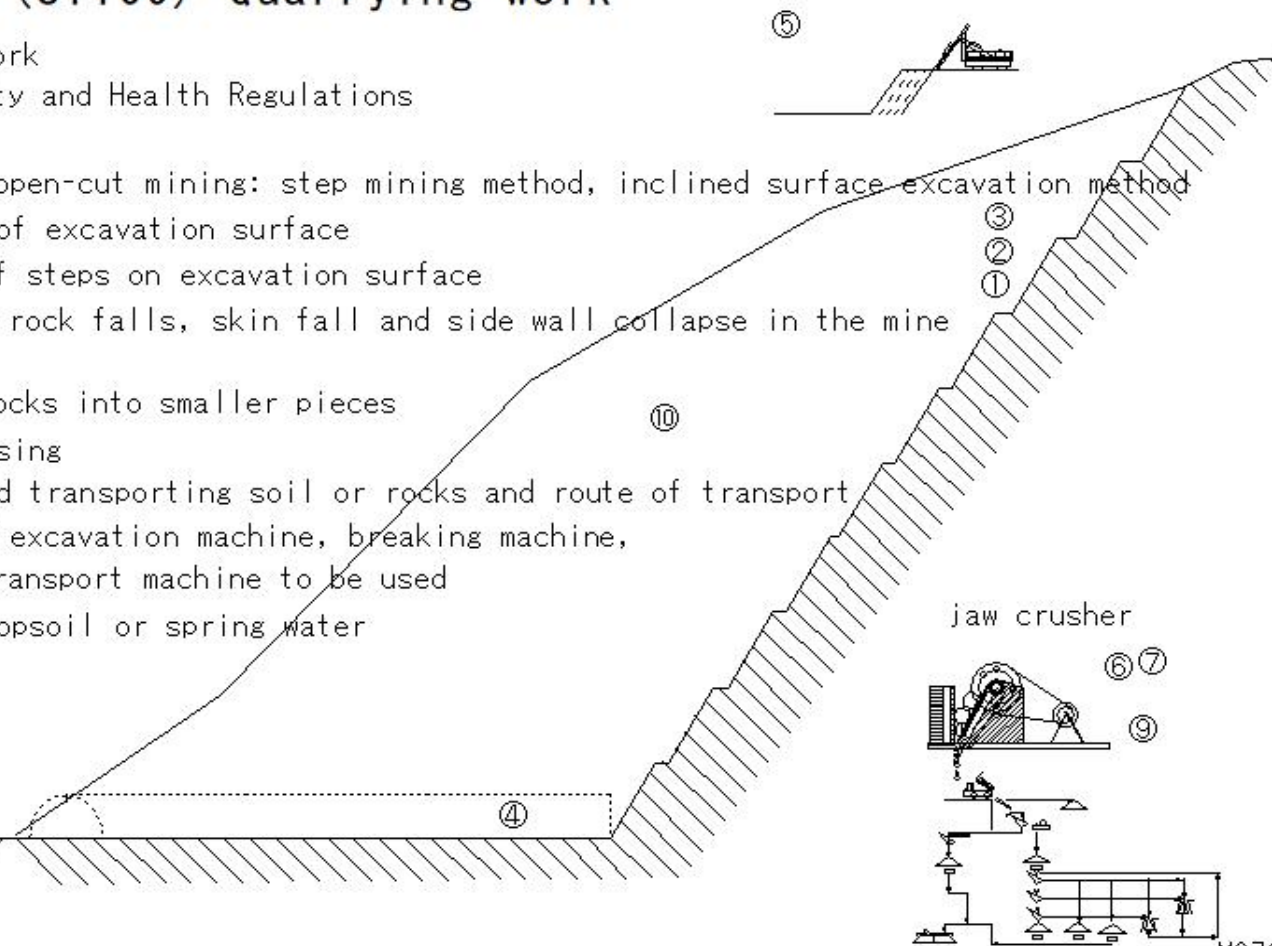
Article 400 of the Safety and Health Regulations

(Quarrying work plan)

- ① Underground mining, open-cut mining: step mining method, inclined surface excavation method
- ② Height and gradient of excavation surface
- ③ Position and depth of steps on excavation surface
- ④ Method of preventing rock falls, skin fall and side wall collapse in the mine
- ⑤ Blasting method
- ⑥ Method of breaking rocks into smaller pieces
- ⑦ Place of rock processing
- ⑧ Method of loading and transporting soil or rocks and route of transport
- ⑨ Type and capacity of excavation machine, breaking machine, loading machine or transport machine to be used
- ⑩ Method of treating topsoil or spring water



Excavator and dump truck



(S1110) Quarrying work

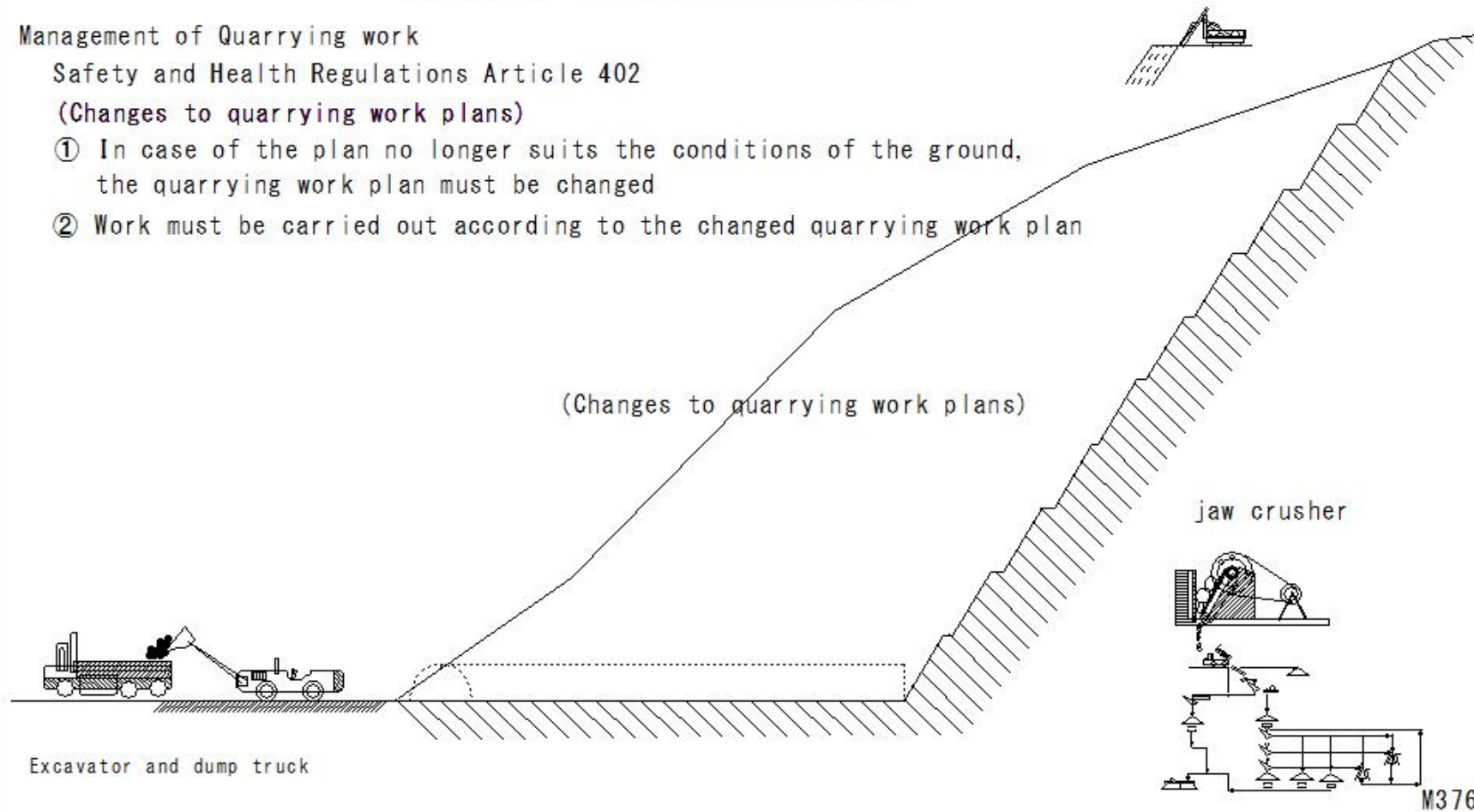
(S1110) Quarrying work

Management of Quarrying work

Safety and Health Regulations Article 402

(Changes to quarrying work plans)

- ① In case of the plan no longer suits the conditions of the ground,
the quarrying work plan must be changed
- ② Work must be carried out according to the changed quarrying work plan



(S1111) Quarrying work

(S1111) Quarrying work

Management of Quarrying work

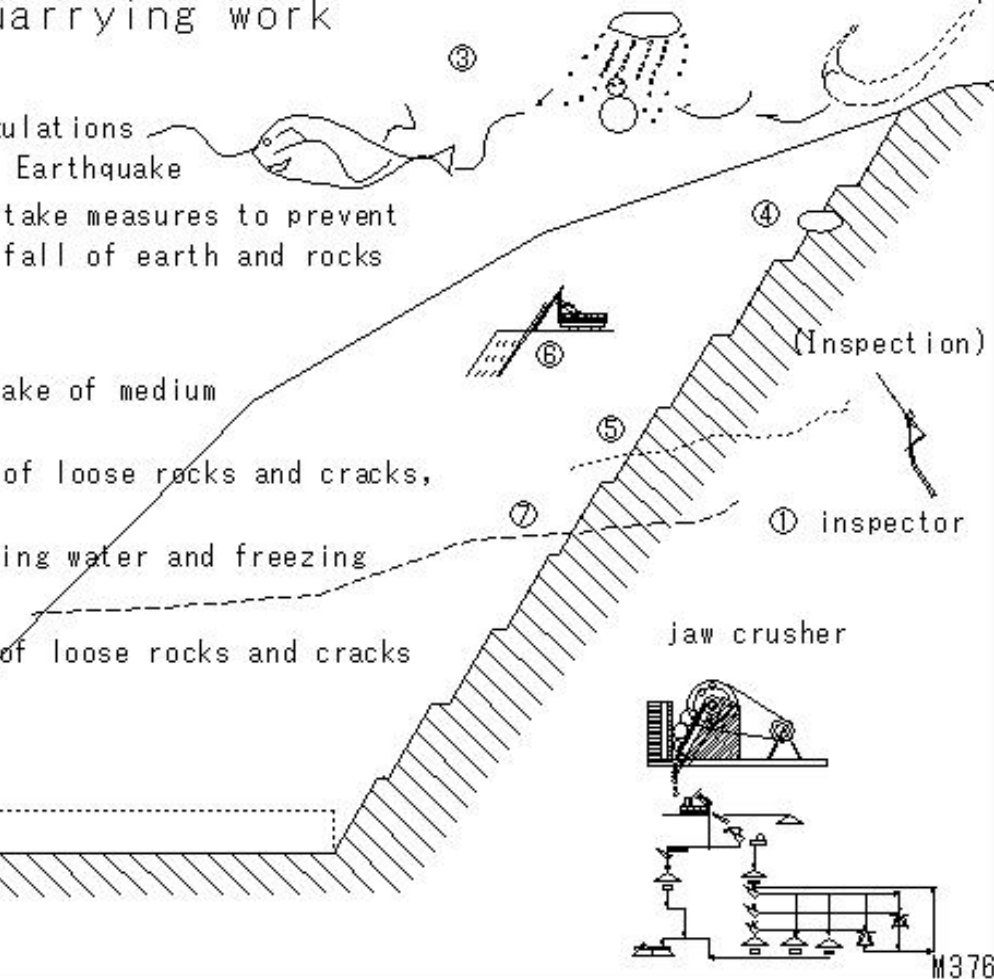
Article 401 of the Safety and Health Regulations
(Inspection) Earthquake

In case of carrying out quarrying work, take measures to prevent the collapse of the ground or the fall of earth and rocks

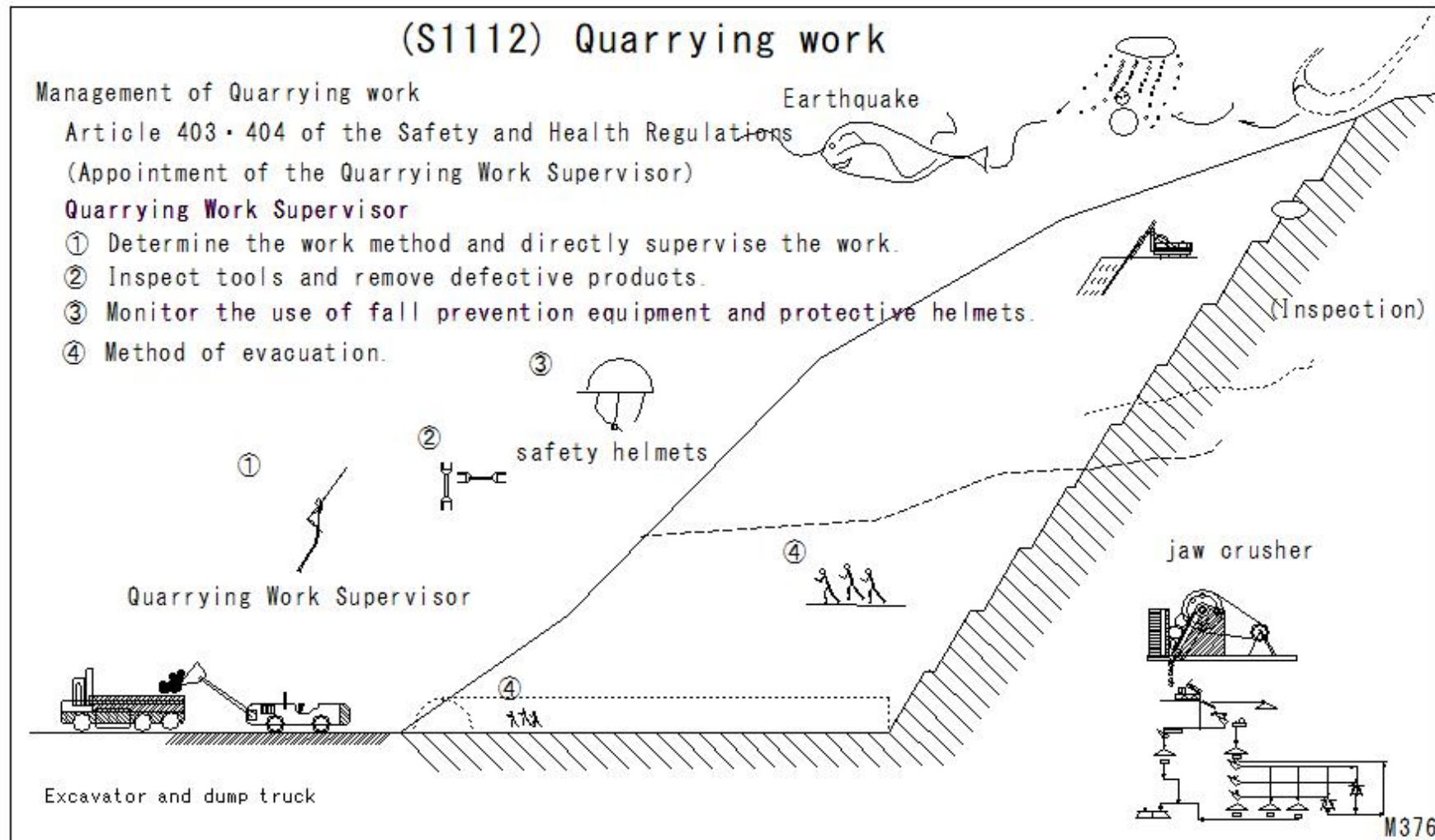
- ① Designate an inspector
- ② Before starting work
- ③ After heavy rain and after an earthquake of medium or greater magnitude
- ④ Check for the presence and condition of loose rocks and cracks, as well as water content
- ⑤ Check for changes in the state of spring water and freezing
- ⑥ After blasting
- ⑦ Check for the presence and condition of loose rocks and cracks in the surrounding area



Excavator and dump truck



(S1112) Quarrying work



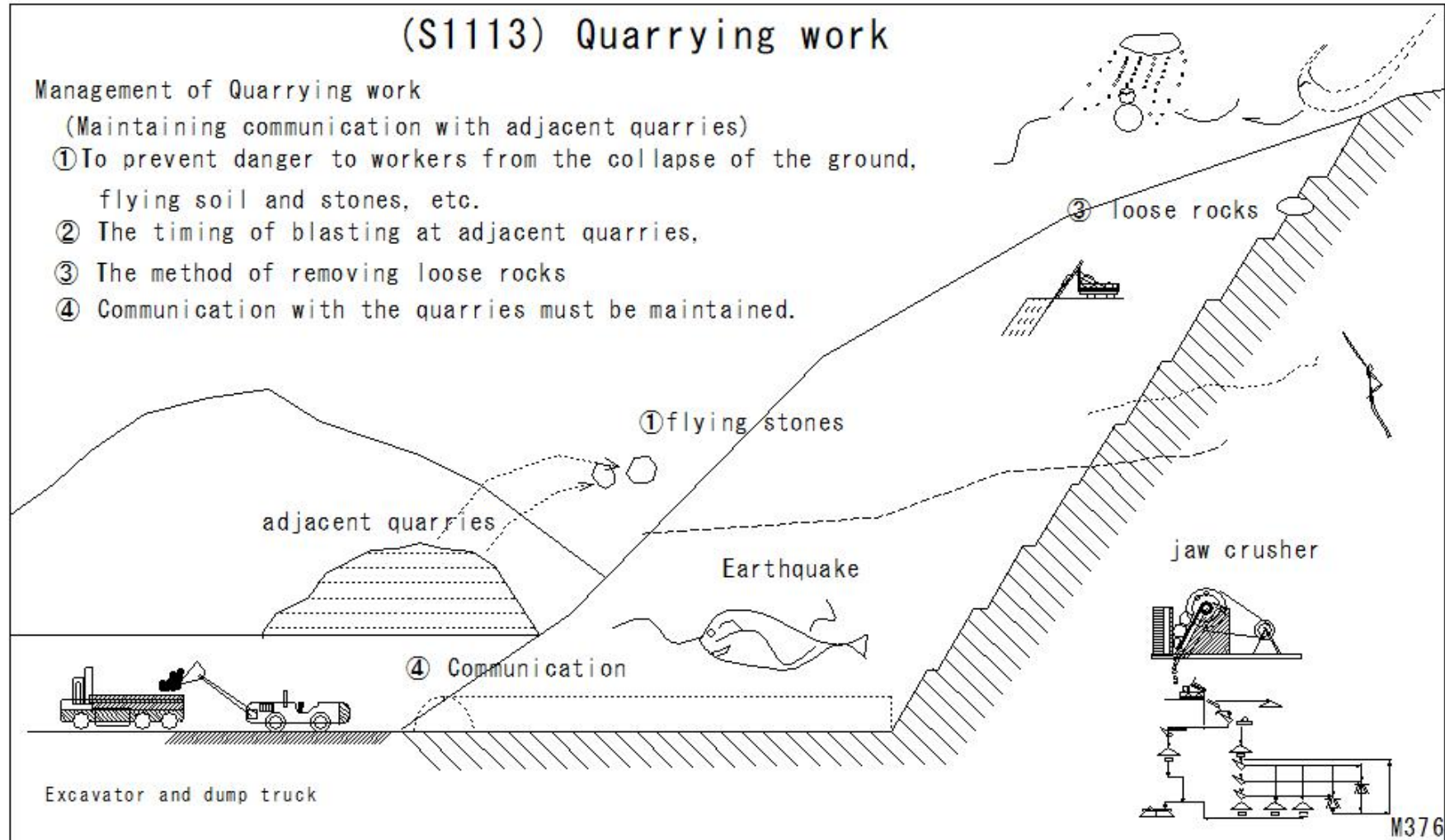
(S1113) Quarrying work

(S1113) Quarrying work

Management of Quarrying work

(Maintaining communication with adjacent quarries)

- ① To prevent danger to workers from the collapse of the ground, flying soil and stones, etc.
- ② The timing of blasting at adjacent quarries,
- ③ The method of removing loose rocks
- ④ Communication with the quarries must be maintained.



(S1114) Quarrying work

(S1114) Quarrying work

Management of Quarrying work

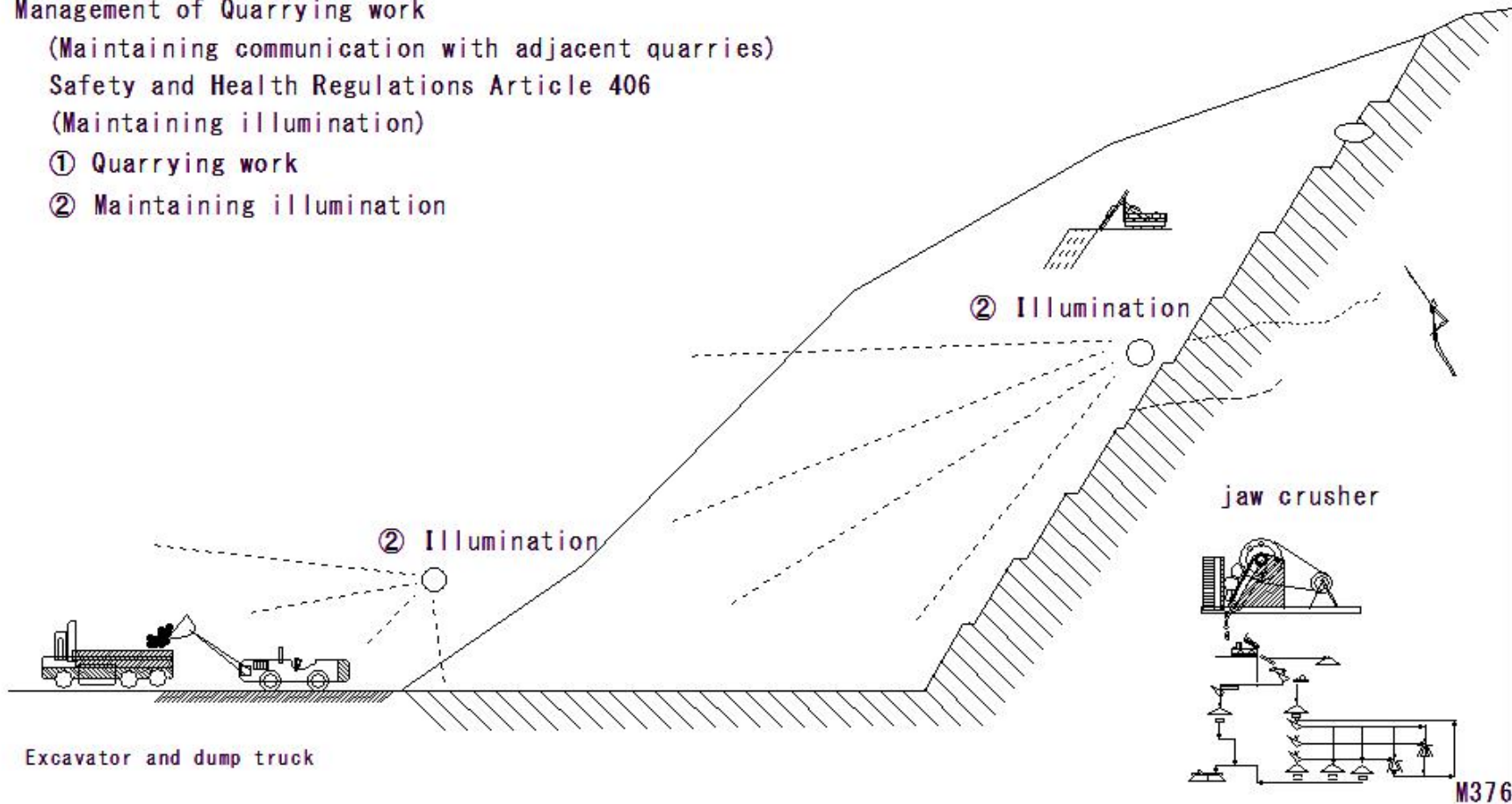
(Maintaining communication with adjacent quarries)

Safety and Health Regulations Article 406

(Maintaining illumination)

① Quarrying work

② Maintaining illumination



(S1115) Quarrying work

(S1115) Quarrying work

Management of crushing work

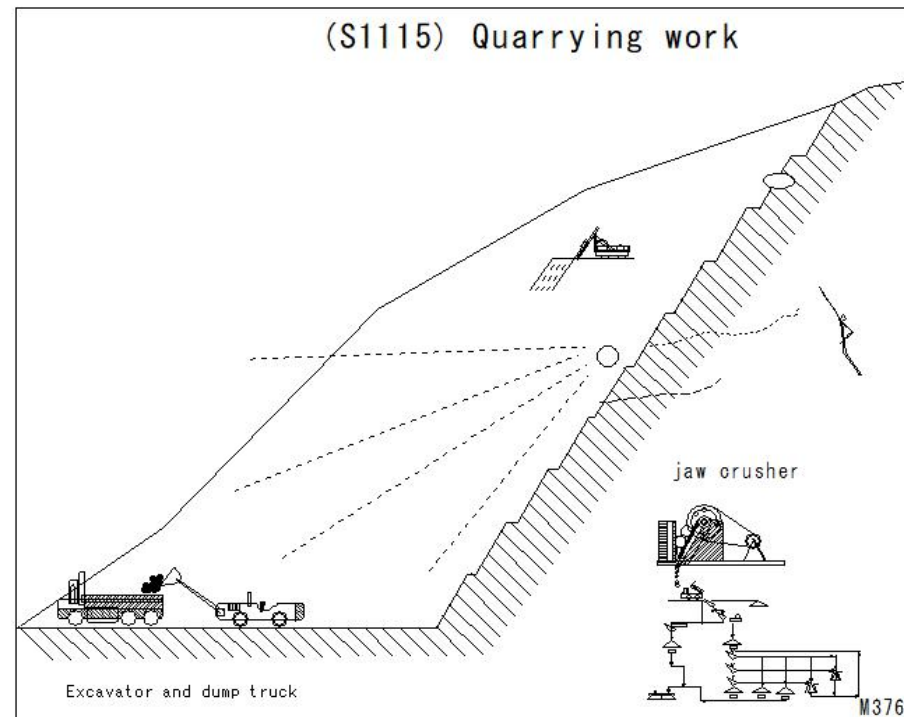
Safety and Health Regulations Article 407

(Standards for slope of excavation surface)

Excavation work for extracting rocks

Slope of excavation surface

Type of ground	Height of excavation surface (unit: meters)	Slope of excavation surface (unit: degrees)
Type of ground	Less than 20m	90°
	20m or more	75°
Ground consisting of bedrock without cracks that could cause collapse or fall	less than 5m	90°
	5m or more	60°
Ground consisting of bedrock other than the above	less than 2m	90°
	2m or more	45°



(S1116) Quarrying work

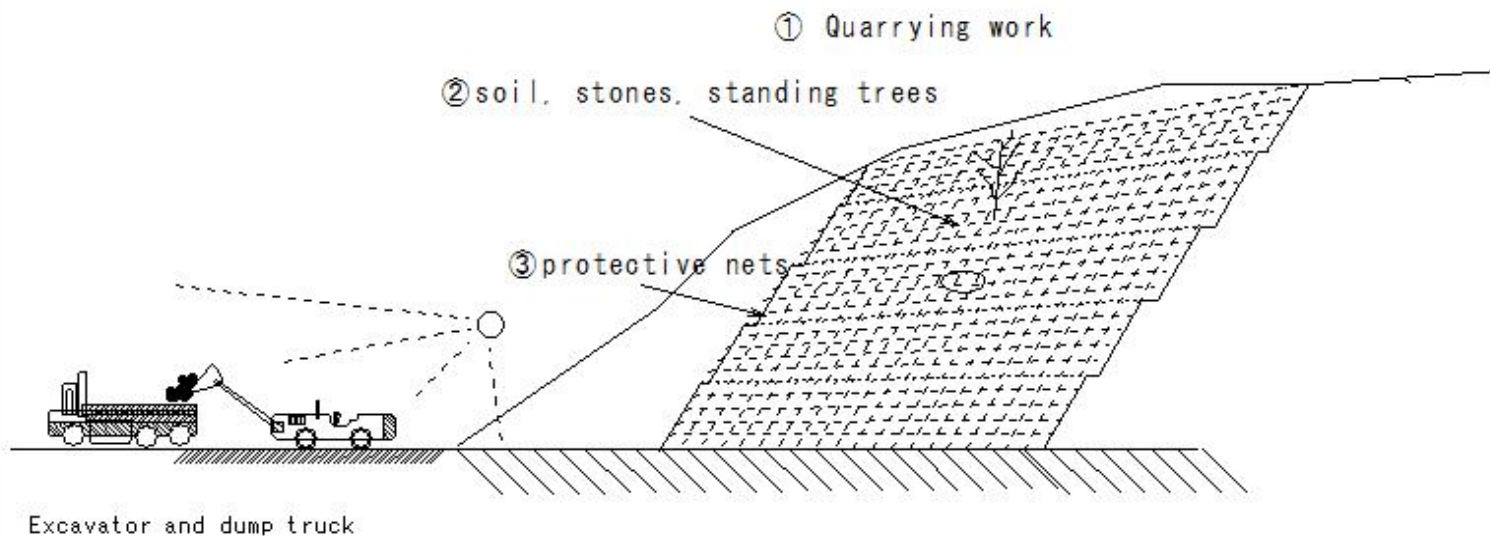
(S1116) Quarrying work

Management of crushing work

Article 408 of the Safety and Health Regulations

(Prevention of danger due to collapse, etc.)

- ① Quarrying work
- ② In case of there is soil, stones, standing trees, etc. that may cause danger due to collapse or falling, remove them in advance
- ③ Put up protective nets: Measures to prevent



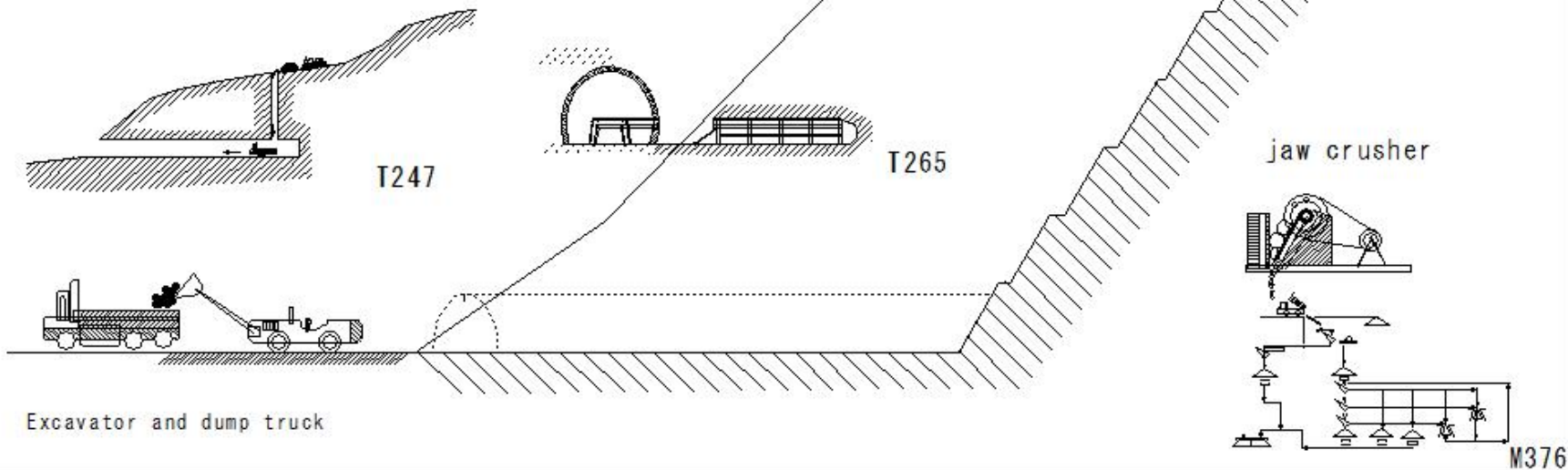
(S1117) Quarrying work

(S1117) Quarrying work

Management of Quarrying work

Article 409 of the Safety and Health Regulations
(Prevention of dangers due to falling rocks, etc.)

- ① Quarrying work in the mine
- ② In case of there is a risk of danger such as falling rocks or falling off the surface
- ③ Measures to prevent the danger are taken, such as setting up supports or remaining pillars and making the ceiling arch-shaped,



(S1118) Quarrying work

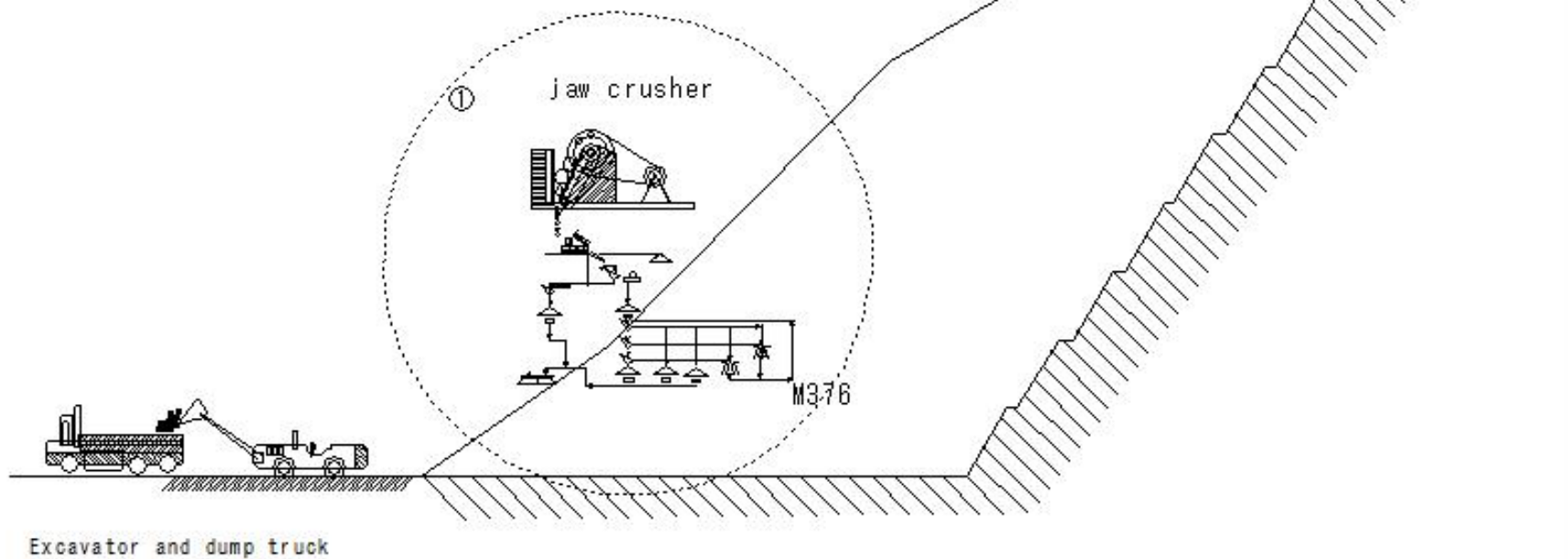
(S1118) Quarrying work

Management of Quarrying work

Article 410 of the Safety and Health Regulations

(Prohibition of work near excavation sites)

① Rock cutting or processing work must not be carried out near excavation sites.



(S1119) Quarrying work

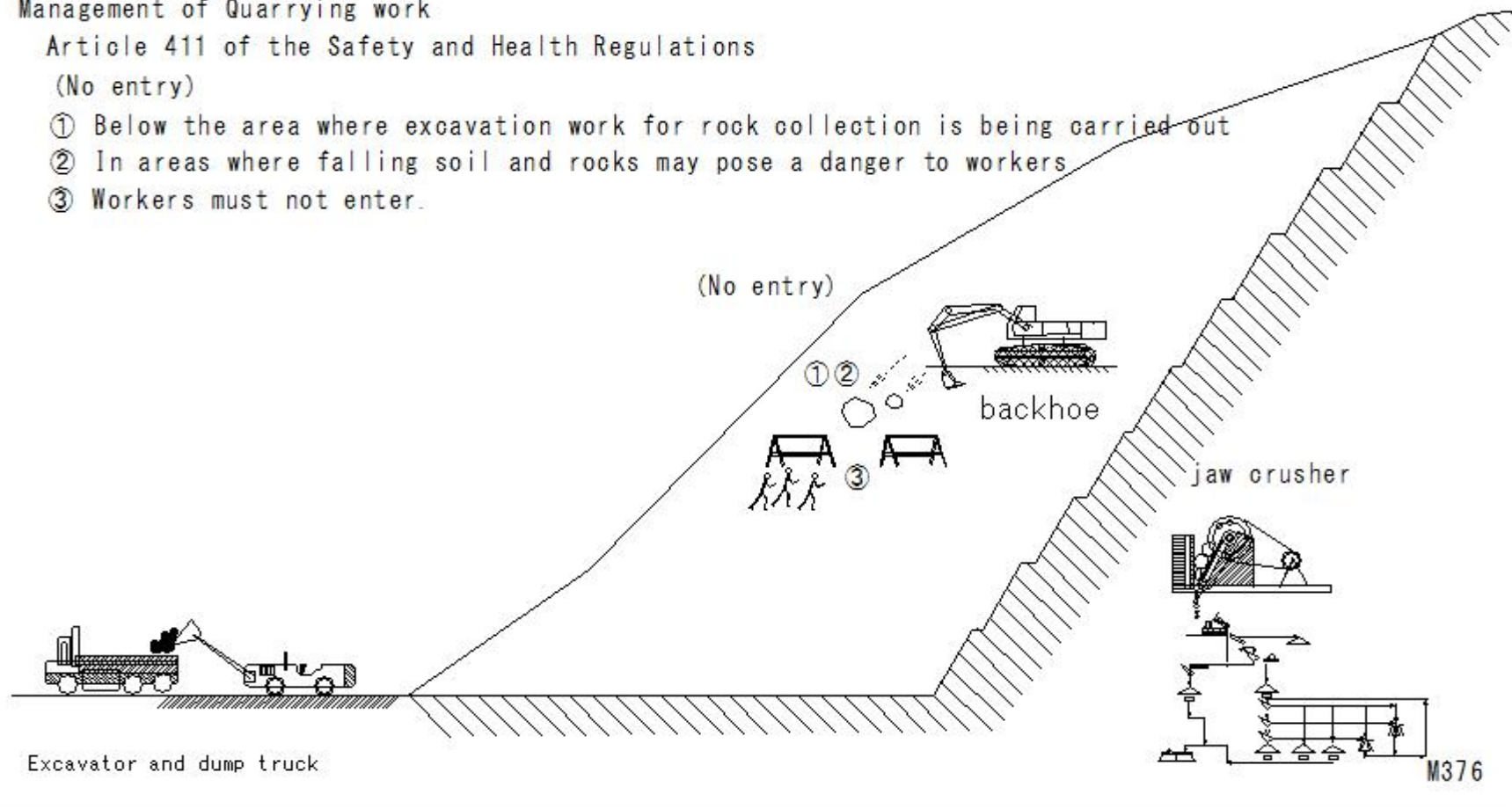
(S1119) Quarrying work

Management of Quarrying work

Article 411 of the Safety and Health Regulations

(No entry)

- ① Below the area where excavation work for rock collection is being carried out
- ② In areas where falling soil and rocks may pose a danger to workers
- ③ Workers must not enter.



(S1120) Quarrying work

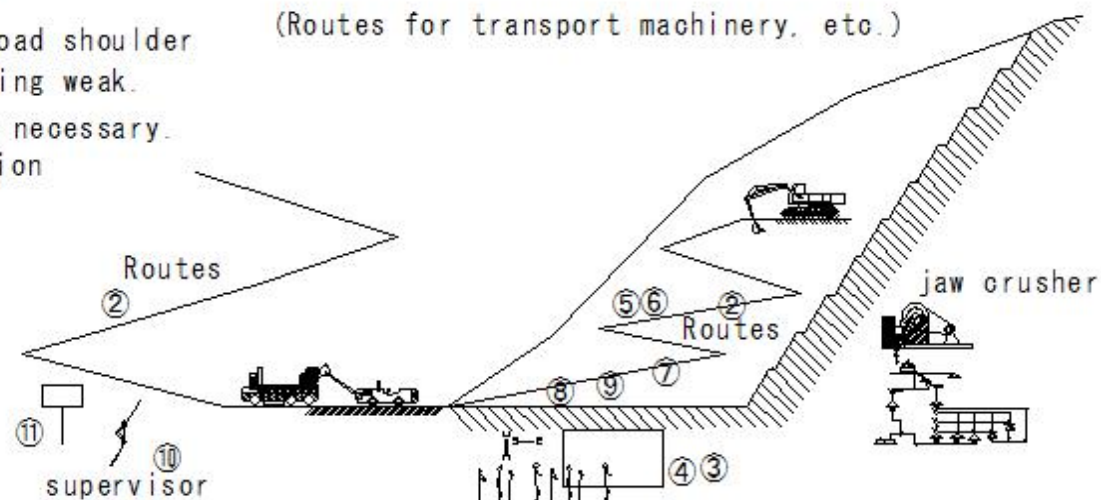
(S1120) Quarrying work

Management of Quarrying work

Article 413 of the Safety and Health Regulations

(Routes for transport machinery, etc.)

- ① Quarrying work
- ② Routes for transport machinery, etc. and small-cutting machinery
- ③ Determine how transport machinery, etc. and small-cutting machinery should enter and exit the loading and unloading area for soil and stones
- ④ This must be made known to the workers involved.
- The following measures must be taken for the route of operation.
- ⑤ Maintain the necessary width.
- ⑥ Prevent the collapse of the road shoulder
- ⑦ Prevent the ground from becoming weak.
- ⑧ Install signs or fences where necessary.
- Regarding the route of operation
- ⑨ Route repairs
- ⑩ Place a supervisor
- ⑪ Post notices during work



(S1121) Quarrying work

(S1121) Quarrying work

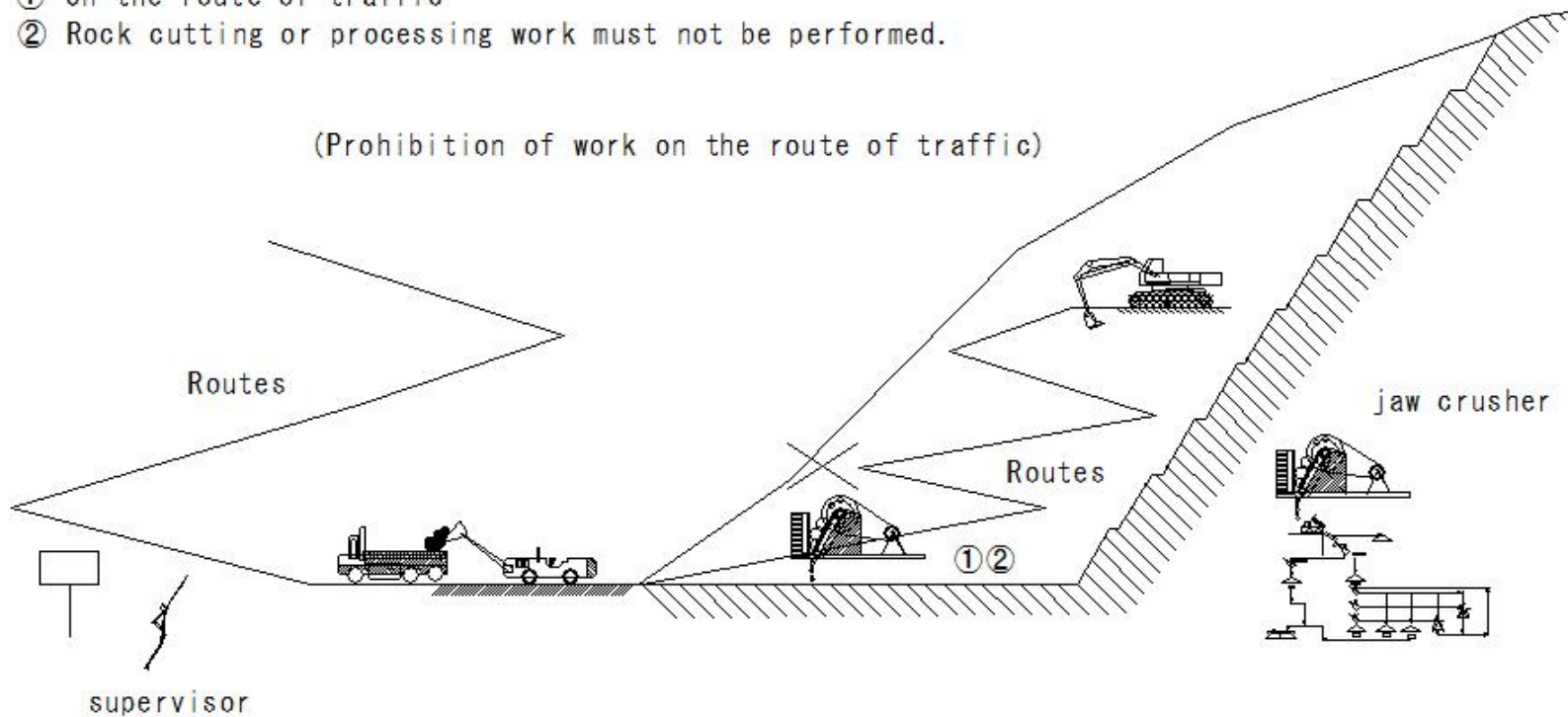
Management of Quarrying work

Article 414 of the Safety and Health Regulations

(Prohibition of work on the route of traffic)

- ① On the route of traffic
- ② Rock cutting or processing work must not be performed.

(Prohibition of work on the route of traffic)



(S1122) Quarrying work

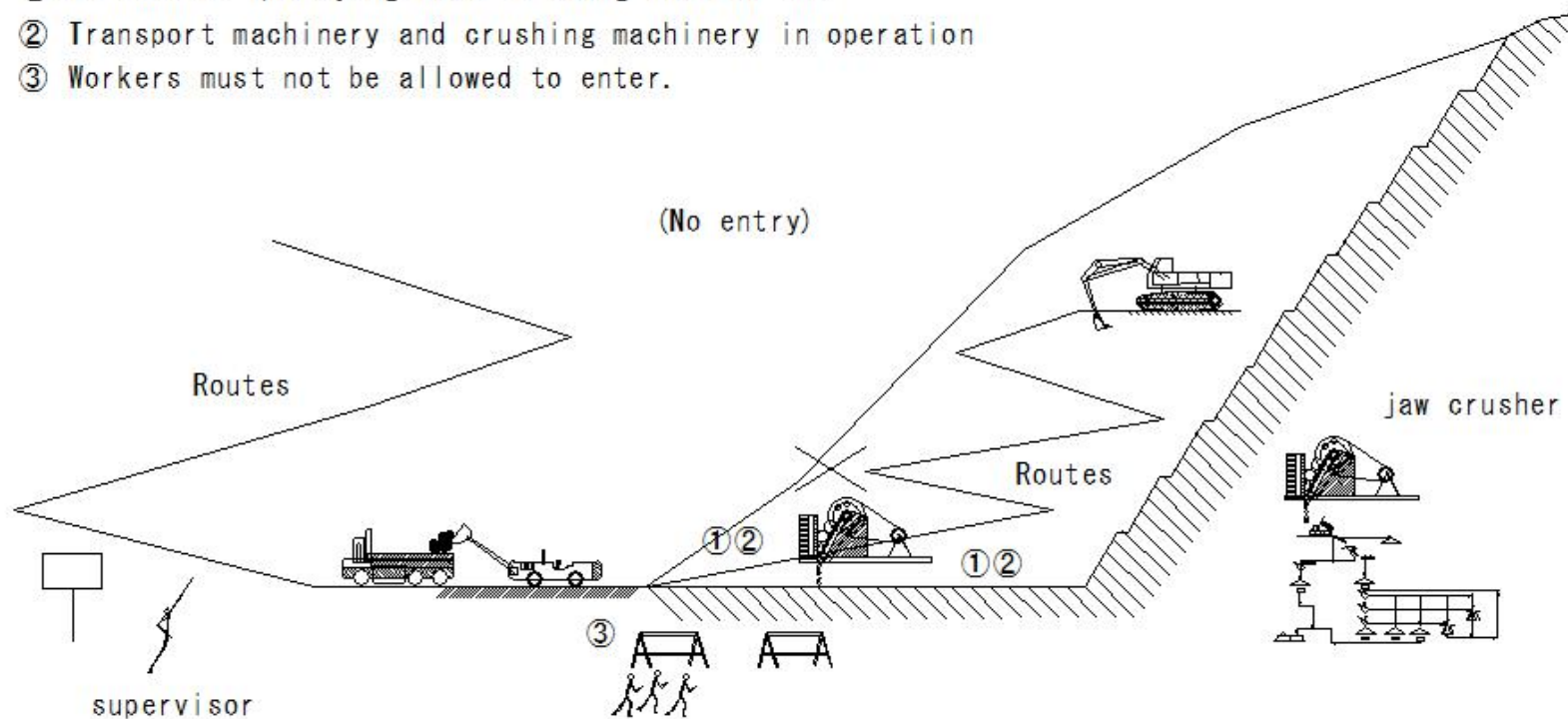
(S1122) Quarrying work

Management of Quarrying work

Article 415 of the Safety and Health Regulations

(No entry)

- ① In case of quarrying work is being carried out
- ② Transport machinery and crushing machinery in operation
- ③ Workers must not be allowed to enter.



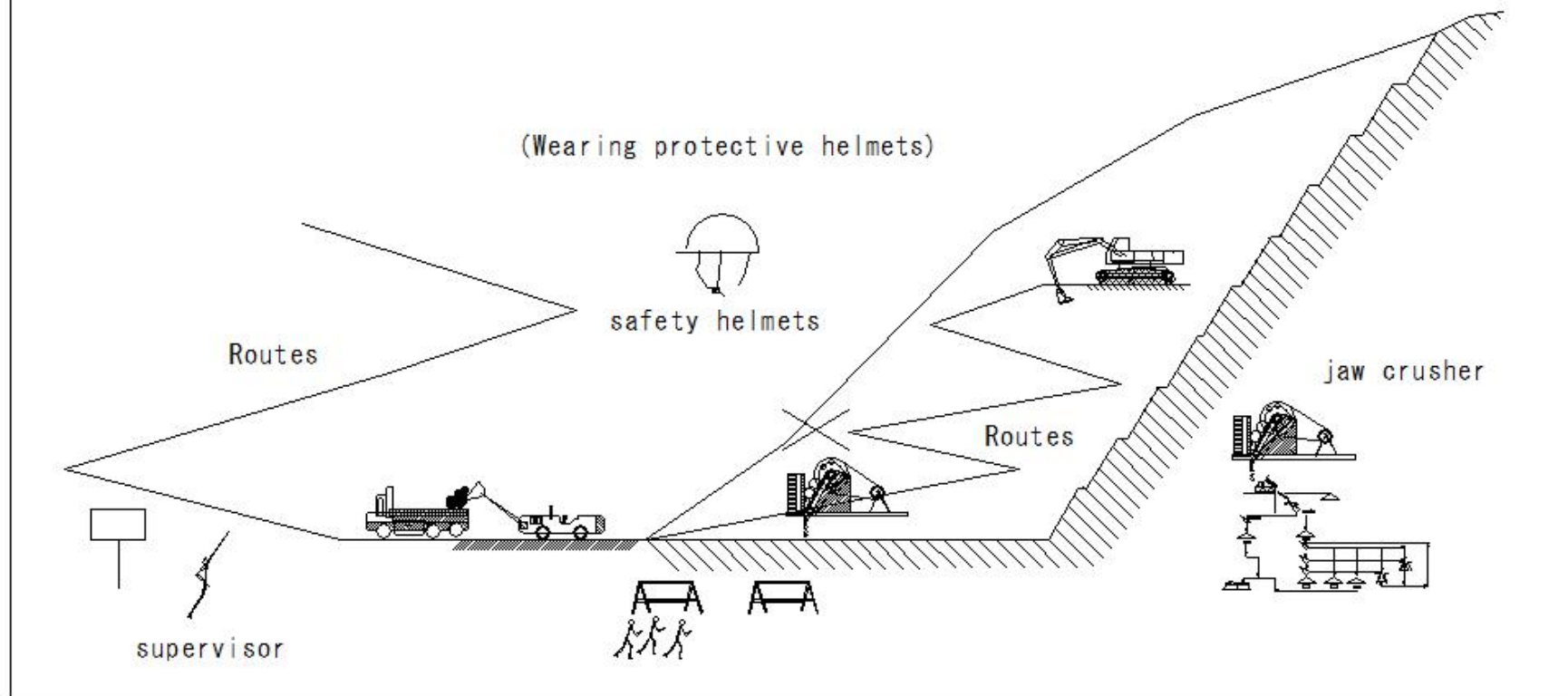
(S1123) Quarrying work

(S1123) Quarrying work

Management of Quarrying work

Article 412 of the Safety and Health Regulations

(Wearing protective helmets)



(S1124) Quarrying work

(S1124) Quarrying work

Management of Quarrying work

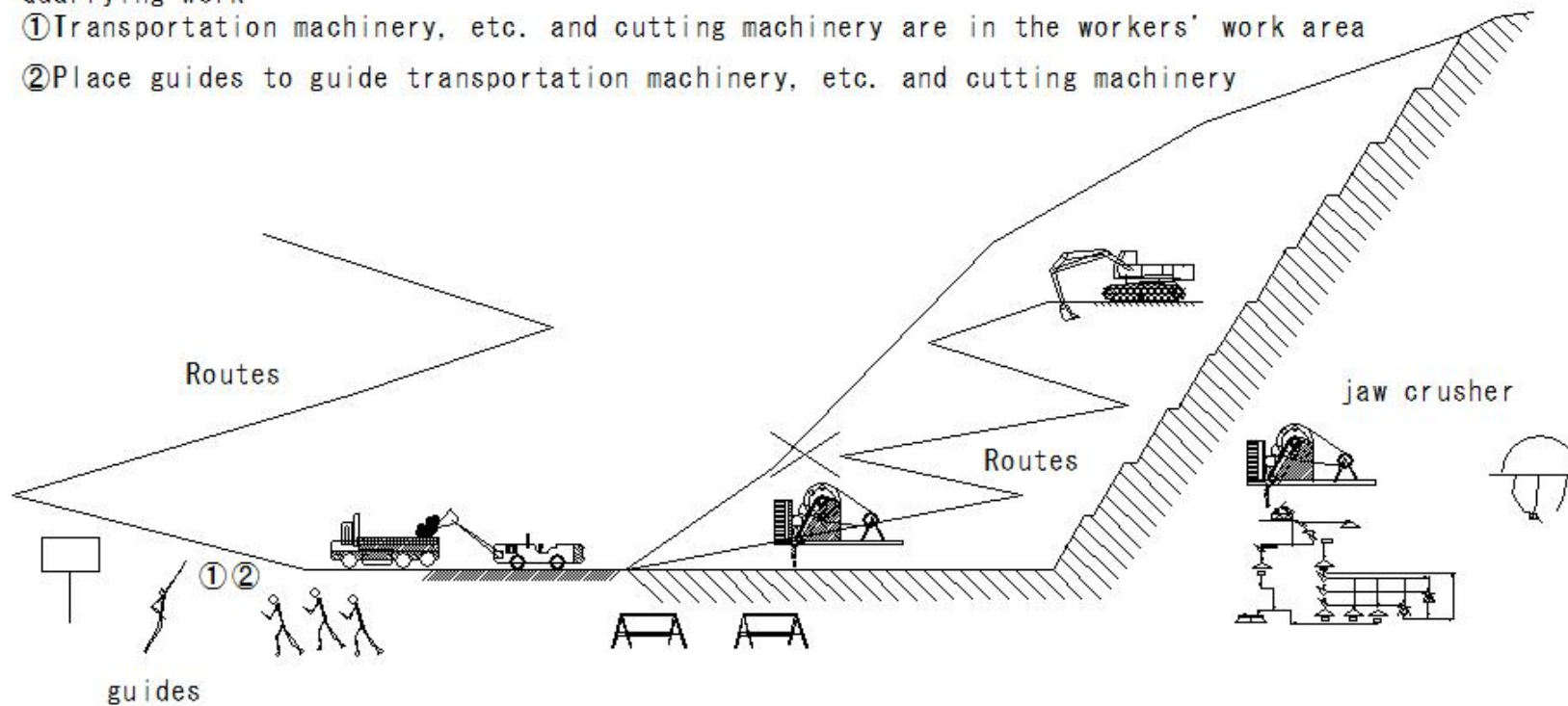
Article 416 of the Safety and Health Regulations

(Placement of guides, etc.)

Quarrying work

① Transportation machinery, etc. and cutting machinery are in the workers' work area

② Place guides to guide transportation machinery, etc. and cutting machinery



(S1125) Caisson

(S1125) Caisson

Safety work in caisson construction

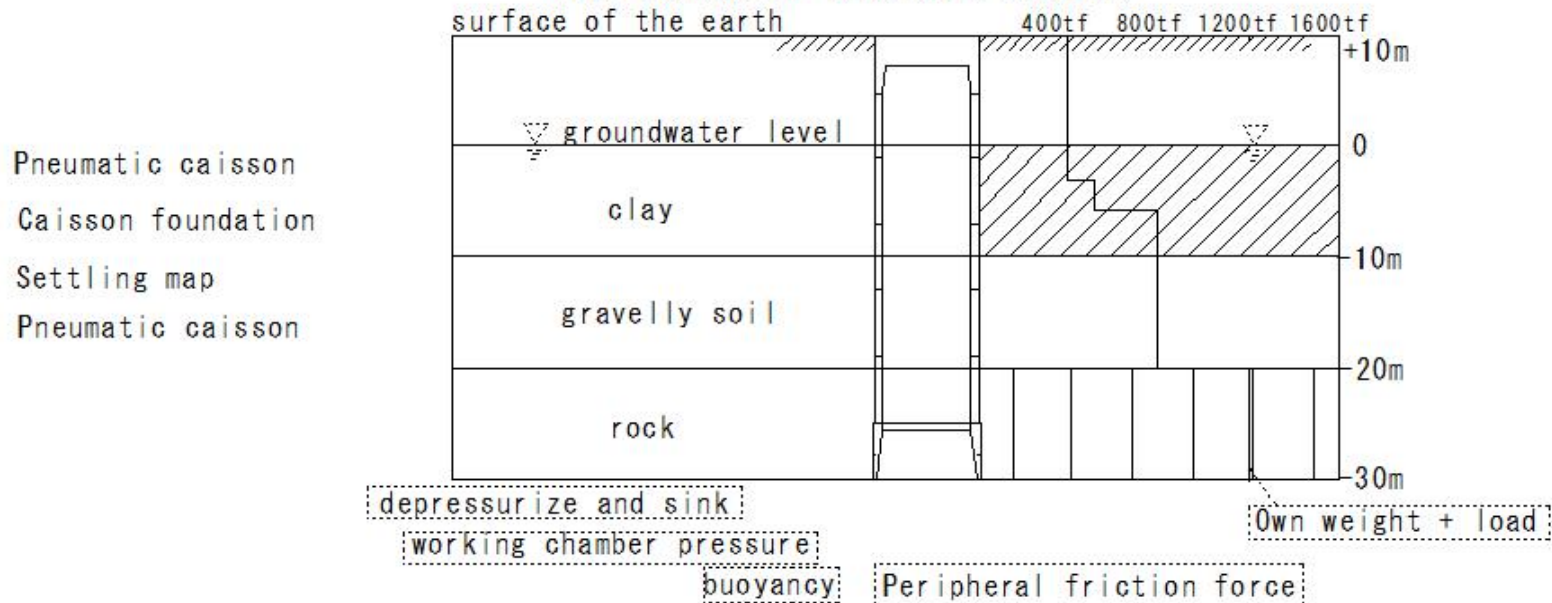
Article 1125 of the Safety and Health Regulations

(Subsidence diagram, etc.)

○ Open-air excavation work inside a caisson or well

- ① Determine the excavation method, amount of load, etc. based on the subsidence diagram.
- ② The height from the cutting edge to the ceiling or beam must be at least 1.8 meters.

Pile foundation-(pneumatic caisson)



(S1126) Caisson

(S1126) Caisson

Safety work in caisson construction

Safety and Health Regulations Article 377

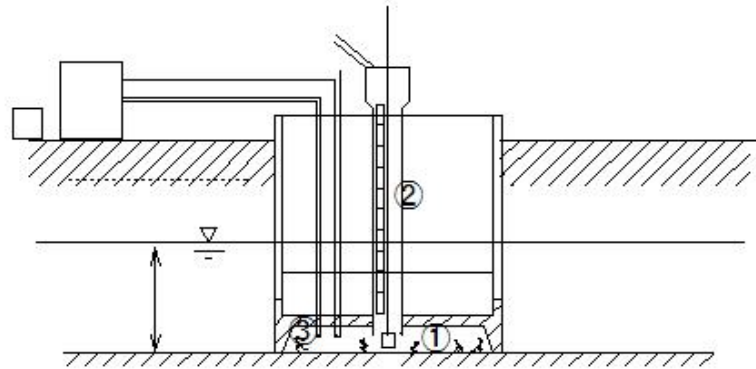
(Work inside caissons, etc.)

○ Caissons, wells, shafts, wells: open-air excavation work

① Measuring oxygen concentration

② Lifting equipment

③ Communication equipment (telephone, electric bell, etc.)



M262

F59

(S1127) Caisson

(S1127) Caisson

Safety work in caisson construction

Article 378 of the Safety and Health Regulations

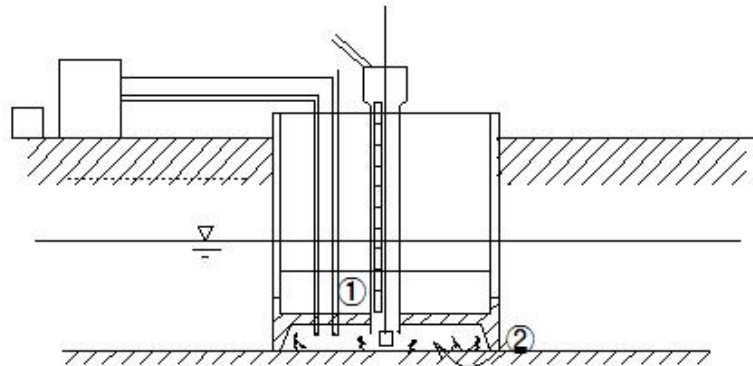
(Prohibition of work)

○ Open-air excavation work must not be performed inside caissons, etc.

① Equipment failure

② Risk of large amounts of water entering the caisson, etc.

(Prohibition of work)



M262

F59

(S1128) High pressure rooms work

(S1128) High pressure rooms work

Equipment standards for work in high pressure rooms

Article 1-2-2 of the High Pressure Law

- ① High pressure damage ② High pressure room work ③ Diving work
- ④ Cabine method and other compressed air methods ⑤ High pressure room work
- ⑥ Inert gases: nitrogen and helium

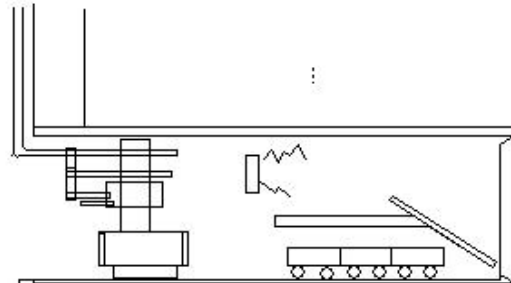
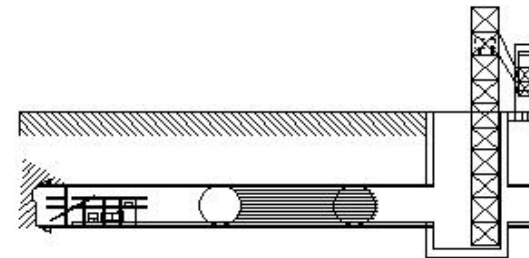
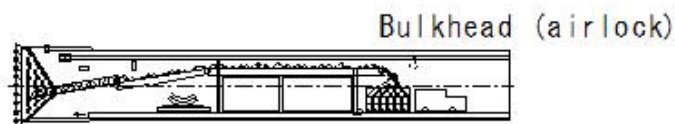


Fig. 3.24 Equipment for compressed air work S141

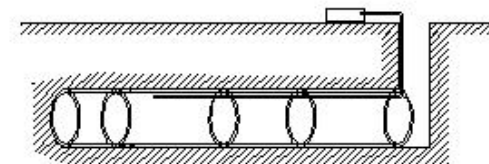


② Shield method

F127
T112



Air pressure shield tunneling T157



pneumatic method T231

S144

(S1129) High pressure rooms work

(S1129) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure rules, Article 2

(Workroom volume)

- ① High pressure indoor work ② Workroom volume ③ More than 4 cubic meters per worker

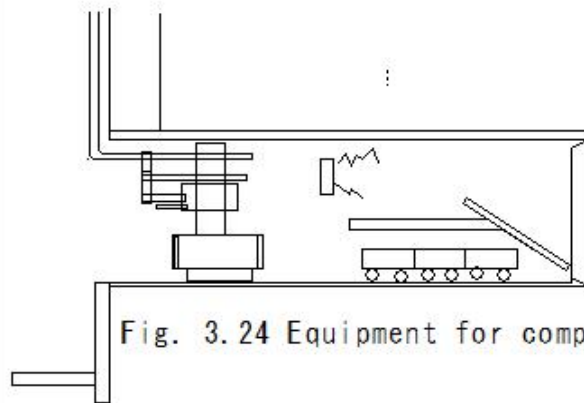
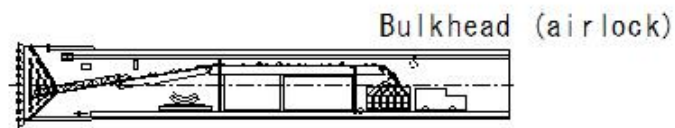
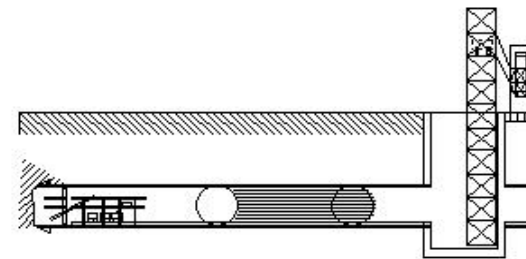


Fig. 3.24 Equipment for compressed air work
S141

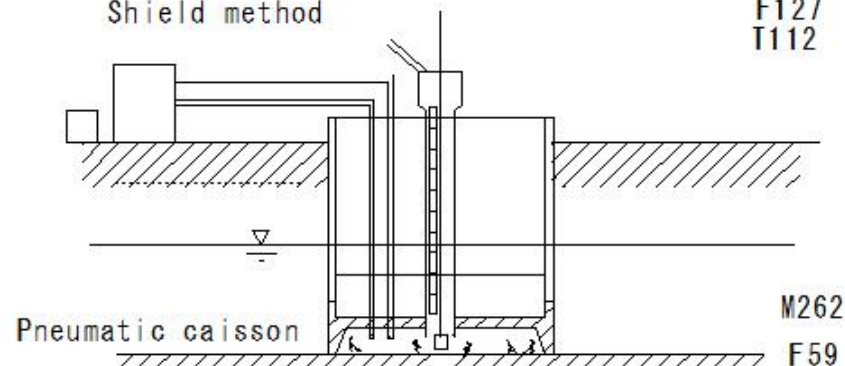


Air pressure shield tunneling T157



Shield method

F127
T112



Pneumatic caisson

M262
F59

(S1130) High pressure rooms work

(S1130) High pressure rooms work

Equipment standards for work in high pressure rooms

High Pressure Law Article 3

(Floor area and volume of the high pressure room)

① Floor area and volume of the high pressure room

② For each worker in a high pressure room, the area must be at least 0.3 square meters and at least 0.6 cubic meters.

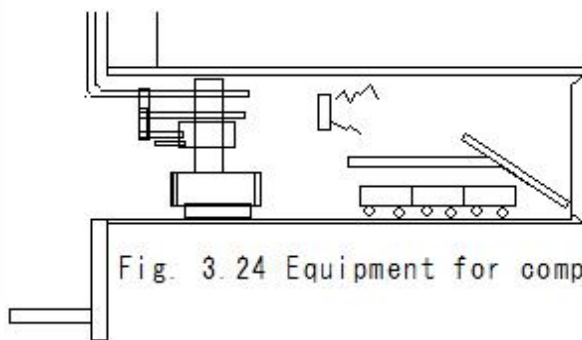
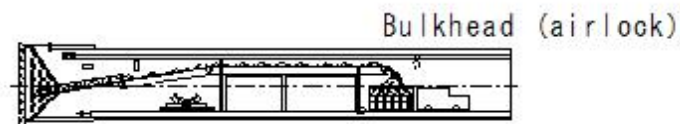
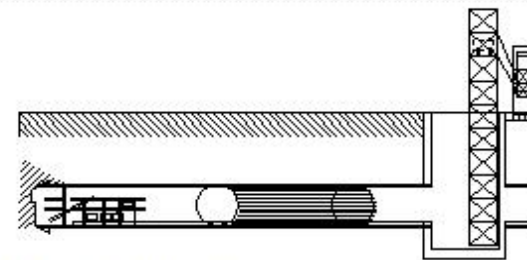


Fig. 3.24 Equipment for compressed air work
S141

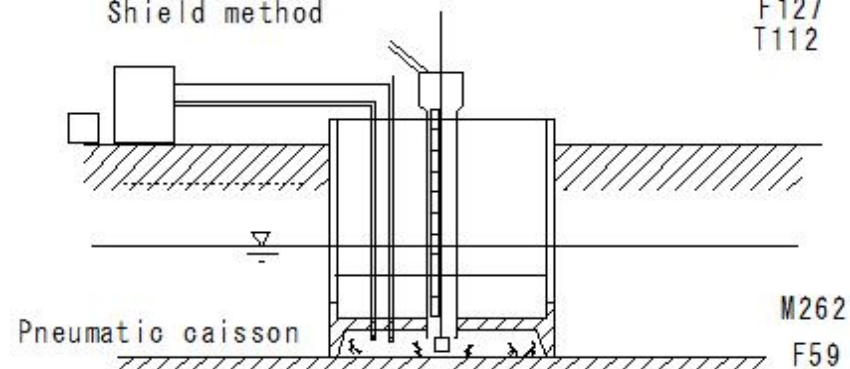


Air pressure shield tunneling
T157



Shield method

F127
T112



Pneumatic caisson

M262
F59

(S1131) High pressure rooms work

(S1131) High pressure rooms work

Equipment standards for work in high pressure rooms

High Pressure Law Article 3
(Floor area and volume of the high pressure room)

- ① For each worker in a high pressure room, the area must be at least 0.3 square meters and at least 0.6 cubic meters.

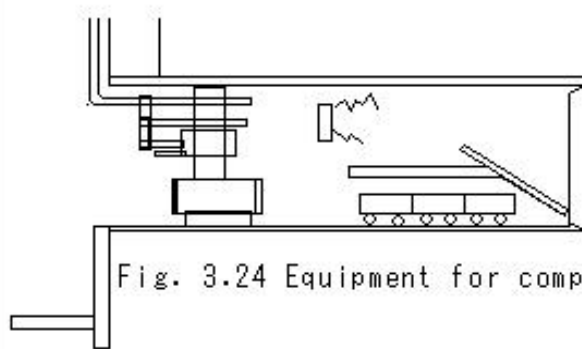
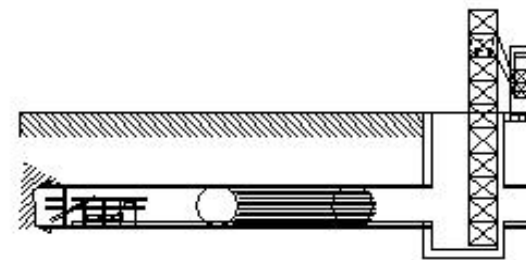


Fig. 3.24 Equipment for compressed air work
S141

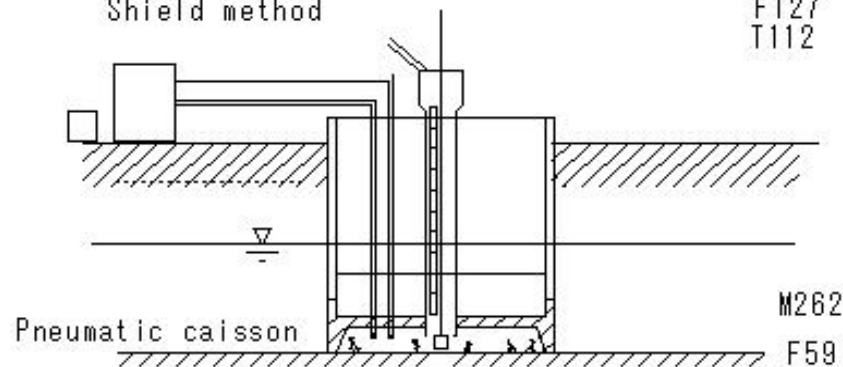


Air pressure shield tunneling
T157



Shield method

F127
T112



Pneumatic caisson

M262
F59

(S1132) High pressure rooms work

(S1132) High pressure rooms work

Equipment standards for work in high pressure rooms

High Pressure Law Article 5

(Air purifying device)

- ① Between the air compressor and the work room or air chamber.
- ② Install a device to purify the air sent to the work room and air chamber.

(Air purifying device)

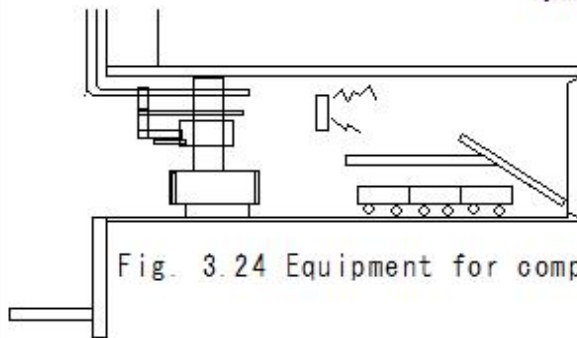
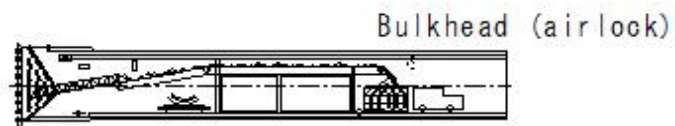
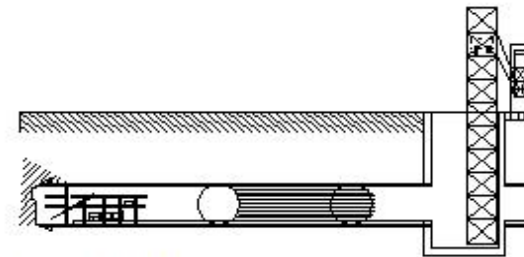


Fig. 3.24 Equipment for compressed air work
S141

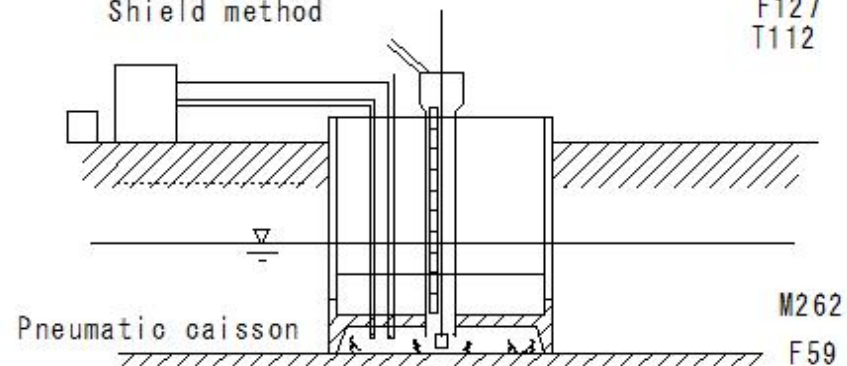


Air pressure shield tunneling T157



Shield method

F127
T112



Pneumatic caisson

M262
F59

(S1133) High pressure rooms work

(S1133) High pressure rooms work

Equipment standards for work in high pressure rooms

High Pressure Law Article 6

(Exhaust pipe)

- ① In the work room and the air chamber
- ② Install an exhaust pipe
- ③ The exhaust pipe must have an inner diameter of 53 mm or less.

(Exhaust pipe)

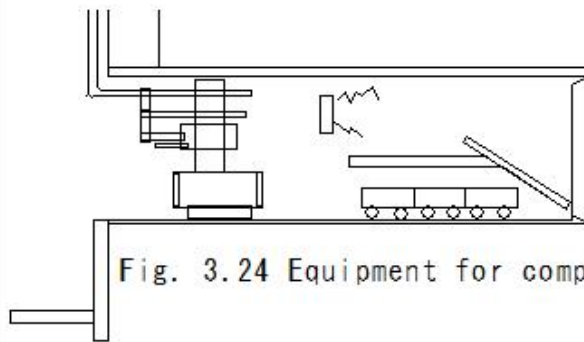
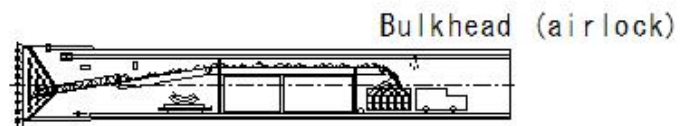
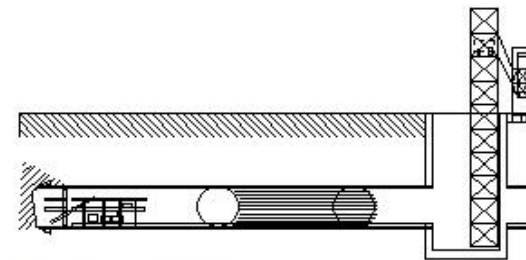


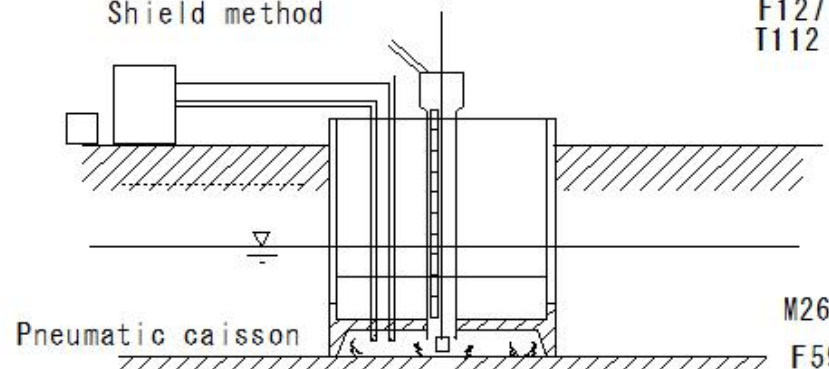
Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling
T157



Shield method



F127
T112

M262
F59

(S1134) High pressure rooms work

(S1134) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure law Article 7

Pressure gauge

- ① In case of installed inside the air pressure room
- ② Carry a portable pressure gauge
- ③ Pressure gauges with a scale of 0.02 megapascals or less

Pressure gauge

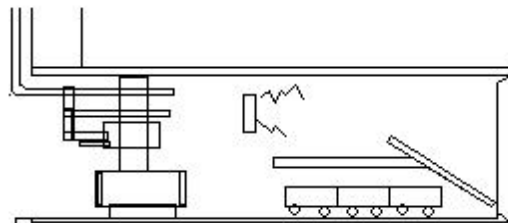
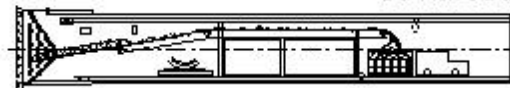
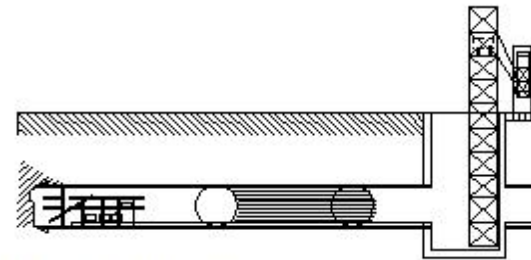


Fig. 3.24 Equipment for compressed air work
S141

Bulkhead (airlock)

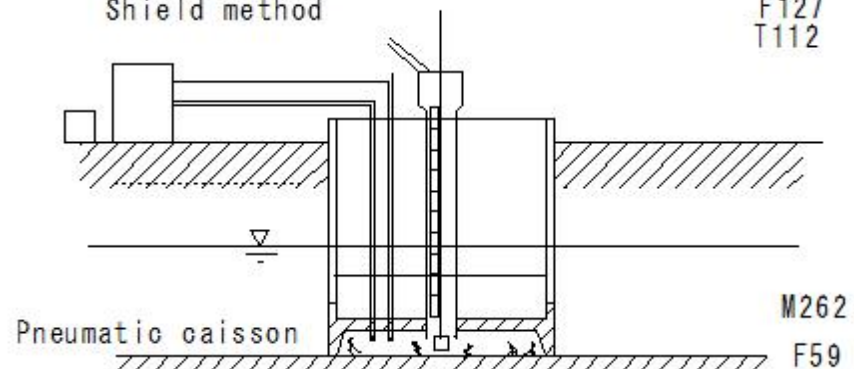


Air pressure shield tunneling T157



Shield method

F127
T112



M262
F59

(S1135) High pressure rooms work

(S1135) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure rules, Article 7-2

(Automatic alarm for abnormal temperatures)

(Automatic alarm for abnormal temperatures)

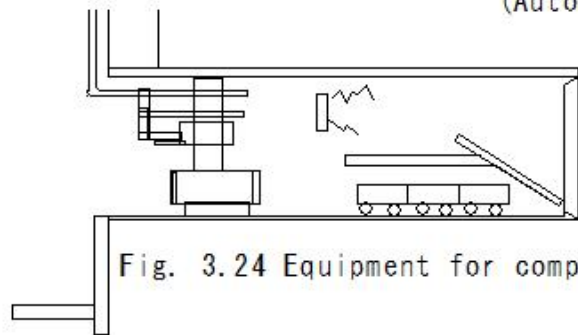
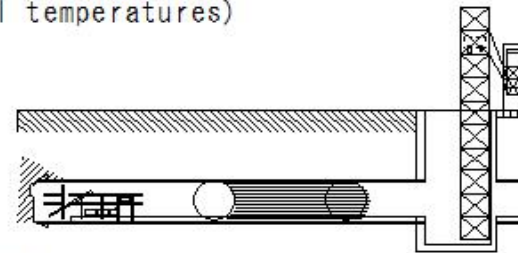


Fig. 3.24 Equipment for compressed air work
S141

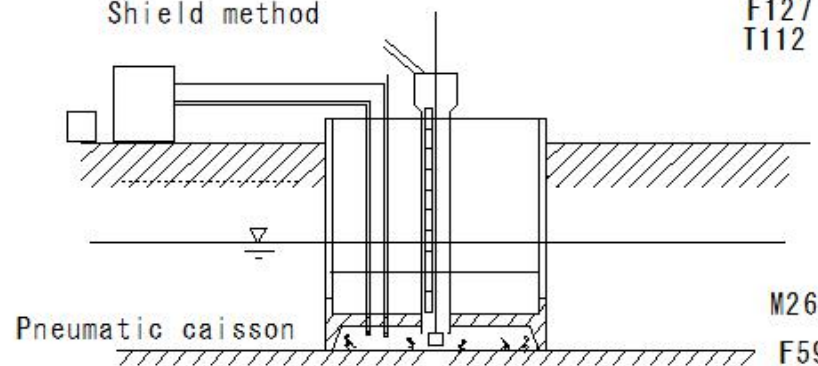


Air pressure shield tunneling
T157



Shield method

F127
T112



M262
F59

(S1136) High pressure rooms work

(S1136) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure regulations Article 7-3

(Peepholes, etc.)

① A window that allows observation of the inside of the pneumatic chamber

(Peepholes, etc.)

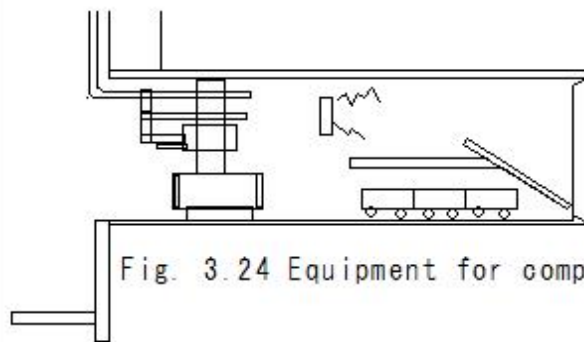
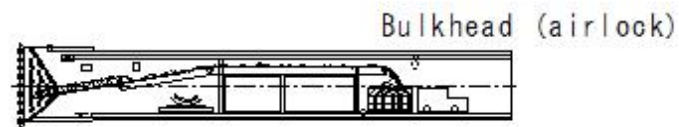
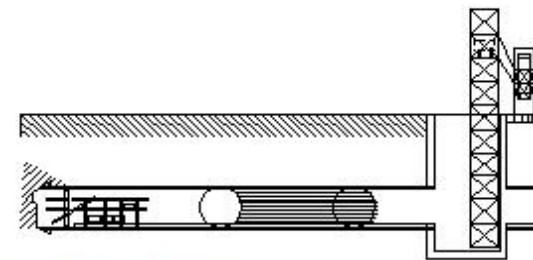


Fig. 3.24 Equipment for compressed air work
S141

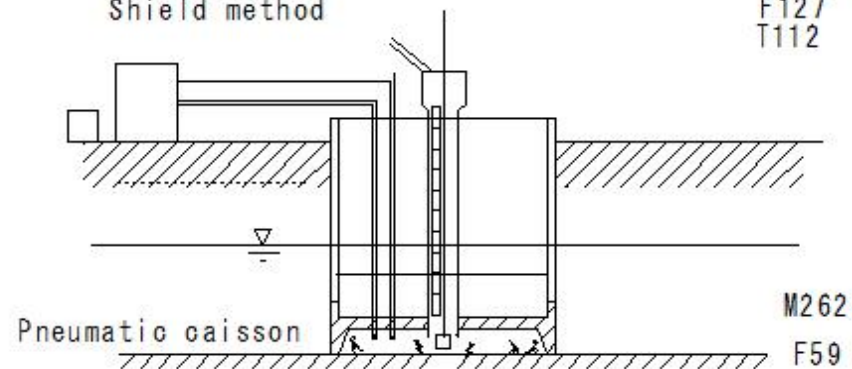


Air pressure shield tunneling T157



Shield method

F127
T112



M262
F59

(S1137) High pressure rooms work

(S1137) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure regulations Article 7-4

(Evacuation equipment, etc.)

- ① In case of working in a high pressure room
- ② Respiratory protection equipment, fiber rope
- ③ Evacuate workers in the high pressure room
- ④ Necessary equipment for rescue must be provided.

(Evacuation equipment, etc.)

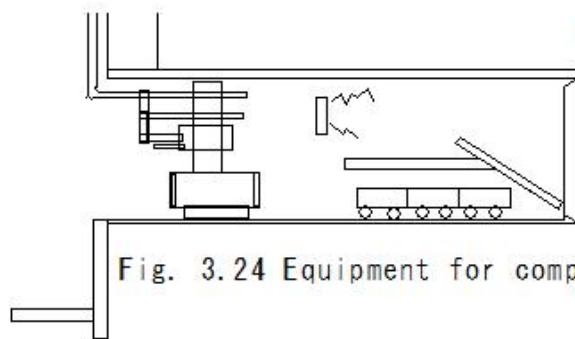
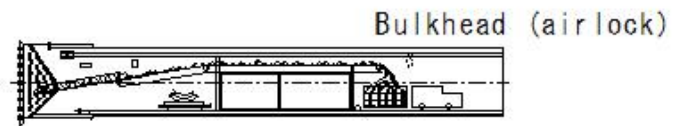
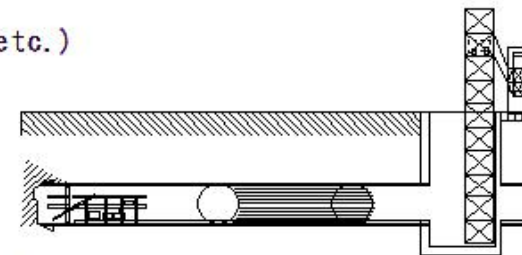


Fig. 3.24 Equipment for compressed air work
S141

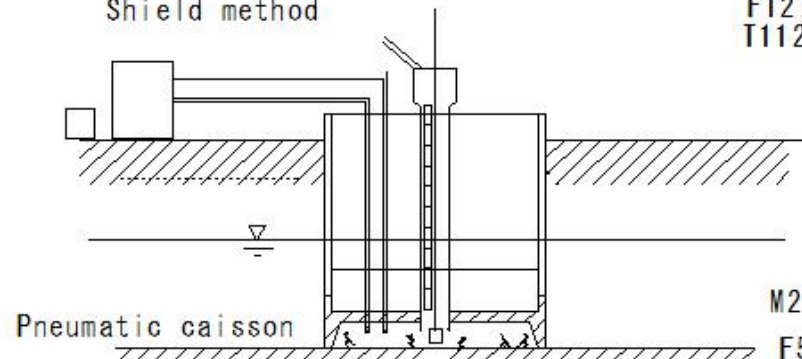


Air pressure shield tunneling T157



Shield method

F127
T112



Pneumatic caisson

M262
F59

(S1138) High pressure rooms work

(S1138) High pressure rooms work

Equipment standards for work in high pressure rooms

Article 12-2 of the High Pressure Law
(Work plan)

1. Composition of the gas to be sent to the work room or air chamber
2. Time from when pressurization starts to when depressurization starts
3. Maximum pressure in the work in the high pressure room
4. Pressurization and depressurization speed
5. Pressure at which depressurization is stopped and time to stop depressurization under pressure
6. The employer must inform the relevant workers of the work plan.

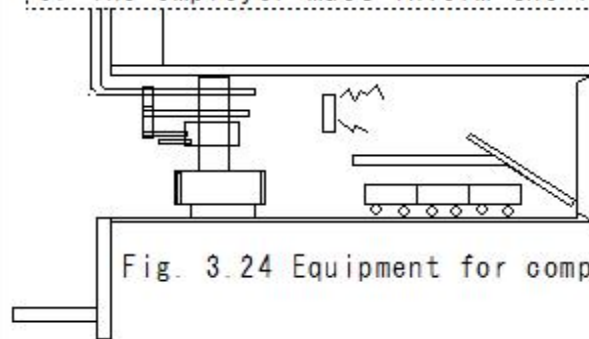
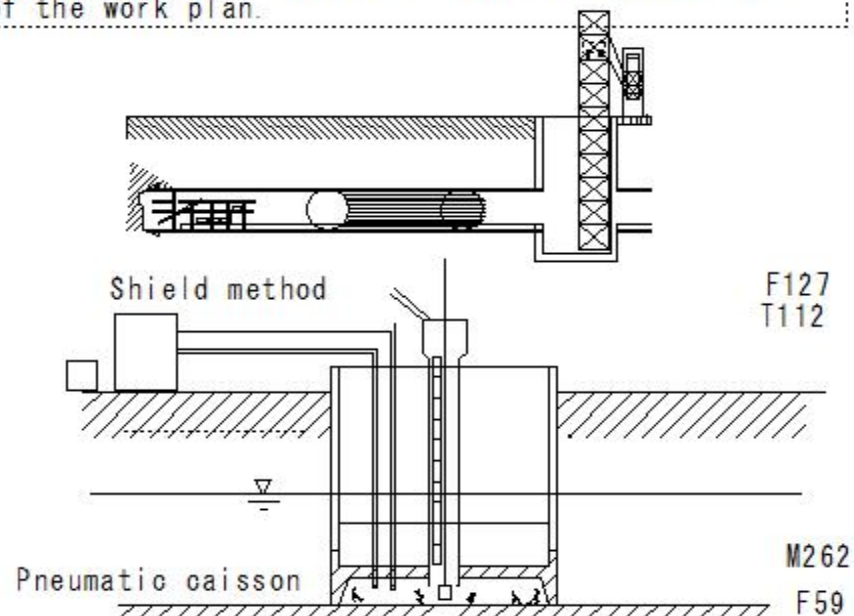


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling
T157



F127
T112

M262
F59

(S1139) High pressure rooms work

(S1139) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure rules Article 13

(No entry)

① Prohibits anyone other than those who need to enter the air chamber or work room

② No entry measures -Posting

(No entry)

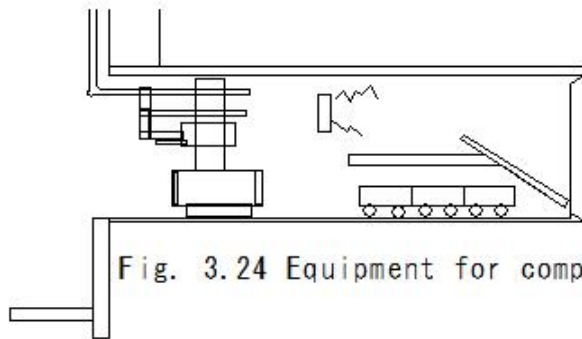
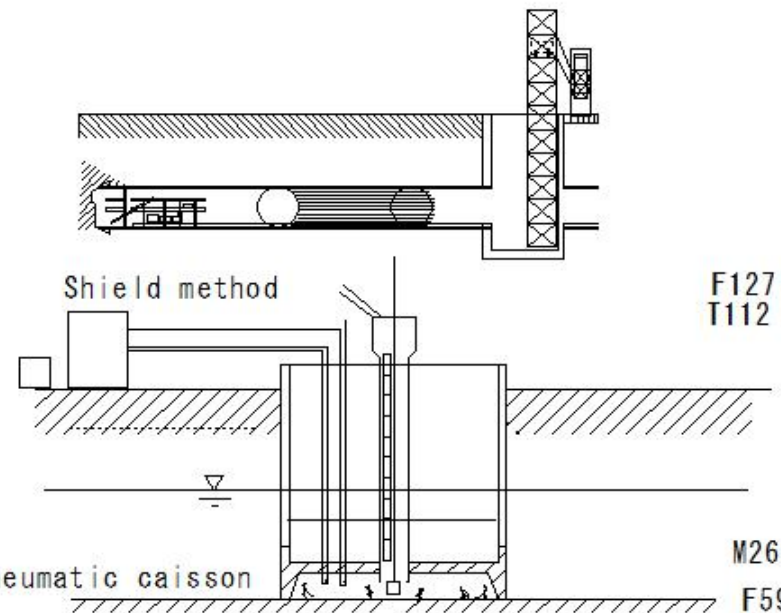


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling
T157



F127
T112

M262
F59

(S1140) High pressure rooms work

(S1140) High pressure rooms work

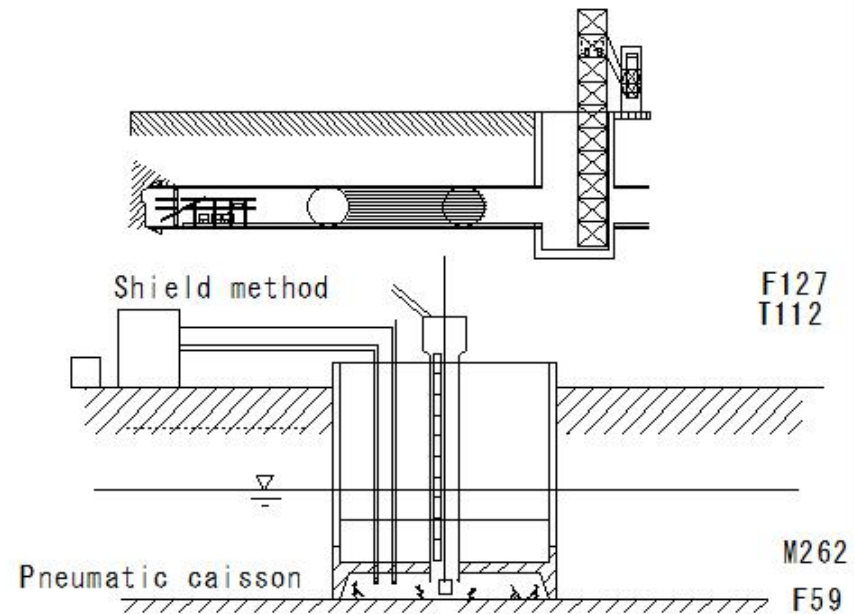
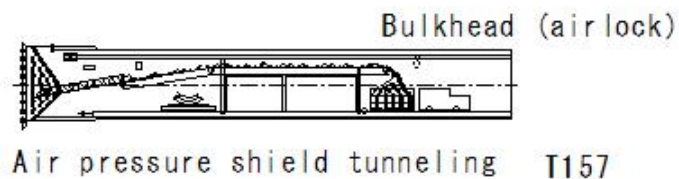
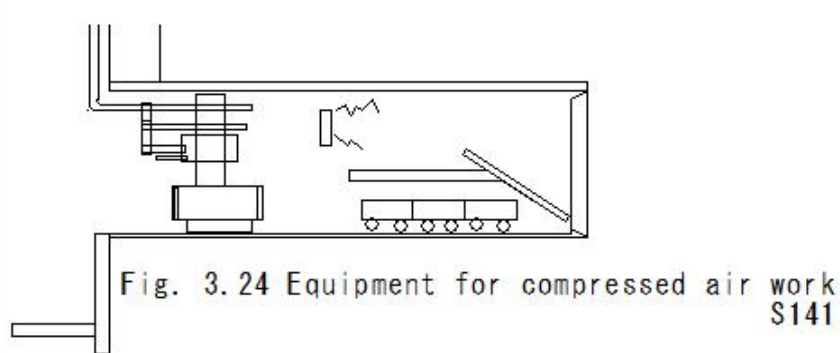
Equipment standards for work in high pressure rooms

High pressure rules, Article 14

(Pressurization speed)

① Speed of 0.08 megapascals per minute or less

(Pressurization speed)



(S1141) High pressure rooms work

(S1141) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure law Article 15

(Limits on gas partial pressure)

1. Oxygen: 18 kilopascals to 160 kilopascals
2. Nitrogen: 400 kilopascals or less
3. Carbon dioxide: 0.5 kilopascals or less

(Limits on gas partial pressure)

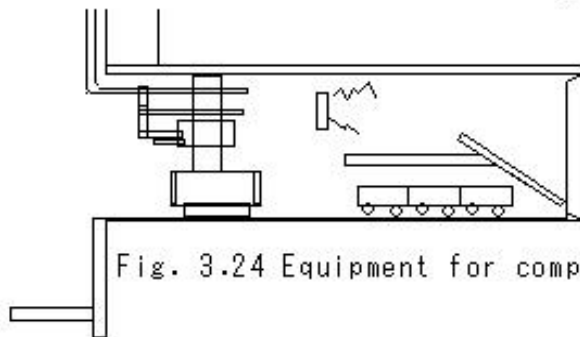
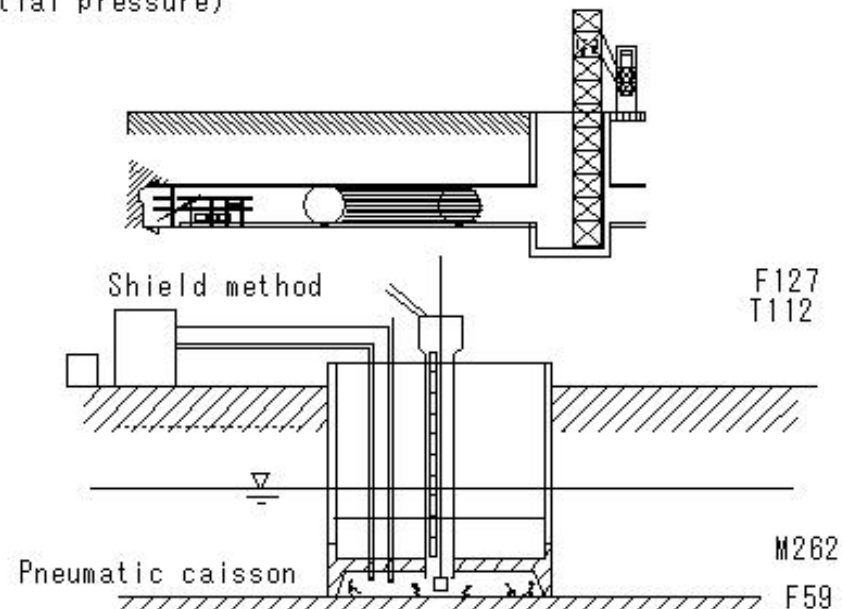


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



(S1142) High pressure rooms work

(S1142) High pressure rooms work

Equipment standards for work in high pressure rooms

Article 16 of the High Pressure Act

(Limits on oxygen exposure)

1. Limits on oxygen exposure: Supplying air to the work room or air chamber and other necessary measures to ensure that the amount does not exceed the specified value

(Limits on oxygen exposure)

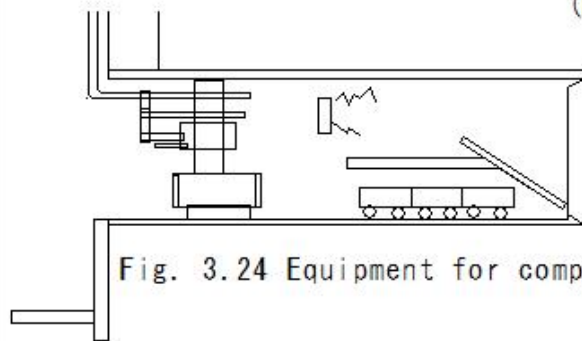
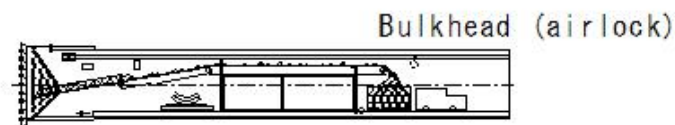
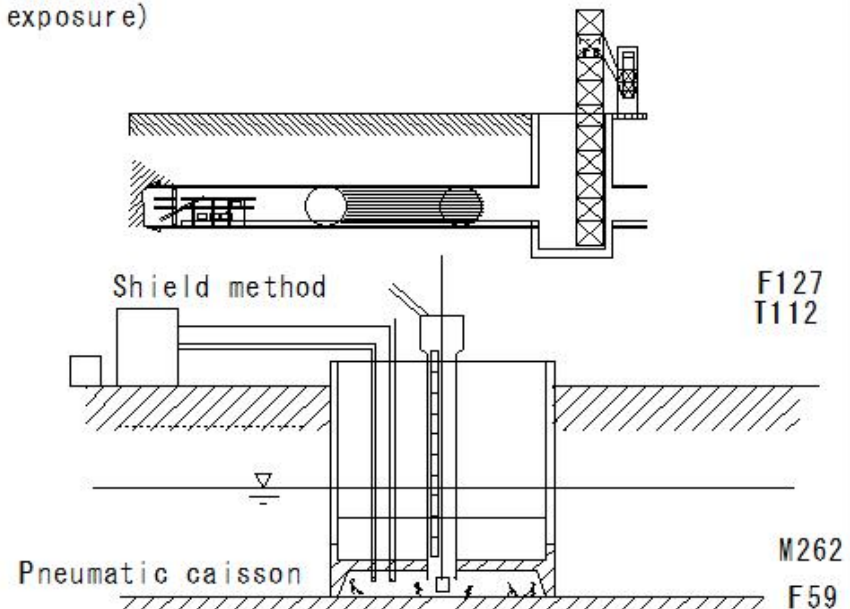


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



F127
T112

M262
F59

(S1143) High pressure rooms work

(S1143) High pressure rooms work

Equipment standards for work in high pressure rooms

Article 17 of the High Pressure Law

(Suppression of harmful gases)

① Ventilation, measurement of harmful gases and other necessary measures

(Suppression of harmful gases)

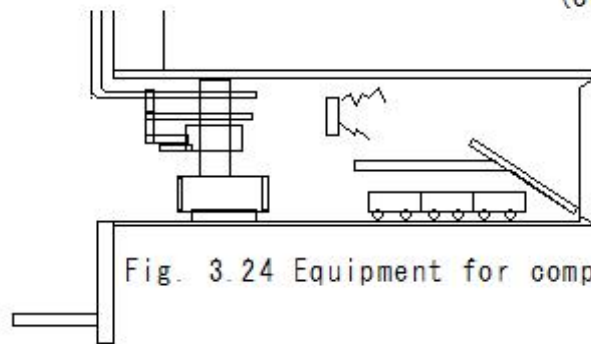
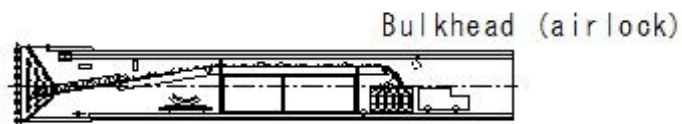
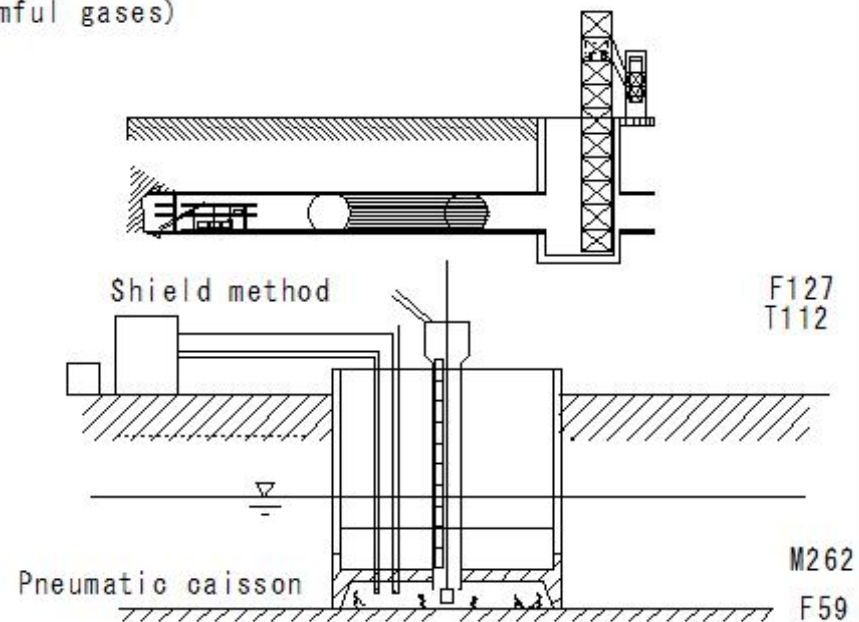


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



(S1144) High pressure rooms work

(S1144) High pressure rooms work

Equipment standards for work in high pressure rooms

High Pressure Law Article 18

(Speed of decompression, etc.)

- ① The speed of decompression must be 0.08 megapascals per minute or less.
- ② After the decompression is completed, heavy work should not be performed for 14 hours.

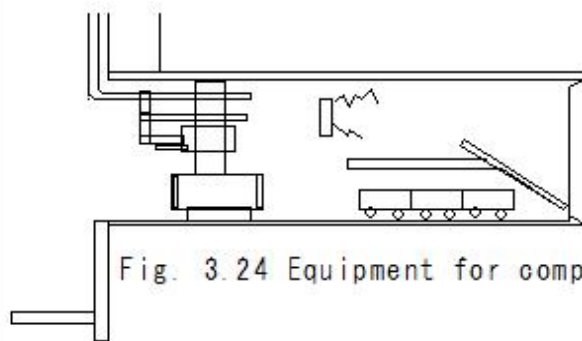
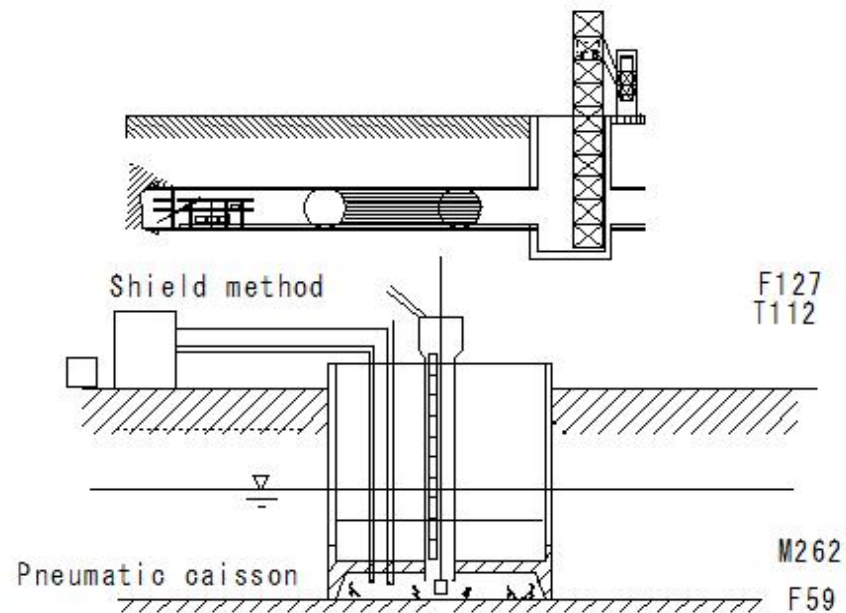


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



(S1145) High pressure rooms work

(S1145) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure rules Article 19

(Special provisions for decompression, etc.)

- ① In case of the speed of decompression is increased or the time to stop decompression is shortened
- ② After evacuating or rescuing.
- ③ Place the person in a recompression chamber or aeration chamber.
- ④ Pressurize the person to a pressure equal to the pressure for work in a high pressure room.

(Special provisions for decompression, etc.)

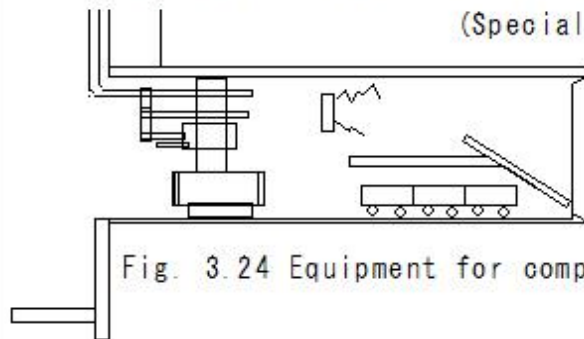
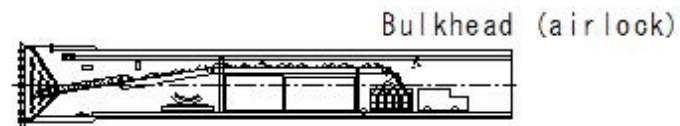
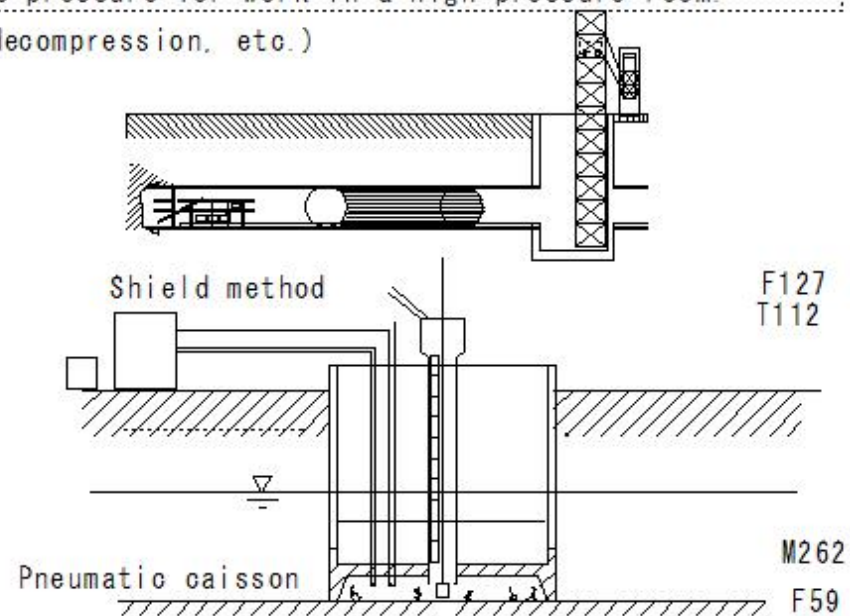


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



F127
T112

M262
F59

(S1146) High pressure rooms work

(S1146) High pressure rooms work

Equipment standards for work in high pressure rooms

High Pressure Law Article 20

(Measures during decompression)

1. Illumination on the floor of the high pressure room must be at least 20 lux.
2. In case of the temperature inside the high pressure room is below 10 degrees, use blankets or other appropriate heat retention equipment.
3. In case of the time required for decompression exceeds one hour, have employees use chairs or other resting equipment.
4. In case of decompression is to be performed, notify employees working in the high pressure room.

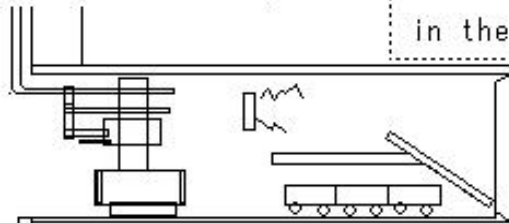
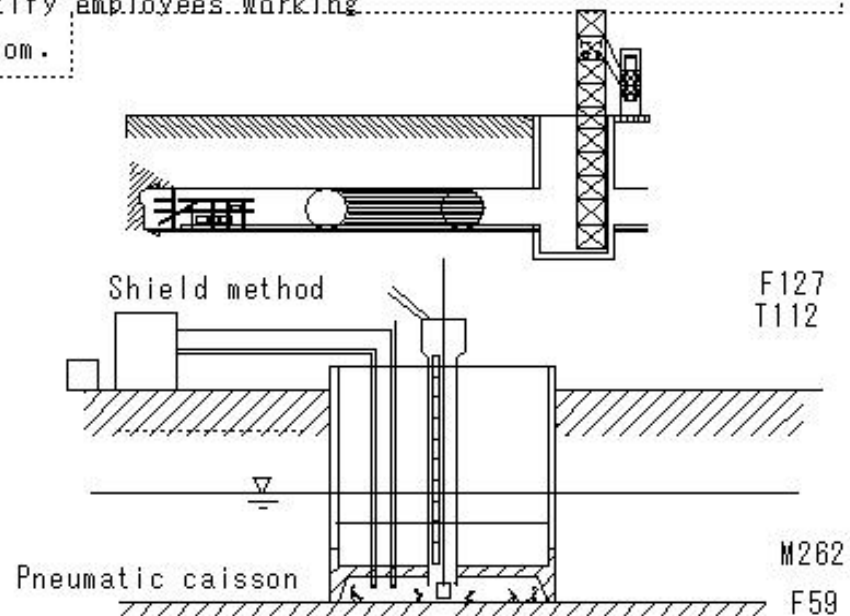


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



(S1147) High pressure rooms work

(S1147) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure rules Article 20-2

(Records of work conditions, etc.)

- ① Name of the person working in the high pressure room
- ② Create a document stating the date and time of decompression
- ③ Must keep for five years

(Records of work conditions, etc.)

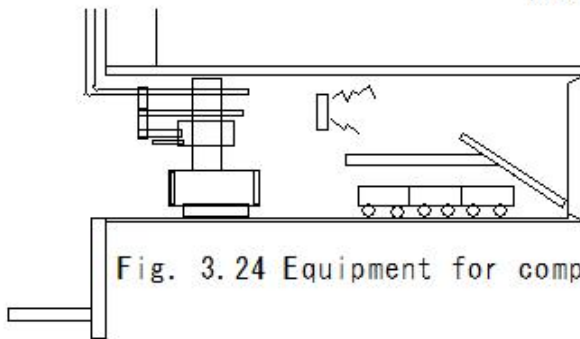
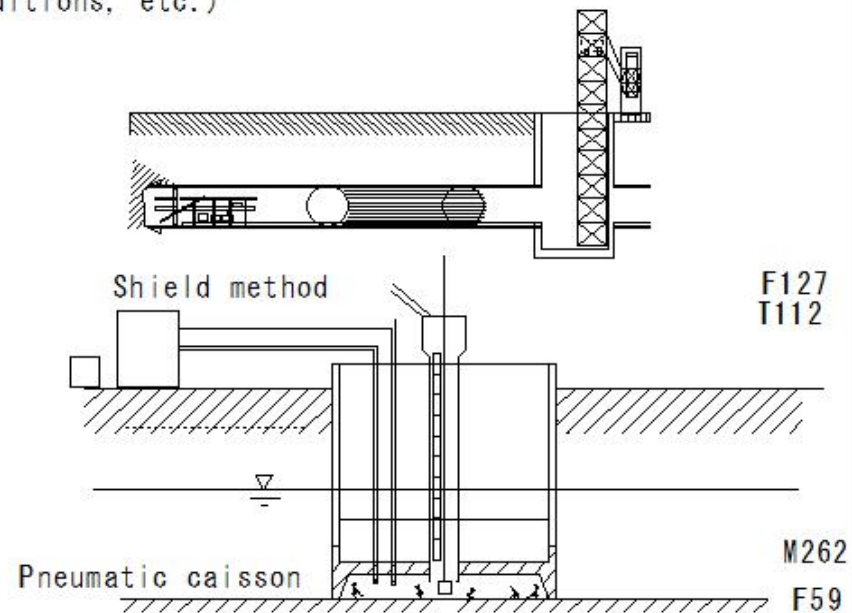


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



(S1148) High pressure rooms work

(S1148) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure rules Article 21

(Communication)

- ① Have a liaison officer stationed at all times
- ② Communication equipment.
- ③ In case the communication equipment breaks down
- ④ Determine how to contact them
- ⑤ Post in a visible place

(Communication)

High pressure room workers Air compressor operators Liaison officers

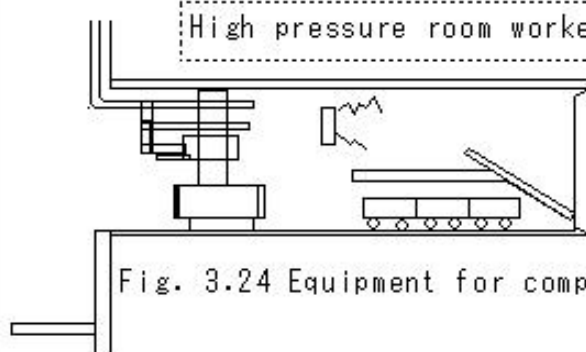
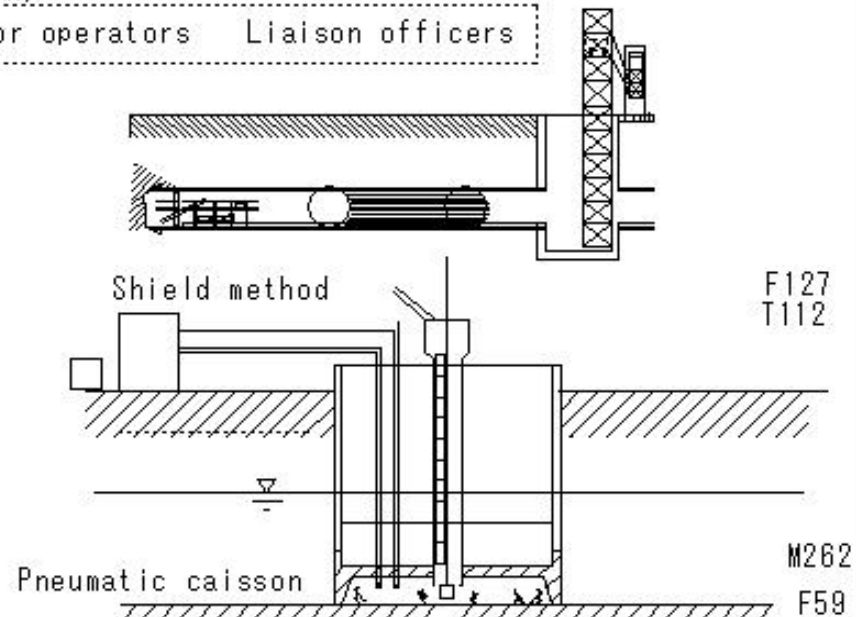


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



(S1149) High pressure rooms work

(S1149) High pressure rooms work

Management of work in high pressure rooms

High pressure regulations Article 22

(Inspection and repair of equipment)

- ① Air supply pipes, exhaust pipes, communication devices-One day
- ② Valves or cocks for adjusting the supply of air to
- ③ Valves or cocks for adjusting the exhaust from work rooms and air chambers-One day
- ④ Cooling devices attached to air compressors for supplying air to work rooms and air chambers-One day
- ⑤ Tools-One day
- ⑥ Automatic alarm devices-One week
- ⑦ Air compressors for supplying air to work rooms :
- ⑧ Pressure gauges-One month
- ⑨ Air purifying devices-One month
- ⑩ Electrical circuits installed in caissons, diving bells, air shields, etc.-One month
- Whenever an inspection is carried out, repairs or other necessary measures are taken,
a summary of the inspection or repairs must be recorded and kept for three years.

(S1150) High pressure rooms work

(S1150) High pressure rooms work

Equipment standards for work in high pressure rooms

High Pressure Law Article 22-2

(Inspection of air supply equipment when it is first used, etc.)

- ① In case of the air supply equipment is used for the first time
- ② In case of the air supply equipment is disassembled and modified or repaired
- ③ In case of air supply equipment is used again after not being used for more than one month
- ④ Check the function of the air supply equipment
- ⑤ Do not use it until you have confirmed that there are no abnormalities.

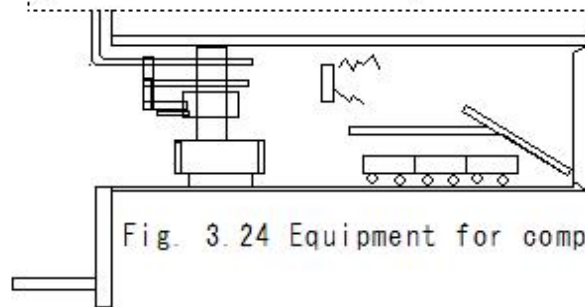
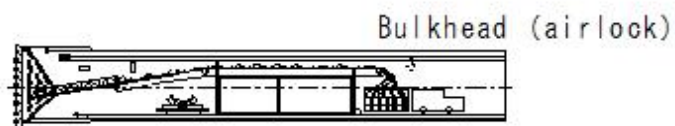
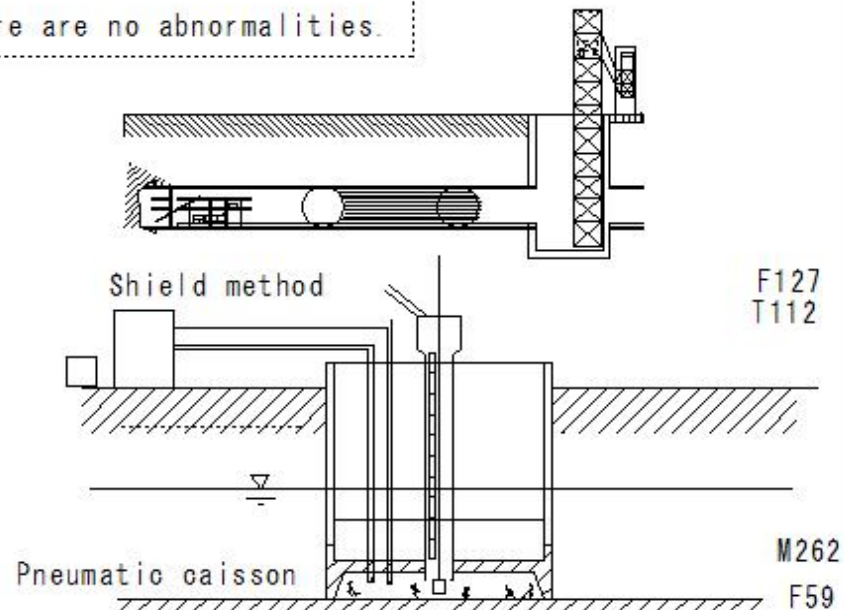


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



(S1151) High pressure rooms work

(S1151) High pressure rooms work

Equipment standards for work in high pressure rooms

Article 25-2 of the High Pressure Law

(Prevention of burns, etc.)

- For caissons, diving bells, air pressure shields, etc., take the following measures
- ① Lights - Use lights with guards. ② Circuit switches: Must not scatter sparks or arcs
- ③ Ignition sources are prohibited. ⑤ Welding, etc. are prohibited
- ④ Welding, cutting, and other open flames or arcs "welding, etc." are prohibited
- ⑥ Open flames, matches, and lighters are prohibited

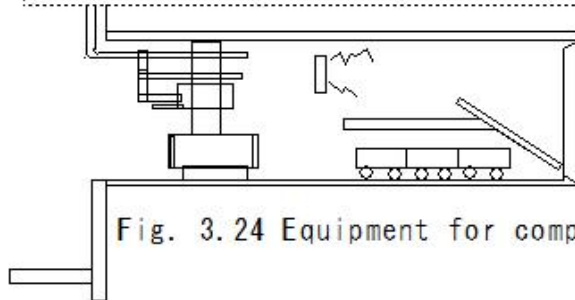
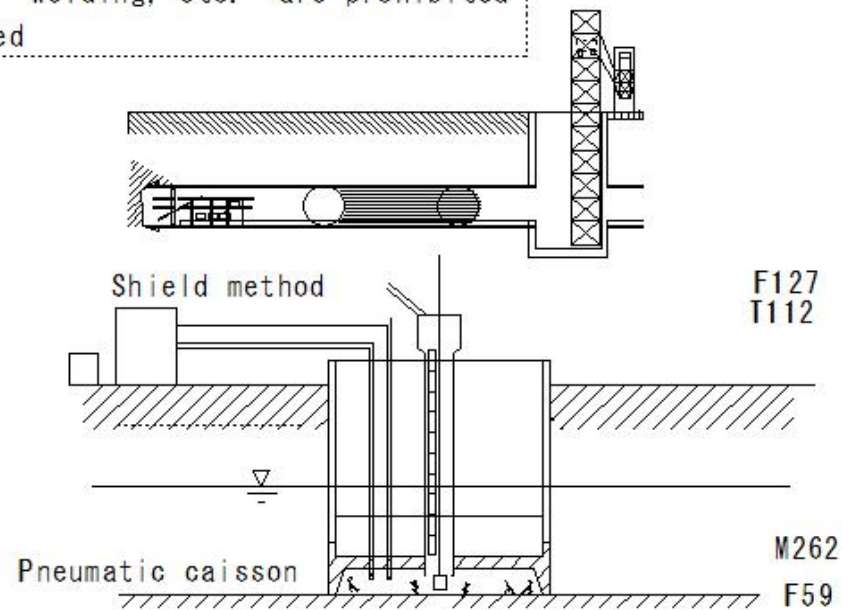


Fig. 3.24 Equipment for compressed air work S141



Air pressure shield tunneling T157



(S1152) High pressure rooms work

(S1152) High pressure rooms work

Equipment standards for work in high pressure rooms

High Pressure Law Article 25-3

(Limits on digging below the cutting edge)

① Prevention of sudden sinking of the caisson

② Do not dig below the cutting edge of the caisson can more than 50 centimeters.

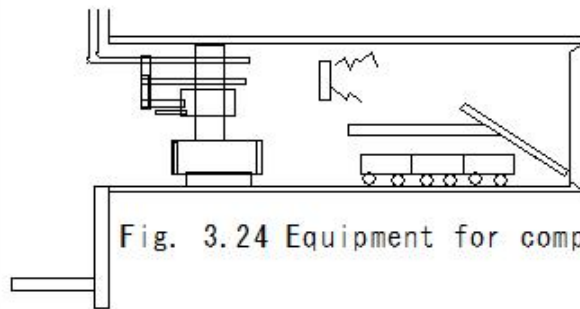
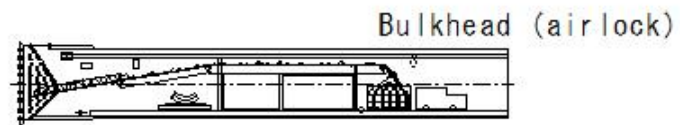
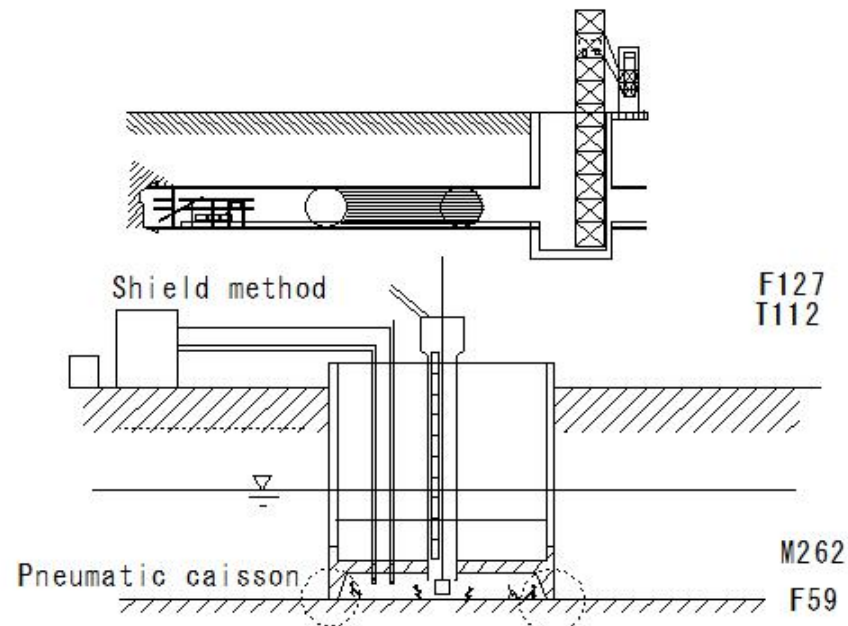


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling
T157



F127
T112

M262
F59

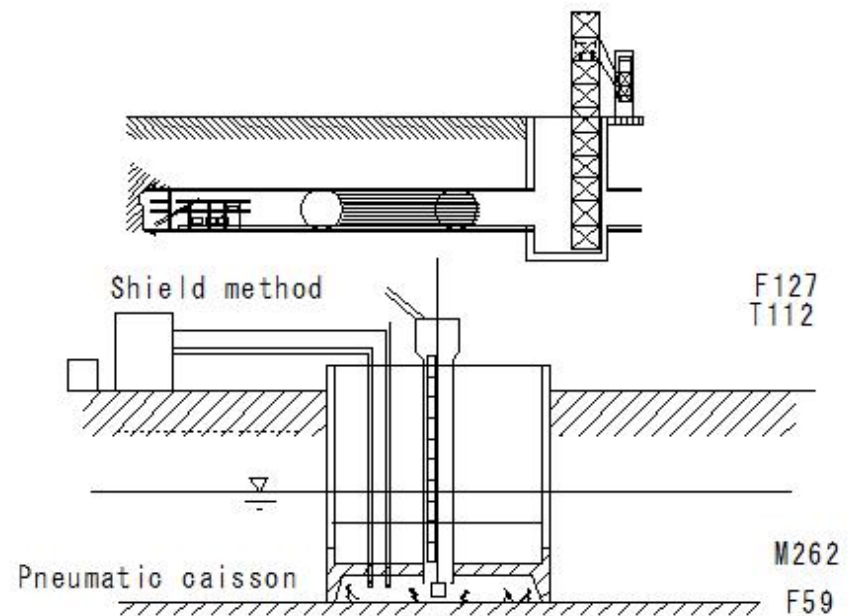
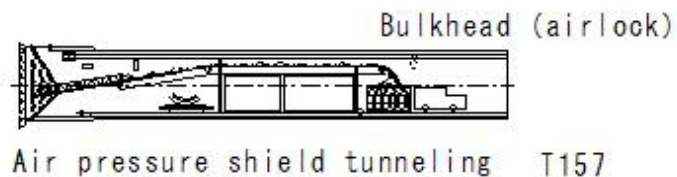
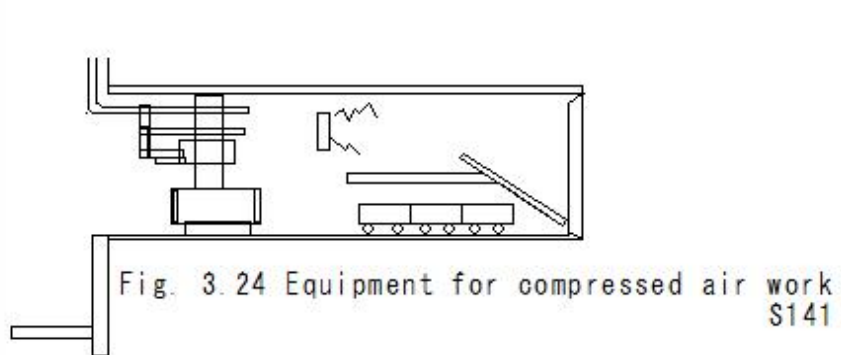
(S1153) High pressure rooms work

(S1153) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure regulations, Articles 23, 24, and 25

- ① Measures in the event of an accident
- ② Measures in the event of exhaust subsidence
- ③ Measures in the event of blasting



(S1154) High pressure rooms work

(S1154) High pressure rooms work

Equipment standards for work in high pressure rooms

Article 10 of the High Pressure Law

(Work Supervisor)

Appoint a high pressure room work supervisor for each workroom

○ High pressure room work supervisor

- ① Determine the work method and give direct supervision.
- ② Check the oxygen, carbon dioxide and harmful gas concentration measuring equipment.
- ③ Check the number of workers.
- ④ Maintain the proper pressure in the workroom.
- ⑤ Take measures to ensure that pressurization or depressurization is performed in accordance with regulations.

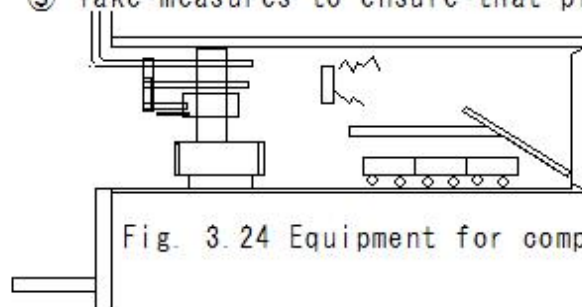
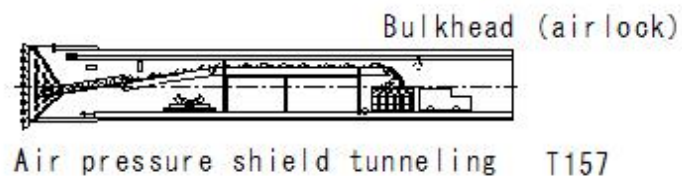
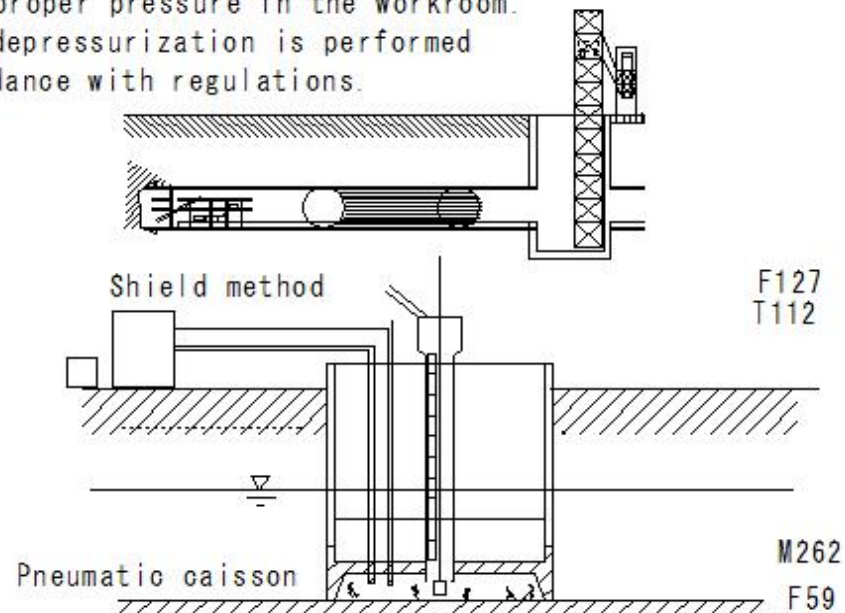


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



F127
T112

M262
F59

(S1155) High pressure rooms work

(S1155) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure regulations Article 11

(Special training)

- ① Work to operate air compressors to supply air to work rooms and air chambers
- ② Work to operate valves or cocks to adjust air supply to work rooms
- ③ Work to operate valves or cocks to adjust air supply to air chambers or exhaust from air chambers
- ④ Work to operate valves or cocks to adjust air supply to divers
- ⑤ Work to operate recompression chambers
- ⑥ Work in high pressure rooms

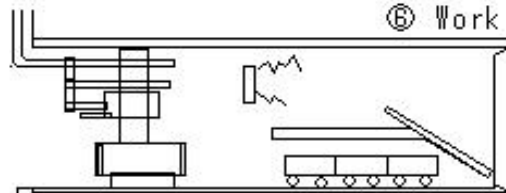
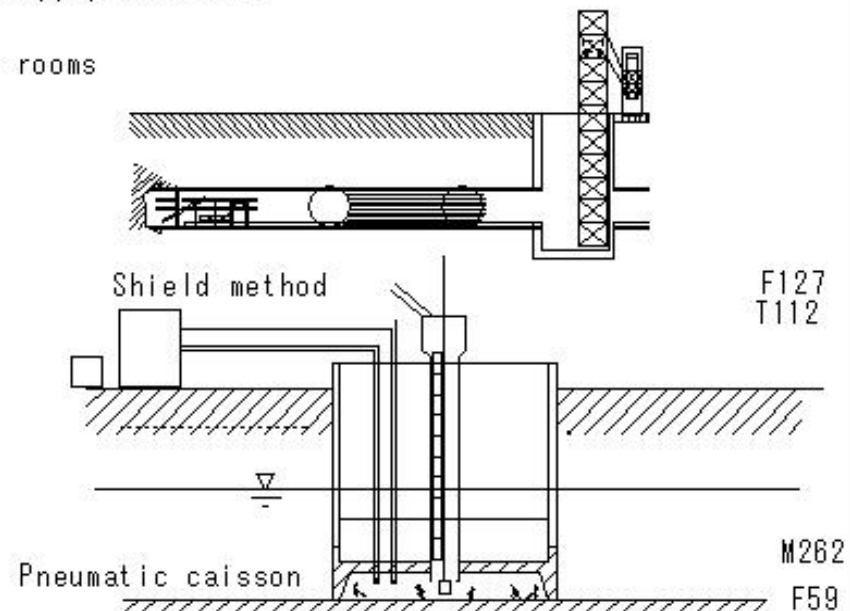


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



(S1156) High pressure rooms work

(S1156) High pressure rooms work

Equipment standards for work in high pressure rooms

Article 24-8 of the High Pressure Law

(Measures in case of exhaust sinking)

- ① Persons working in high pressure rooms
- ② Persons must be evacuated to the outside of the caisson.
- ③ Check for flooding or generation of harmful gases and other matters
- ④ After confirming that there is no risk of danger or health damage
- ⑤ No one other than designated persons may enter the caisson

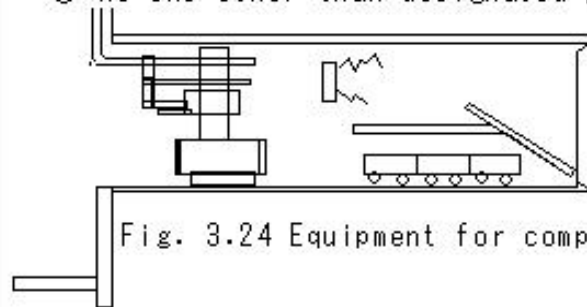
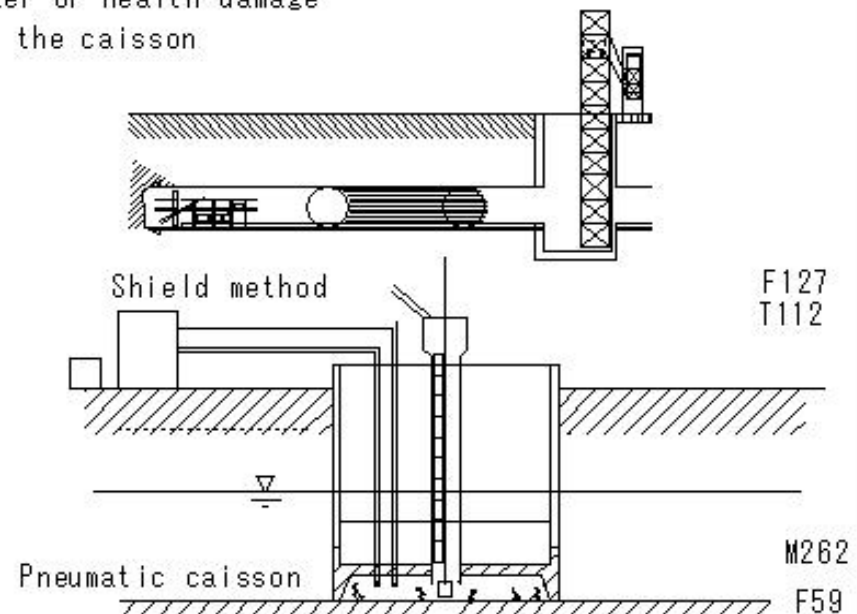


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



(S1157) High pressure rooms work

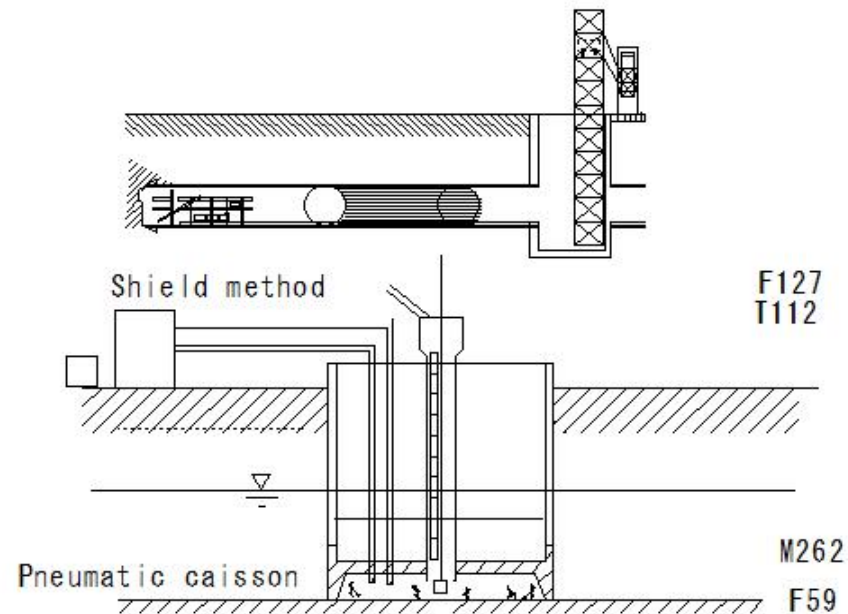
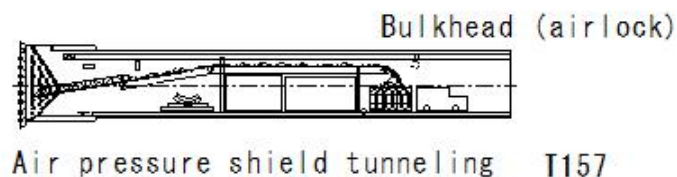
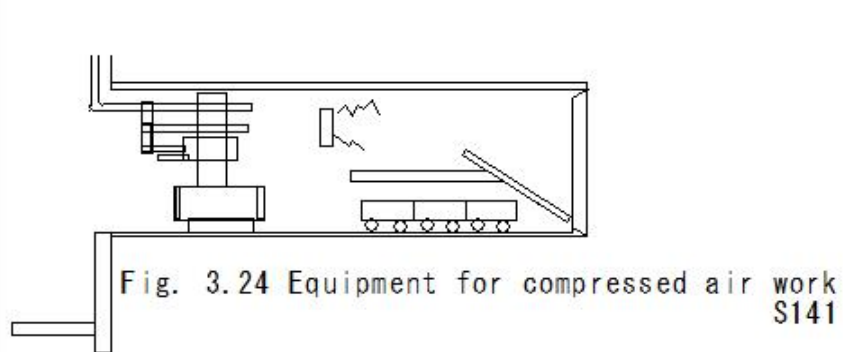
(S1157) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure rules, Article 26

(Equipment to be carried by the supervisor of high pressure rooms)

- ① Portable pressure gauge, flashlight, measuring equipment for measuring the concentration of oxygen, carbon dioxide and harmful gases
- ② Carrying signaling equipment in case of emergency



(S1158) High pressure rooms work

(S1158) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure law Article 38

(Health examination) ○High pressure room work or diving work

- ① Medical history ② Pain in joints, lower back or lower limbs, tinnitus, etc.
- ③ Motor function of limbs ④ Eardrum and hearing
- ⑤ Presence or absence of blood pressure, sugar or protein in urine
- ⑥ Measurement of lung capacity

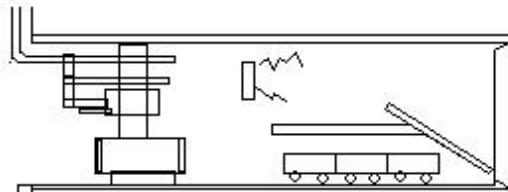
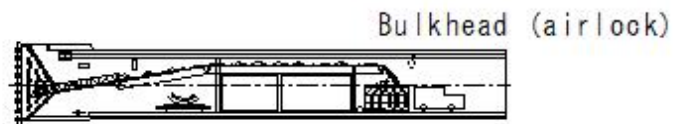
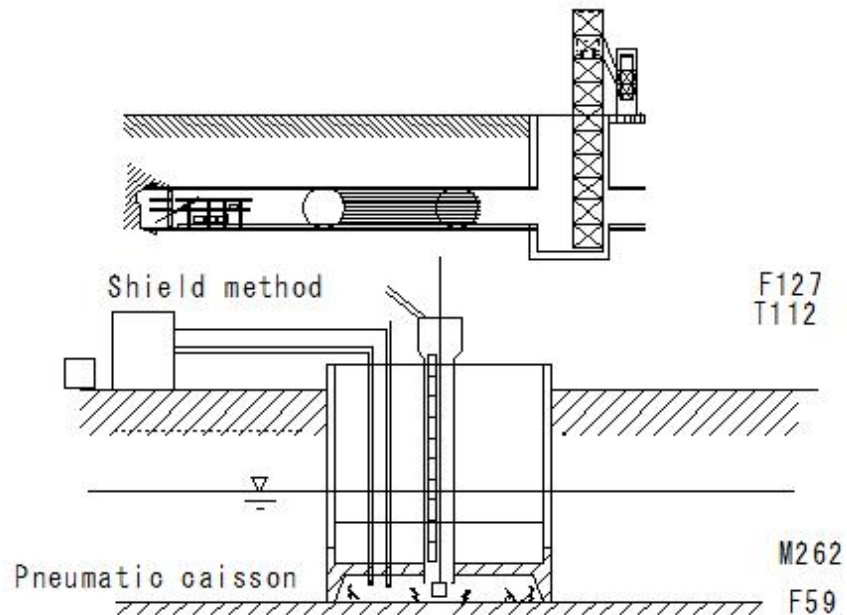


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



(S1159) High pressure rooms work

(S1159) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure rules, Article 39

(Results of medical examination)

① Create individual high pressure work medical examination records and keep them for five years

(Notification of medical examination results)

② Notify the results of the medical examination

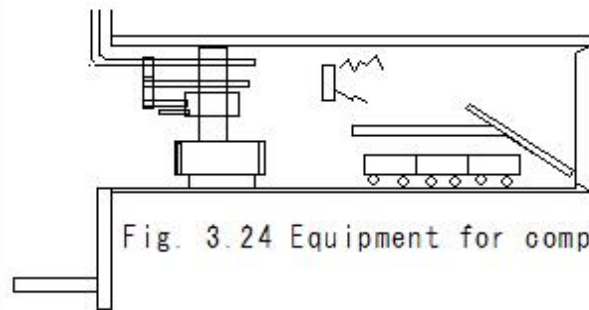
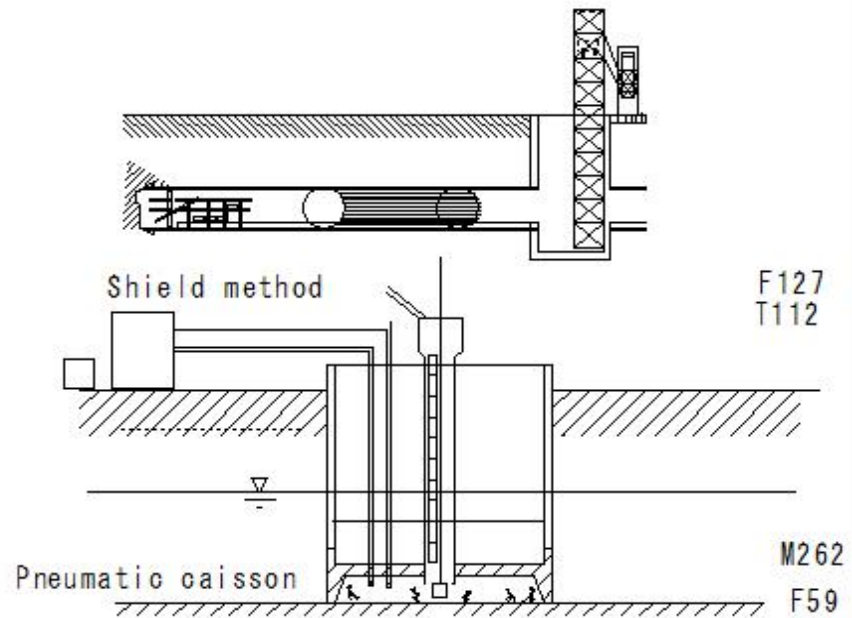
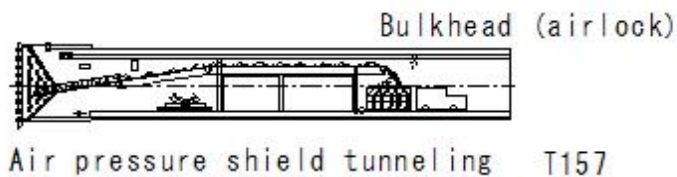


Fig. 3.24 Equipment for compressed air work
S141



(S1160) High pressure rooms work

(S1160) High pressure rooms work

Equipment standards for work in high pressure rooms

High pressure law Article 40

(Medical examination result report)

High pressure work medical examination result report -

Submit to the Chief of the Labor Standards Inspection Office

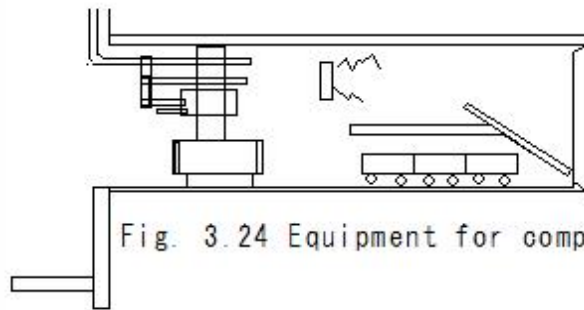
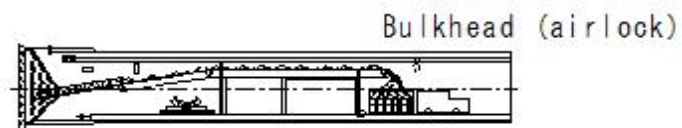
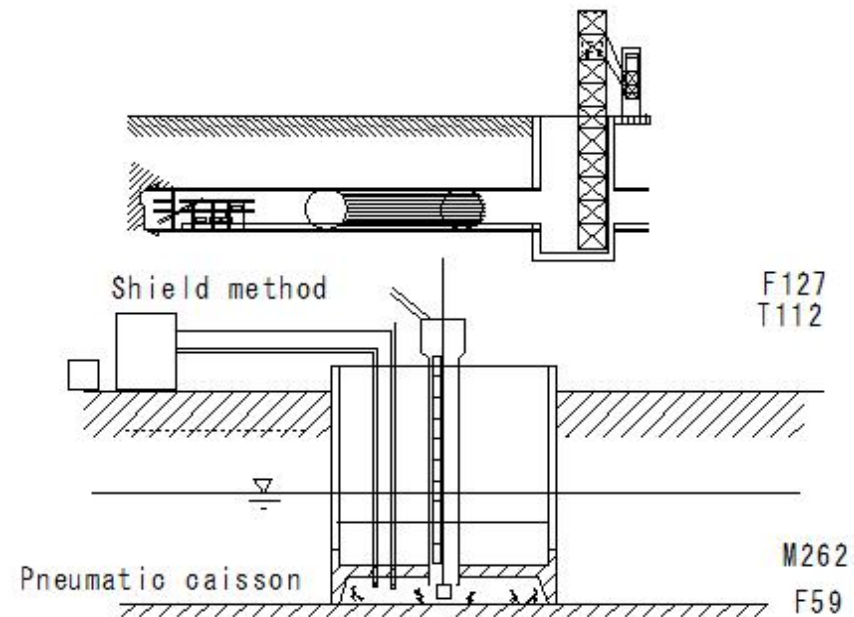


Fig. 3.24 Equipment for compressed air work
S141



Air pressure shield tunneling T157



(S1161) High pressure rooms work

(S1161) High pressure rooms work

Equipment standards for work in high pressure rooms

High Pressure Law Article 41

(Prohibition of work for sick people)

- | | |
|---|---|
| ① Decompression sickness/aftereffects | ○ Prohibition of work in high pressure |
| ② Pulmonary tuberculosis, pneumoconiosis, emphysema | |
| ③ Anemia, valvular heart disease, coronary artery sclerosis, hypertension | |
| ④ Psychoneurosis, alcoholism, neuralgia | ⑤ Otitis media |
| ⑥ Arthritis, rheumatism | ⑦ Asthma, obesity, Graves' disease, allergies |

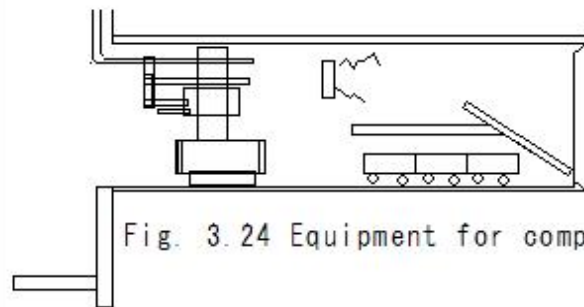
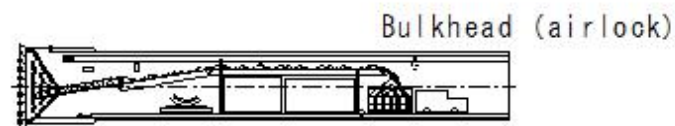
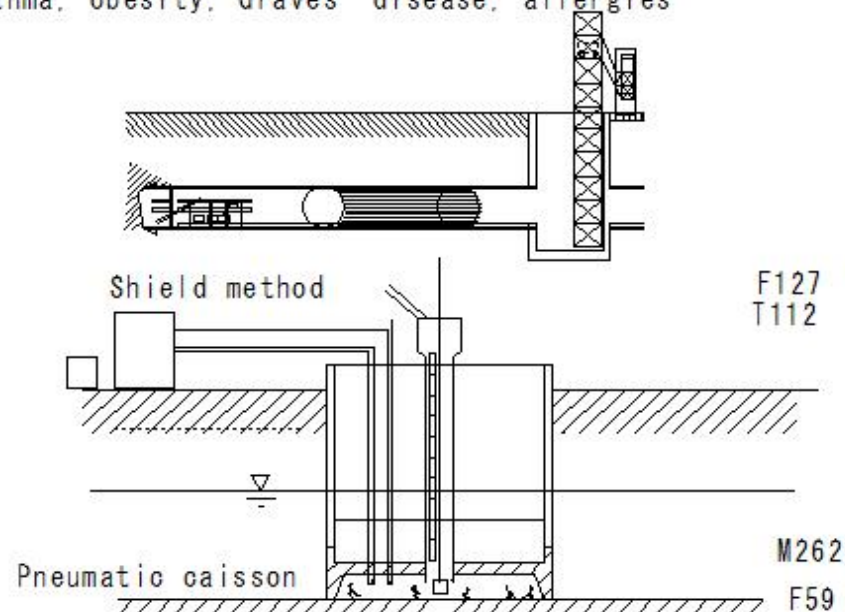


Fig. 3.24 Equipment for compressed air work S141



Air pressure shield tunneling T157



(S1162) Diving

(S1162) Diving

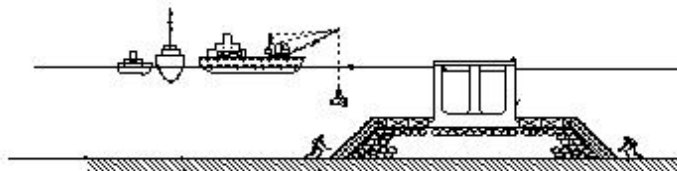
Diving safety

High Pressure Regulations Article 1-2、20-9

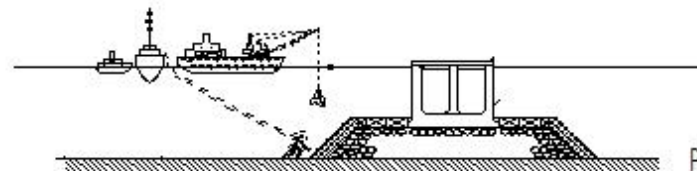
Diving methods

- ① Scuba: Diving with a compressed air tank
- ② Hookah: Air is pumped from above the water with a compressor
- ③ Helmet: Air is pumped from the compressor through a hose to the helmet and diving suit

① Scuba



② Hookah
③ Helmet



P185
P22

(S1163) Diving

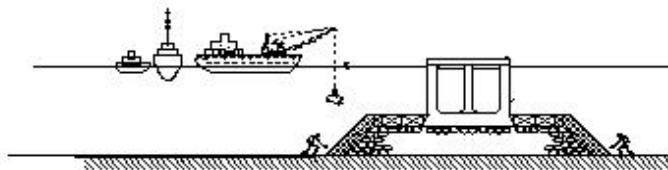
(S1163) Diving

Diving safety

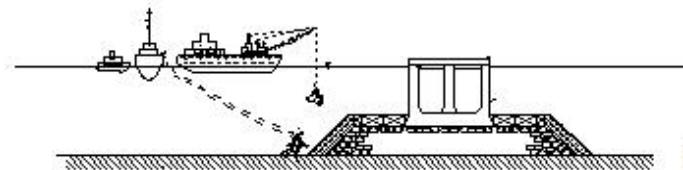
High Pressure Act Article 8 (Air Tank)

- ① The air pressure in the spare air tank must always be at least 1.5 times the pressure at the maximum diving depth.
- ② The capacity of the spare air tank must be at least the value calculated using the method specified by the Minister of Health, Labor and Welfare.
- ③ Spare cylinder (a cylinder that stores the air needed in case of an accident)

① Scuba



② Hookah
③ Helmet



P185
P22

(S1164) Diving

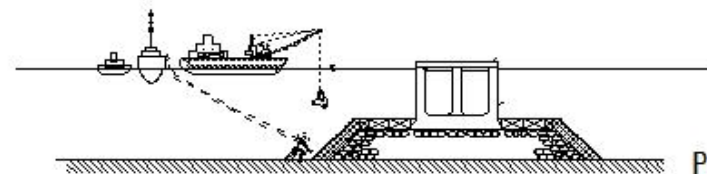
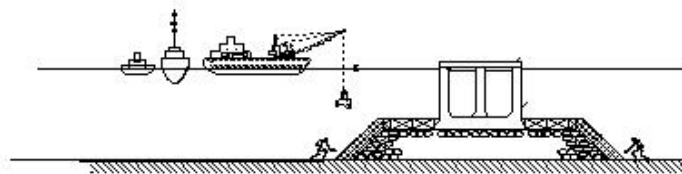
(S1164) Diving

Diving safety

High pressure regulations, Article 9

(Air purifier, pressure gauge and flow meter)

- ① In case of air is supplied to diving personnel by an air compressor
- ② In addition to a device for purifying the air to be supplied
- ③ In case of using a pressure regulator, a pressure gauge for measuring the supply pressure
- ④ A flow meter for measuring the amount of air supplied must be provided.



P185
P22

(S1165) Diving

(S1165) Diving

Diving safety

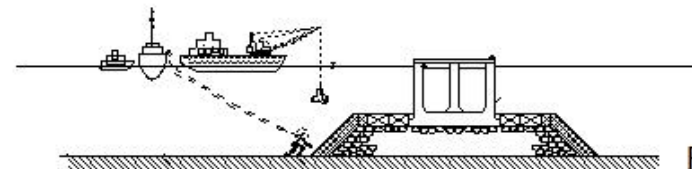
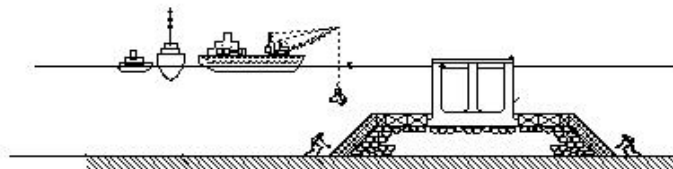
High pressure regulations, Article 12

(Diver) Diver license - Diving work

High pressure regulations, Article 11

(Special training)

- ① Work to operate an air compressor
- ② Work to operate a valve or cock to adjust the air supply to the work room
- ③ Work to operate a valve or cock to adjust the air supply to the air chamber
or the exhaust from the air chamber
- ④ Work to operate a valve or cock to adjust the air supply to the diver
- ⑤ Work to operate the recompression chamber
- ⑥ Work inside the high pressure room



P185
P22

(S1166) Diving

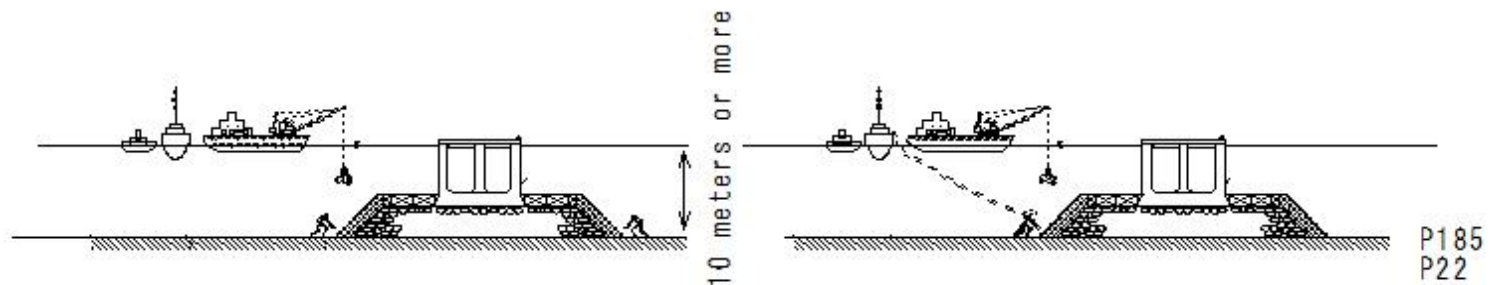
(S1166) Diving

Diving safety

High pressure regulations, Article 27

(Mutatis mutandis application of work plans, etc.)

① Diving work (limited to diving work at depths of 10 meters or more)



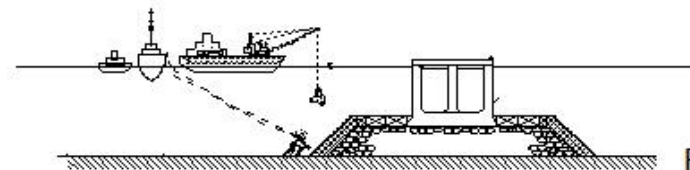
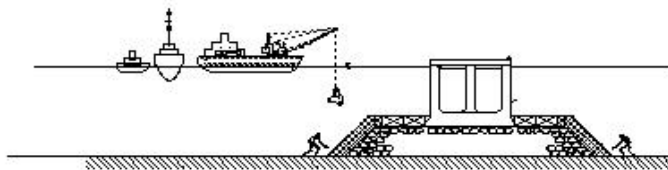
(S1167) Diving

(S1167) Diving

Diving safety

High pressure regulations Article 12, Paragraph 2

- ① Work in a high pressure room or diving
- ② Establish a work plan and inform workers of the plan
- ③ Keep the partial pressure of breathing gases oxygen, nitrogen, and carbon dioxide within range



P185
P22

(S1168) Diving

(S1168) Diving

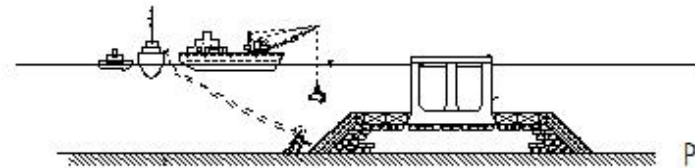
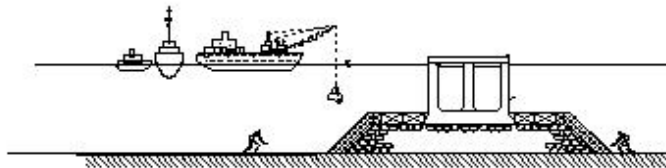
Diving safety

High pressure regulations. Article 15

(Limits on partial gas pressure)

Oxygen, nitrogen or carbon dioxide

- ① Oxygen: 18 kilopascals to 160 kilopascals
- ② Nitrogen: 400 kilopascals or less
- ③ Carbon dioxide: 0.5 kilopascals or less



P185
P22

(S1169) Diving

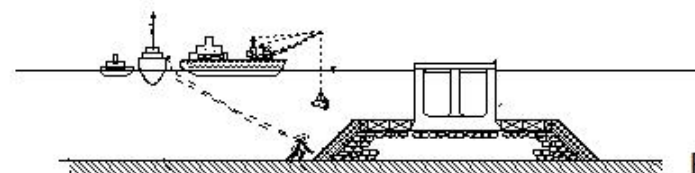
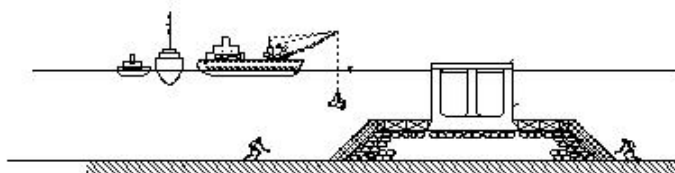
(S1169) Diving

Diving safety

High pressure regulations, Article 16

(Limits on oxygen exposure)

- ① Take care to ensure that oxygen exposure does not exceed the specified value by supplying air to the work room or gas chamber.



P185
P22

(S1170) Diving

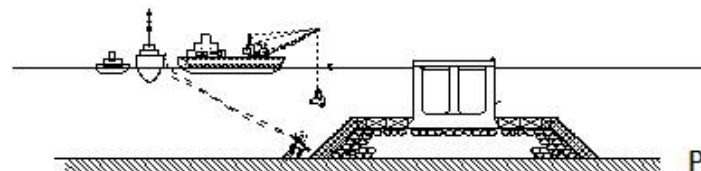
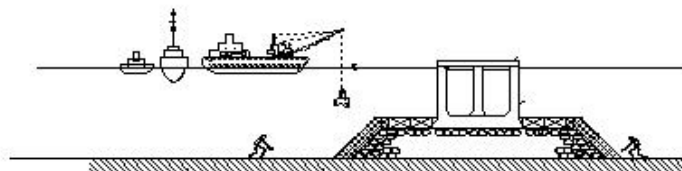
(S1170) Diving

Diving safety

High Pressure Regulations Article 18

(Speed of Decompression, etc.)

- ① The speed of decompression must be 0.08 megapascals per minute or less.
- ② After completing decompression, you must not engage in heavy work for 14 hours.



P185
P22

(S1171) Diving

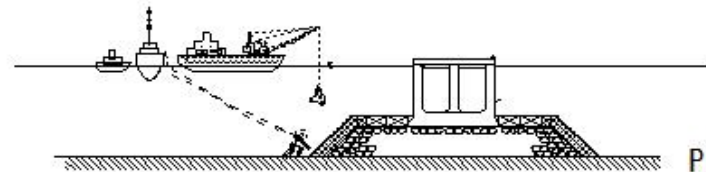
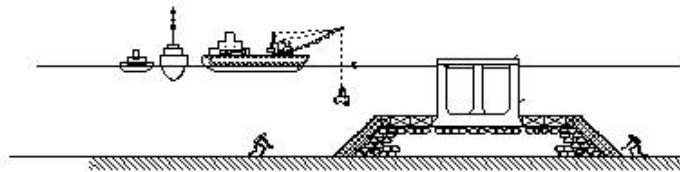
(S1171) Diving

Diving safety

High pressure regulations Article 20-2

(Records of work conditions, etc.)

- ① High pressure indoor work – Documents containing records, names of indoor workers, and the date and time of decompression must be prepared and kept for five years.



P185
P22

(S1172) Diving

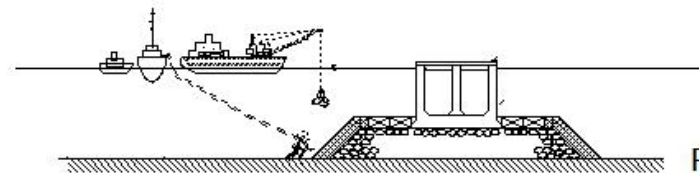
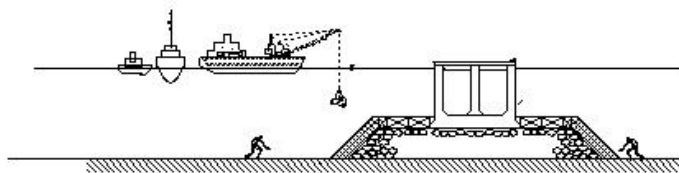
(S1172) Diving

Diving safety

High pressure law Article 28

(Air supply volume and supply pressure)

- ① In case of supplying air to diving workers using an air compressor or hand pump, the supply volume must be at least 60 liters per minute.
- ② Use a pressure regulator and an air compressor capable of supplying at least 40 liters per minute, and the supply pressure must be at least the pressure at that depth plus 0.7 megapascals.



P185
P22

(S1173) Diving

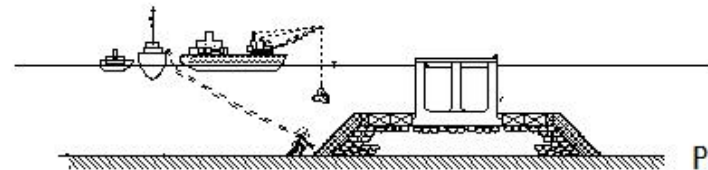
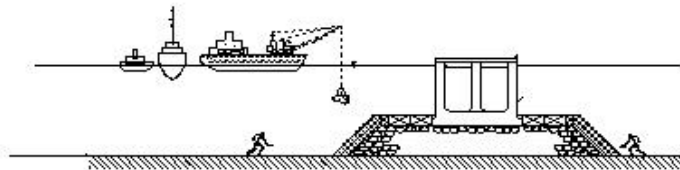
(S1173) Diving

Diving safety

High pressure regulations, Article 29

(Diving work using air supplied from a cylinder)

- ① Inform the cylinder's air supply capacity.
- ② Have a supervisor stationed.



P185
P22

(S1174) Diving

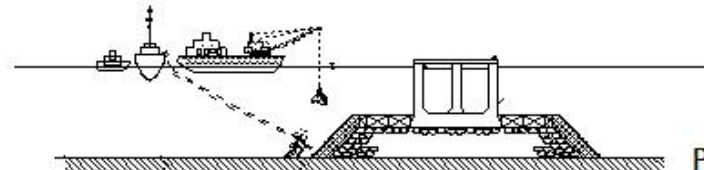
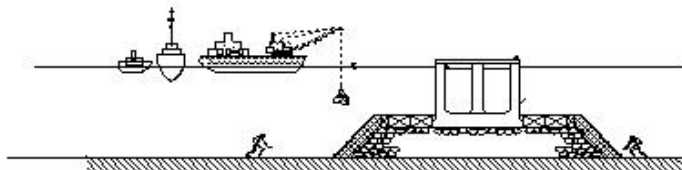
(S1174) Diving

Diving safety

High pressure regulations, Article 30

(Pressure regulator)

- ① In case of receiving air at a pressure of 1 megapascal or more
- ② Pressure regulator with two or more stages of pressure reduction



P185
P22

(S1175) Diving

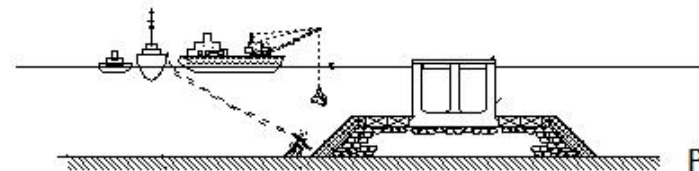
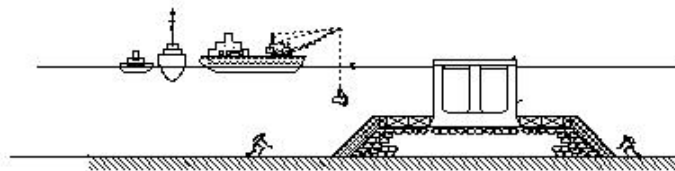
(S1175) Diving

Diving safety

High pressure regulations, Article 32

(Special provisions for surfacing, etc.)

- ① In the event of an accident, the speed of surfacing can be increased to shorten the time.
- ② After surfacing, the person can be placed in a recompression chamber.



P185
P22

(S1176) Diving

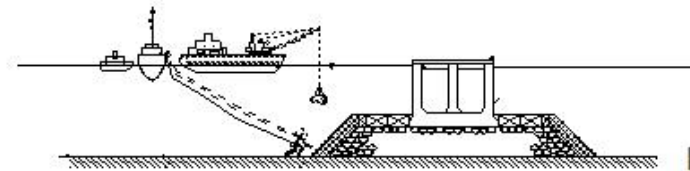
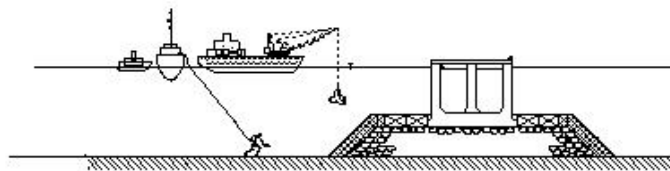
(S1176) Diving

Diving safety

High pressure regulations Article 33

(Drop line)

- ① Diving work (descent and ascent) - Equip with a drop line
- ② Attach wooden or cloth signs indicating the water depth every three meters



P185
P22

(S1177) Diving

(S1177) Diving

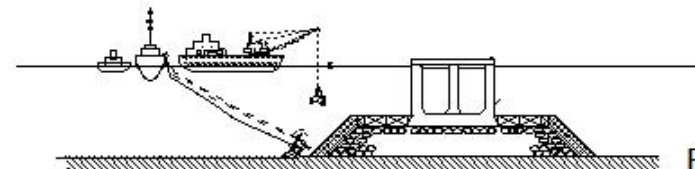
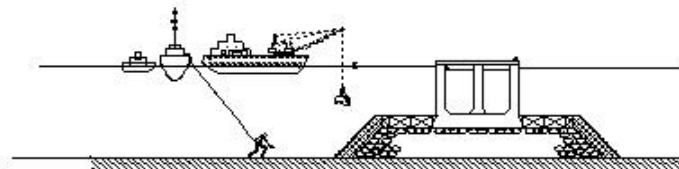
Diving safety

High pressure regulations Article 3, paragraph 1

(Inspection and repair of equipment, etc.)

○ Inspect diving equipment, repair and other necessary measures.

- ① Diving work performed by supplying air with an air compressor or hand pump: Diving equipment, air supply pipe, signal line, drop line and pressure regulator
- ② Diving work performed by receiving air from a cylinder: Diving equipment, air supply pipe, signal line, drop line and pressure regulator
- ③ Diving work performed by receiving air from a cylinder carried by the diver: Diving equipment and pressure regulator



P185
P22

(S1178) Diving

(S1178) Diving

Diving safety

High pressure regulations Article 3, paragraph 2

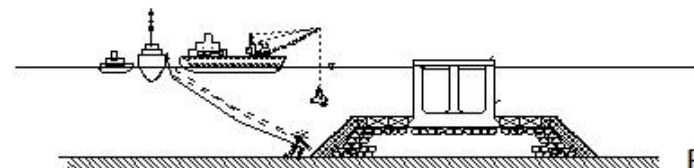
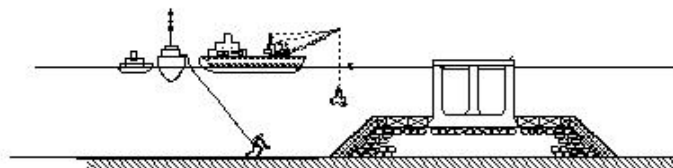
(Inspection and repair of equipment, etc.)

○ Diving work performed by supplying air using an air compressor or hand pump

- ① Air compressor or hand pump: 1 week
- ② Air purifying device: 1 month
- ③ Depth gauge: 1 month
- ④ Underwater watch: 3 months
- ⑤ Flow meter: 6 months

○ Diving work performed by receiving air from a cylinder

- ⑥ Depth gauge: 1 month
- ⑦ Underwater watch: 3 months
- ⑧ Cylinder: 6 months



P185
P22

(S1179) Diving

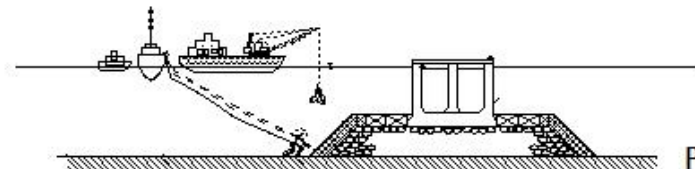
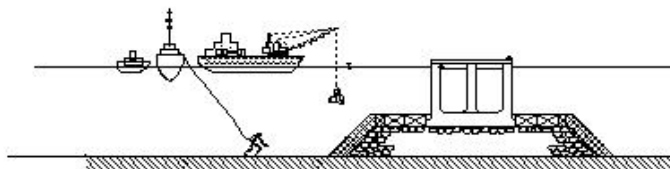
(S1179) Diving

Diving safety

High pressure regulations, Article 3, paragraph 3

(Inspection and repair of equipment, etc.)

① Inspection, repair, and measures must be recorded and kept for three years



P185
P22

(S1180) Diving

(S1180) Diving

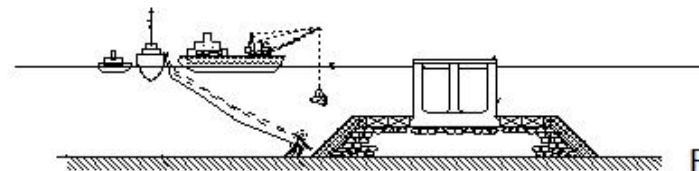
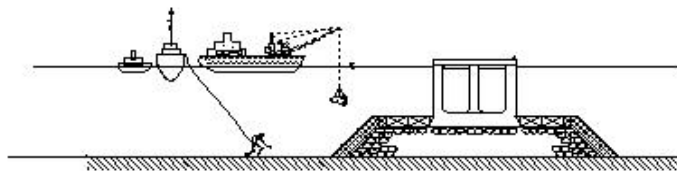
Diving safety

High Pressure Law Article 36

(Contact Officer)

○ One should be assigned for every two or less diving personnel.

- ① Contact the diving personnel and ensure that they descend and ascend properly.
- ② Supply the necessary amount of air to the diving personnel.
- ③ Promptly contact the diving personnel in the event of a breakdown in the air supply equipment or other accidents.
- ④ Check that the diving personnel's helmet is attached to the helmet stand immediately before descending.



P185
P22

(S1181) Diving

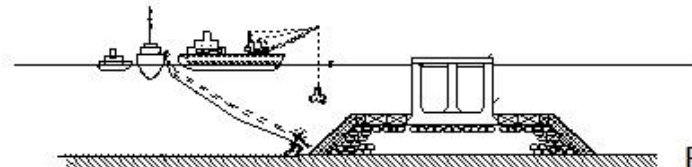
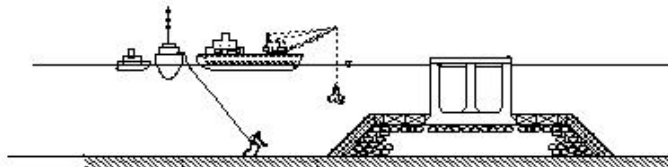
(S1181) Diving

Diving safety

Article 37 of the High Pressure Act

(Items to be carried during diving work)

- ① Diving work performed with air supplied by an air compressor or hand pump, or carrying a signal line, underwater watch, depth gauge, and sharp blades.
- ② In addition to carrying an underwater watch, depth gauge, and sharp blades, wear a life jacket or buoyancy adjustment device.



P185
P22

(S1182) Diving

(S1182) Diving

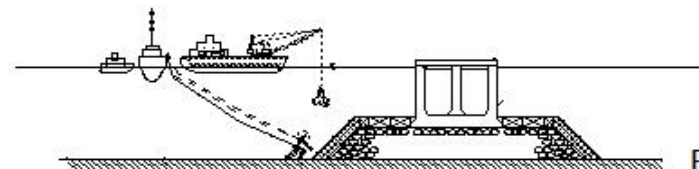
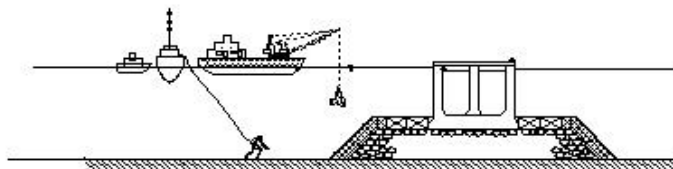
Diving safety

Article 38 of the High Pressure Act

(Medical examination)

- ① High pressure indoor work or diving work
- ② At the time of employment or transfer to the relevant work
- ③ Once every six months, regularly
- ④ Perform a medical examination

(Medical examination)



P185
P22

(S1183) Diving

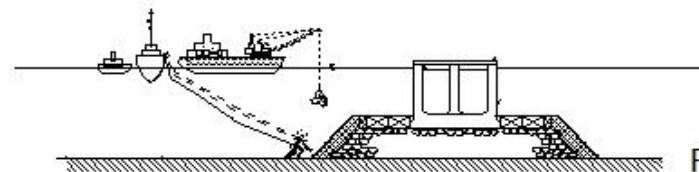
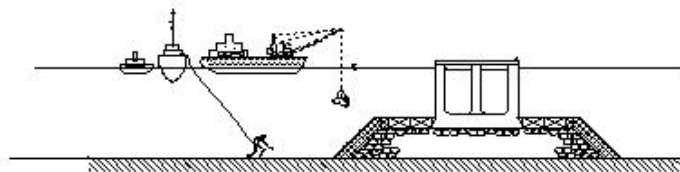
(S1183) Diving

Diving safety

Article 39 of the High Pressure Act Article 39, paragraphs 2 and 3 of the High Pressure Act
(Results of medical examination)

- ① Medical examination
- ② Within 3 months
- ③ High pressure work medical examination individual record
- ④ Retain for 5 years

(Results of medical examination)



P185
P22

(S1184) Bridges

(S1184) Bridges

Safety work for bridge erection, etc.

Steel bridges

Article 517-8 of the Safety and Health Regulations

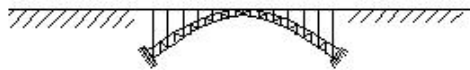
(Appointment of a work supervisor for steel bridge erection, etc.)

Work supervisor for steel bridge erection, etc.

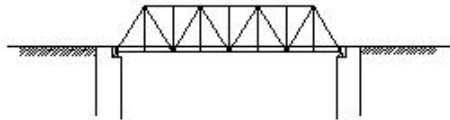
Completed the skills training course for work supervisor for steel bridge erection, etc.

Steel bridges

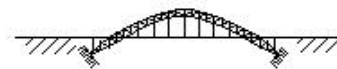
deck bridge



through bridge



half-through bridge



(S1185) Bridges

(S1185) Bridges

Safety work for bridge erection, etc.

Steel bridges

Article 517-9 of the Safety and Health Regulations

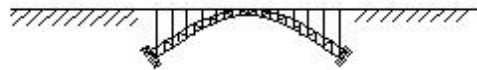
(Duties of the Work Supervisor for Steel Bridge Construction, etc.)

- ① Determine the work method and worker placement, and directly supervise the work.
- ② Check the functionality of equipment, tools, fall prevention equipment with required performance, and protective helmets, and remove defective items.
- ③ Monitor the use of fall prevention equipment with required performance, and protective helmets.

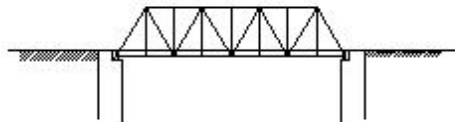
Steel bridges

Work Supervisor for Steel Bridge Construction

deck bridge



through bridge



half-through bridge



(S1186) Bridges

(S1186) Bridges

Safety work for bridge erection, etc.

Steel bridges

Article 517-6 of the Safety and Health Regulations
(Work plan)

- ① Method and sequence of work
- ② Method to prevent falling or collapsing components
- ③ Method of installing equipment to prevent danger from falling
- ④ Type and capacity of machines, etc. to be used
- ⑤ Inform relevant workers.

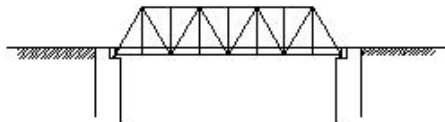
Steel bridges

(Work plan)

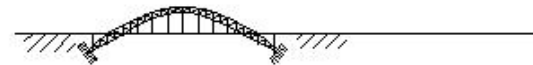
deck bridge



through bridge



half-through bridge



(S1187) Bridges

(S1187) Bridges

Safety work for bridge erection, etc.

Steel bridges

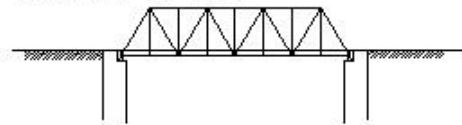
Article 517-7 of the Safety and Health Regulations
(Work for steel bridge construction, etc.)

- ① Prohibit workers other than those involved from entering the area where work is being carried out
- ② In case of danger to the work is expected due to bad weather such as strong winds, heavy rain, or heavy snow, suspend the work.
- ③ In case of raising or lowering materials, equipment, tools, etc., have workers use slings, slings, etc.
- ④ Take measures such as setting up braces and installing reinforcing materials to prevent buckling or deformation of materials or construction equipment.

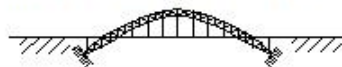
deck bridge



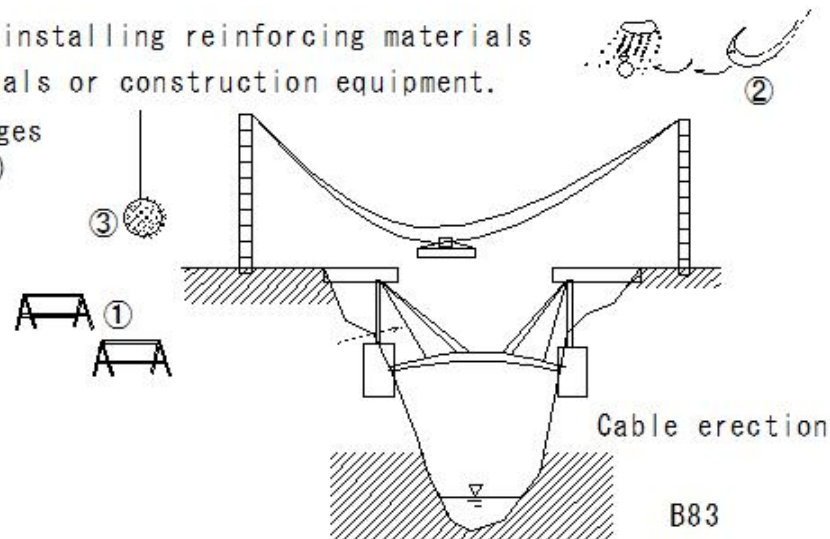
through bridge



half-through bridge



Steel bridges
(Work plan)



B136

(S1188) Bridges

(S1188) Bridges

Safety work for bridge erection, etc.

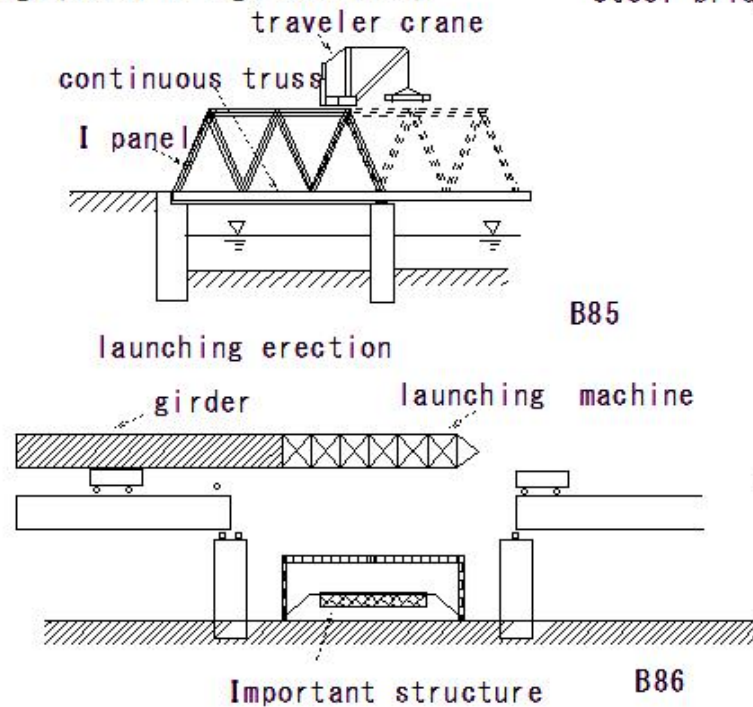
Steel bridges

Article 517-10 of the Safety and Health Regulations

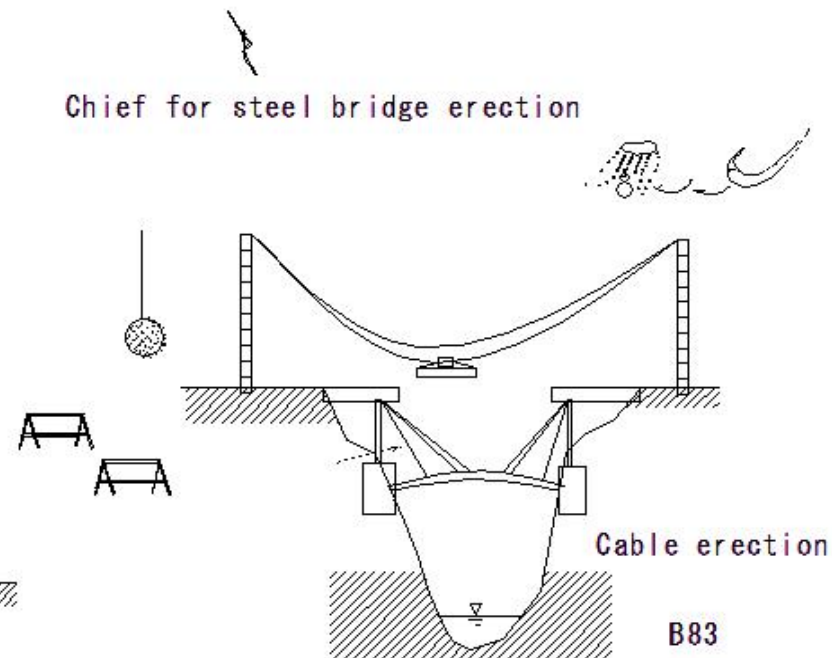
(Appointment of the work chief for steel bridge erection, etc.)

Bridge (Steel bridge erection)

Steel bridges



Chief for steel bridge erection



(S1189) Bridges

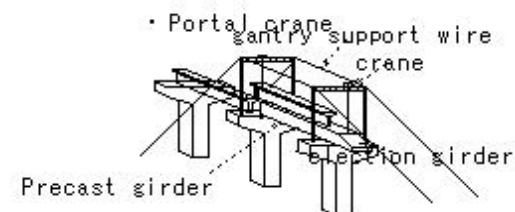
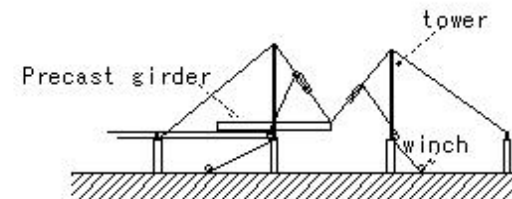
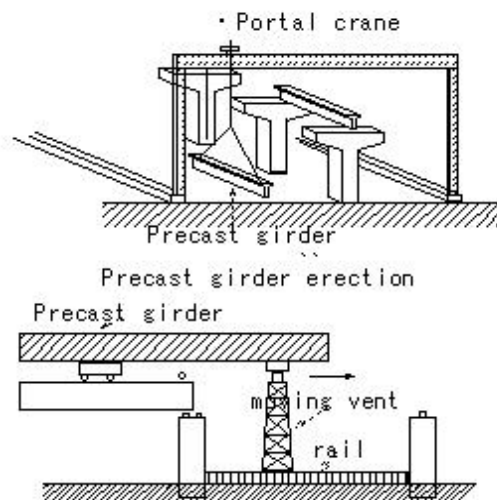
(S1189) Bridges

Safety work for bridge construction, etc.

Concrete bridges

Article 517-22 of the Safety and Health Regulations

(Appointment of work chief for concrete bridge construction, etc.)



(S1190) Bridges

(S1190) Bridges

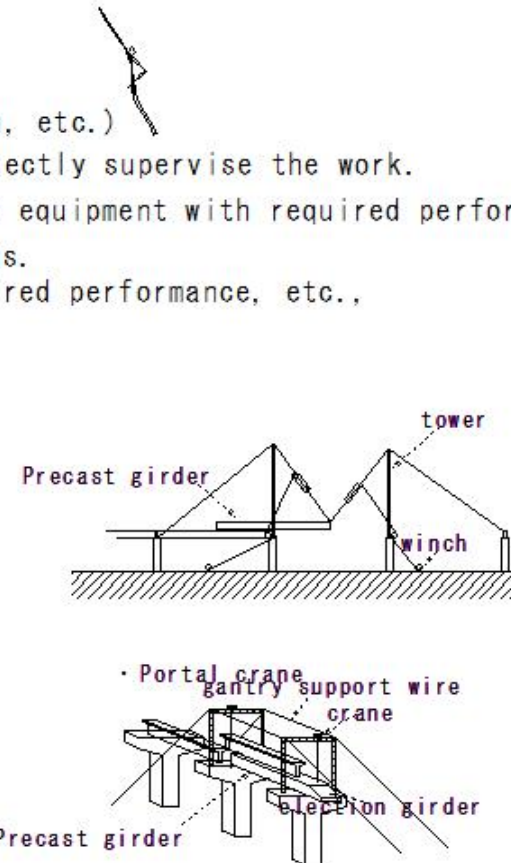
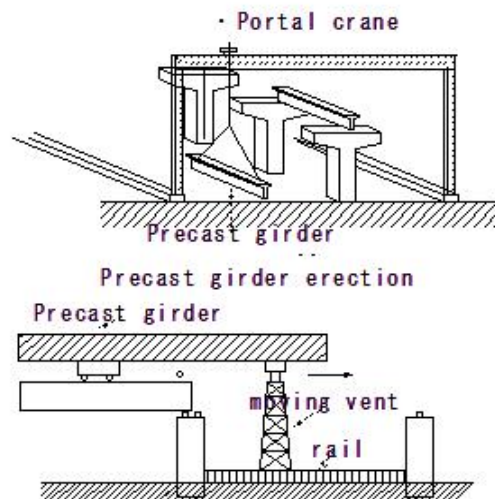
Safety work for bridge construction, etc.

Concrete bridges

Article 517-23 of the Safety and Health Regulations

(Duties of the work chief for concrete bridge construction, etc.)

- ① Determine the work method and worker placement, and directly supervise the work.
- ② Check the function of equipment, tools, fall prevention equipment with required performance, etc., and protective helmets, and remove defective items.
- ③ Monitor the use of fall prevention equipment with required performance, etc., and protective helmets.



B117

(S1191) Bridges

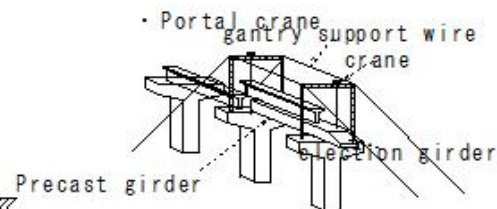
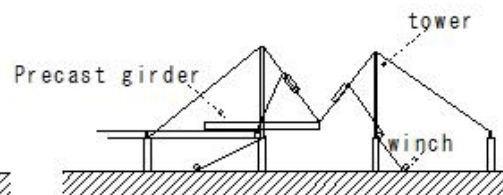
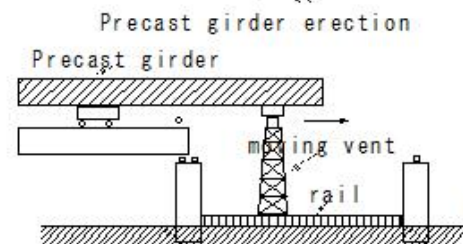
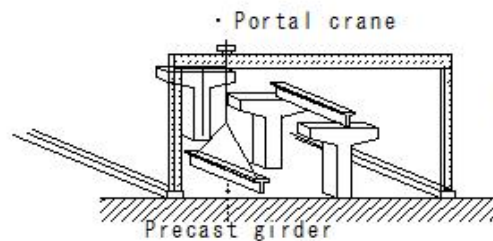
(S1191) Bridges

Safety work for bridge construction, etc.

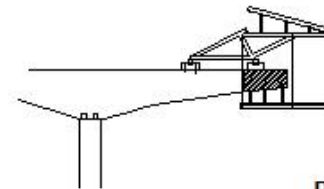
Concrete bridges

Article 517-20 of the Safety and Health Regulations
(Work plan)

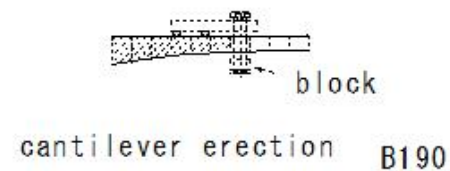
- ① Method and sequence of work
- ② Method to prevent falling or collapsing components
- ③ Method of installing equipment to prevent workers from falling
- ④ Type and capacity of machines, etc. to be used



B117



B120



B190

(S1192) Bridges

(S1192) Bridges

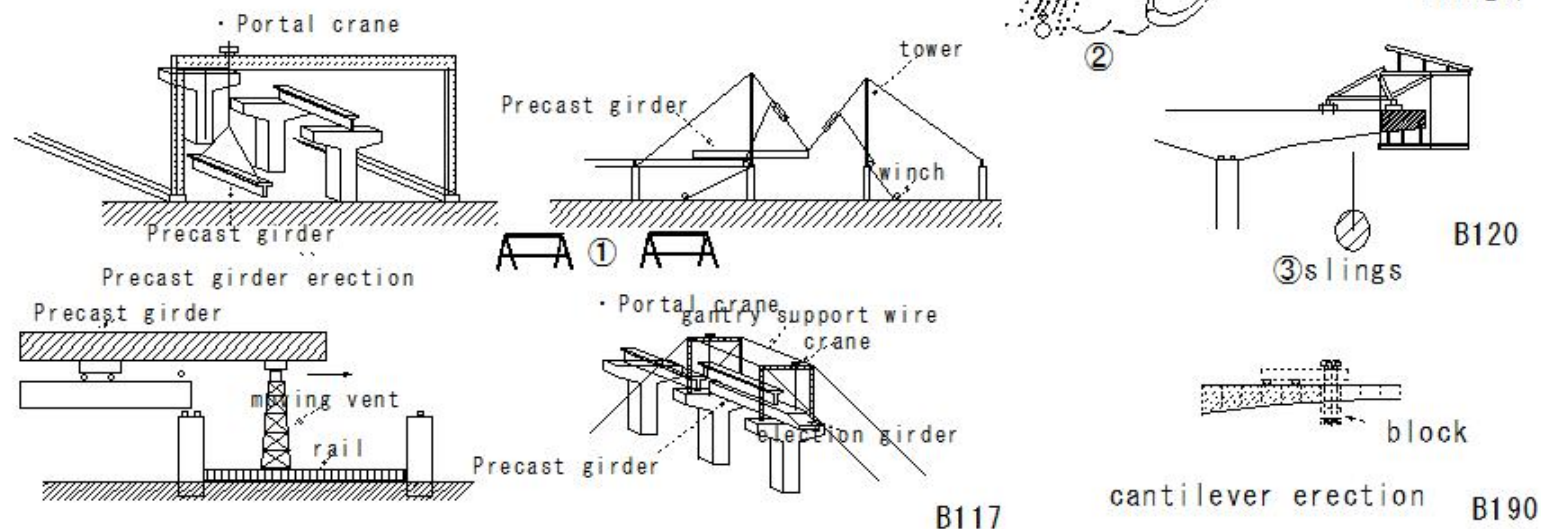
Safety work for bridge construction, etc.

Concrete bridges

Article 517-21 of the Safety and Health Ordinance

(Concrete bridge construction, etc.)

- ① Prohibit workers other than those involved from entering the area where the work is to be carried out.
- ② In case of it is expected that the work will be dangerous due to bad weather such as strong winds, heavy rain, or heavy snow, the said work must be stopped.
- ③ In case of raising or lowering materials, equipment, tools, etc., have workers use slings, slings, etc.



(S1193) Bridges

(S1193) Bridges

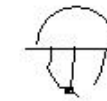
Safety work for bridge construction, etc.

Concrete bridges

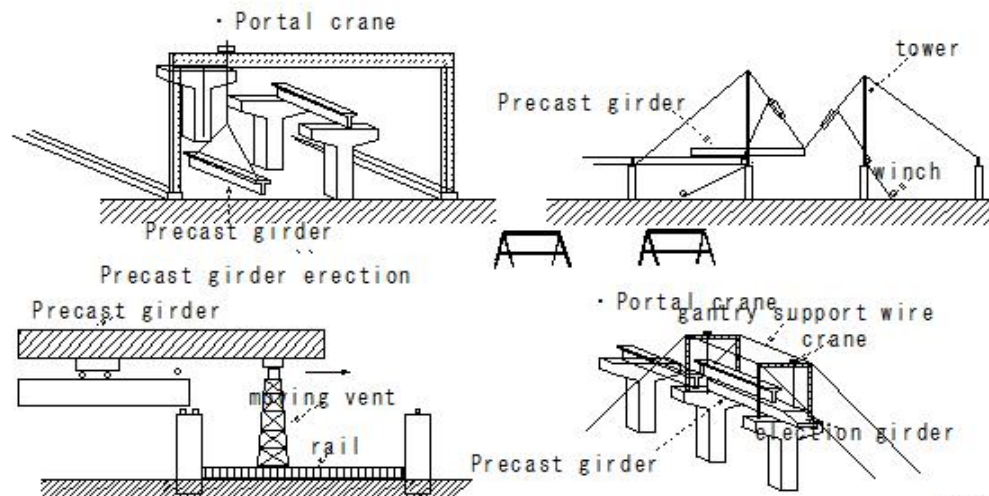
Safety and Health Regulations Article 517-24

(Wearing protective helmets)

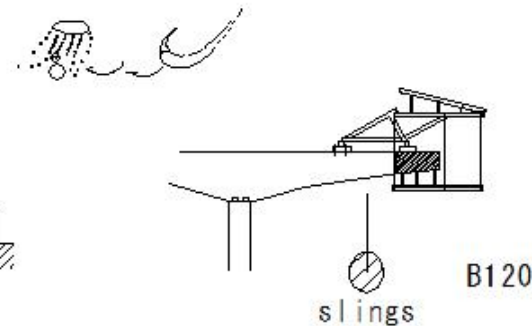
① Workers must wear protective helmets.



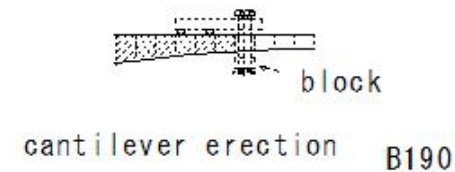
① safety helmets



B117



B120



B190

(S1194) Bridges

(S1194) Bridges

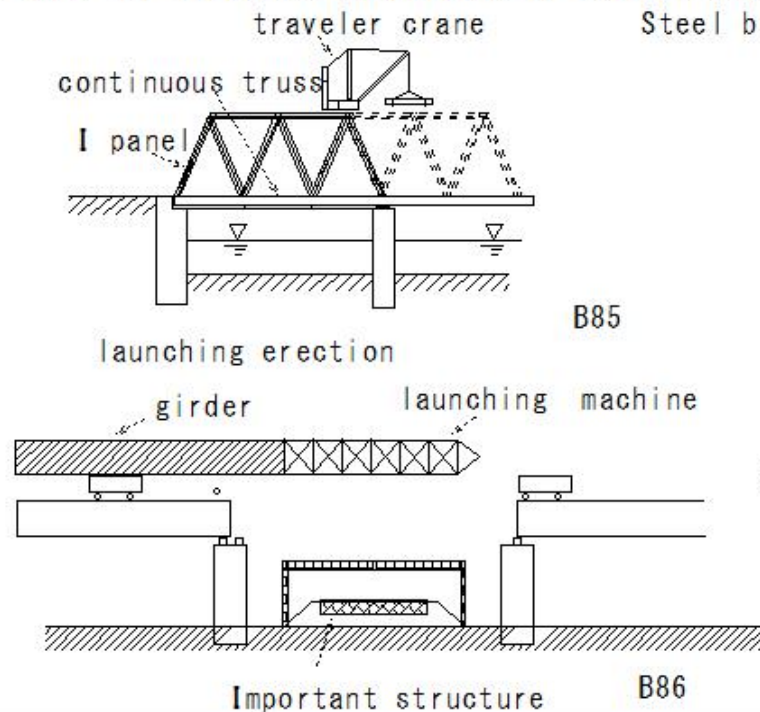
Safety work for bridge erection, etc.

Steel bridges

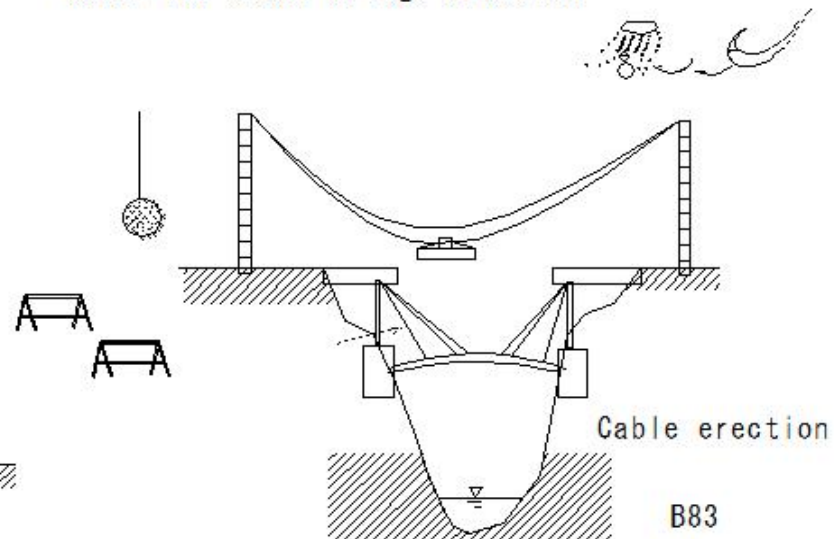
Article 6 of the Safety and Health Order (item 15-3)

(Work for which a work chief should be appointed)

- ① Bridges over 5 meters in height
- ② Work for erection, demolition or modification with a span of 30 meters or more



Chief for steel bridge erection



(S1195) Bridges

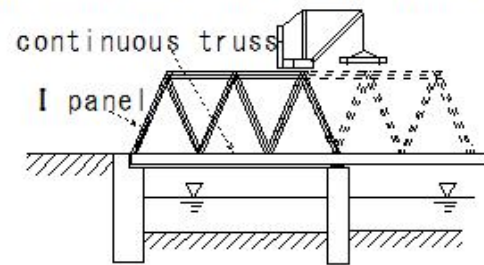
(S1195) Bridges

Safety work for bridge erection, etc.

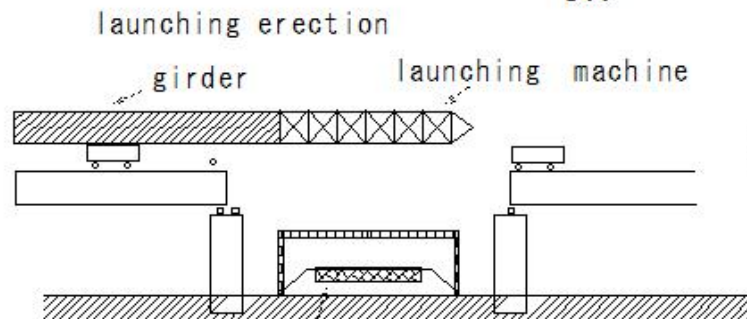
Steel bridges

Article 517-7-4 of the Safety and Health Regulations
(Work for steel bridge construction, etc.)

- ① Prohibit entry of workers other than those involved.
- ② Stop the work in question in bad weather such as strong winds, heavy rain, heavy snow, etc.
- ③ Use slings, slings, etc. when raising or lowering materials, equipment, tools, etc.

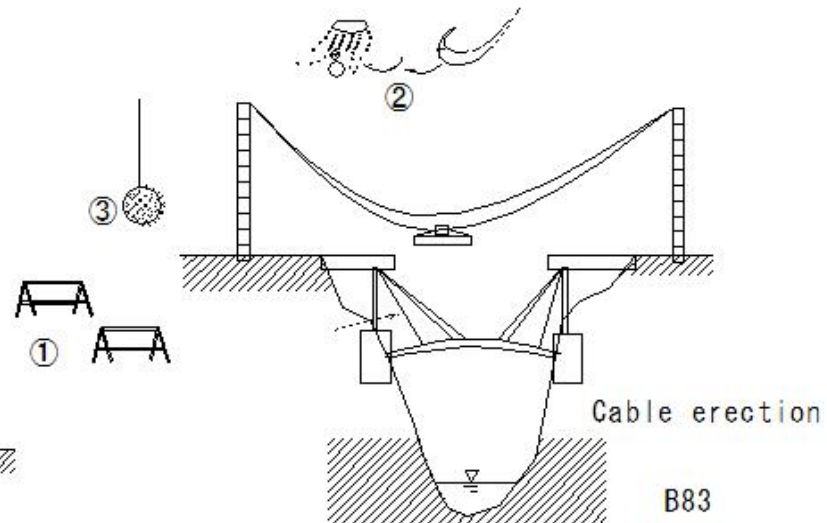


B85



Important structure

B86



B83

(S1196) Bridges

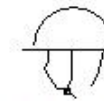
(S1196) Bridges

Safety work for bridge construction, etc.

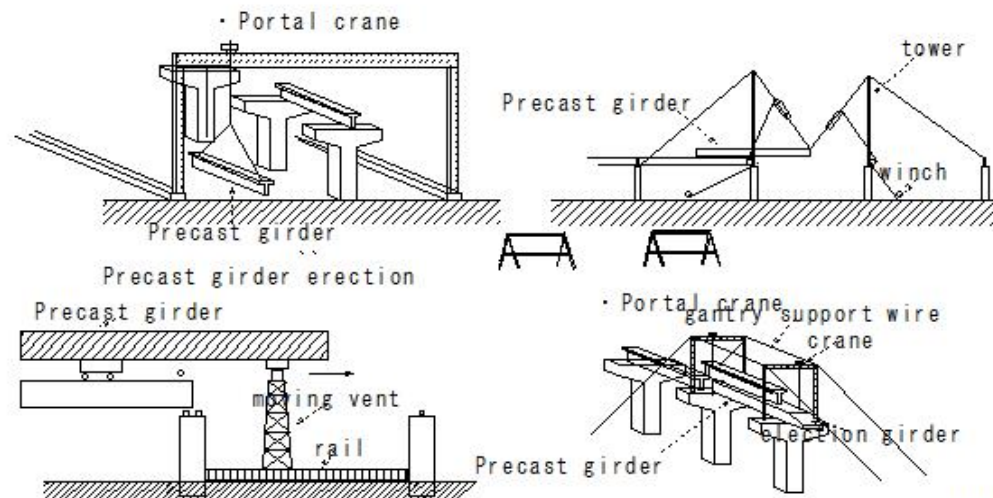
Concrete bridges

Article 6 (No. 16) of the Safety and Health Order
(Work for which a work chief should be appointed)

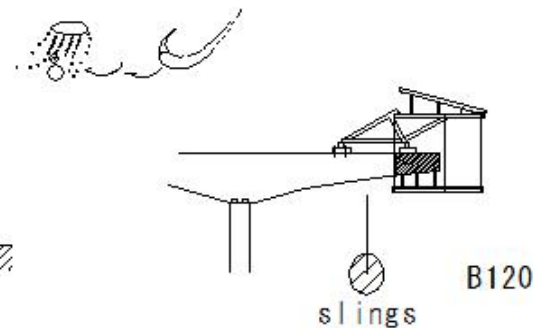
- ① Bridge superstructure: Height 5 meters or more
- ② Bridge span 30 meters or more



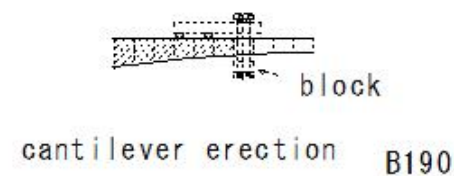
safety helmets



B117



B120



B190

(S1197) Bridges

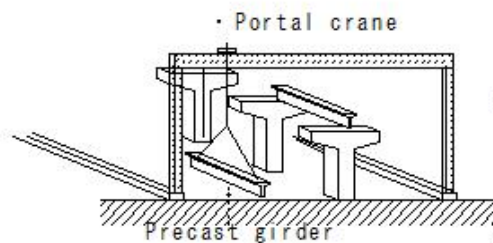
(S1197) Bridges

Safety work for bridge construction, etc.

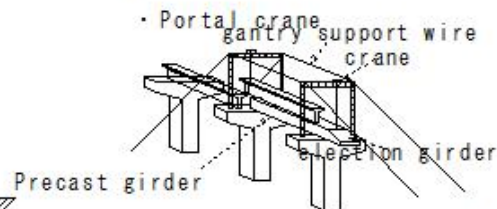
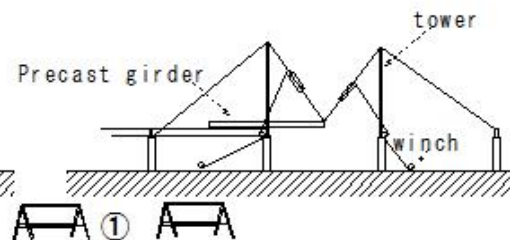
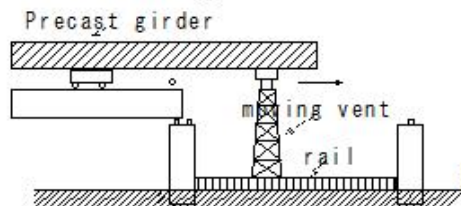
Concrete bridges

Article 517-21-4 of the Safety and Health Regulations
(Work for concrete bridge construction, etc.)

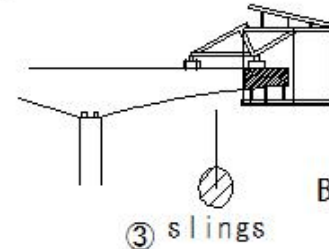
- ① Prohibit entry of workers other than those involved.
- ② Stop work in bad weather such as strong winds, heavy rain, heavy snow, etc.
- ③ Use slings, slings, etc. when raising or lowering materials, equipment, tools, etc.



Precast girder erection



B117



safety helmets



cantilever erection B190

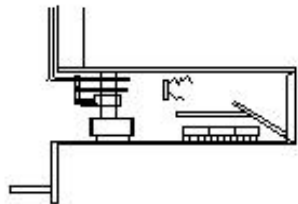
(S1198) Oxygen Deficiency

(S1198) Oxygen Deficiency

Prevention of oxygen deficiency, etc.

Oxygen deficiency law, Article 2

- ① Oxygen deficiency: The concentration of oxygen in the air is less than 18 percent.
- ② Oxygen deficiency, etc. A state in which the concentration of hydrogen sulfide in the air exceeds 10 parts per million.
- ③ Oxygen deficiency: Symptoms caused by inhaling oxygen-deficient air.
- ④ Hydrogen sulfide poisoning: The concentration of hydrogen sulfide exceeds 10 parts per million.
- ⑤ Oxygen deficiency, etc.: Oxygen deficiency or hydrogen sulfide poisoning.
- ⑥ Oxygen deficiency hazardous work Oxygen deficiency hazardous place Industrial Safety and Health Act Enforcement Order
- ⑦ Type 1 oxygen deficiency hazardous work Oxygen deficiency hazardous work.
- ⑧ Oxygen deficiency hazardous place: Oxygen deficiency, hydrogen sulfide poisoning



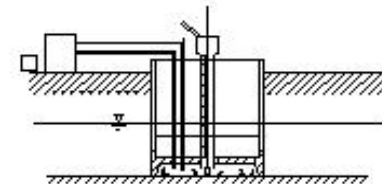
S141



T157



T112
F127



M262
F59

(S1199) Oxygen Deficiency

(S1199) Oxygen Deficiency

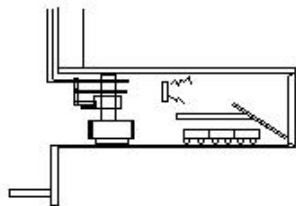
Prevention of oxygen deficiency, etc.

Article 6, item 21 of the Industrial Safety and Health Regulations

Article 2, items 7 and 8 of the Oxygen Deficiency Regulations

Differences between type 1 and type 2 work

- ① Type 1 is work in places where there is a risk of oxygen deficiency
- ② Type 2 is work in places where there is a risk of both oxygen deficiency and hydrogen sulfide poisoning
- ③ Examples of type 2 oxygen deficiency hazard work: work in manholes, groundwater construction, work in basements, work in pits.



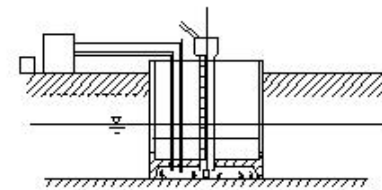
S141



T157



T112
F127



M262
F59

(S1200) Oxygen Deficiency

(S1200) Oxygen Deficiency

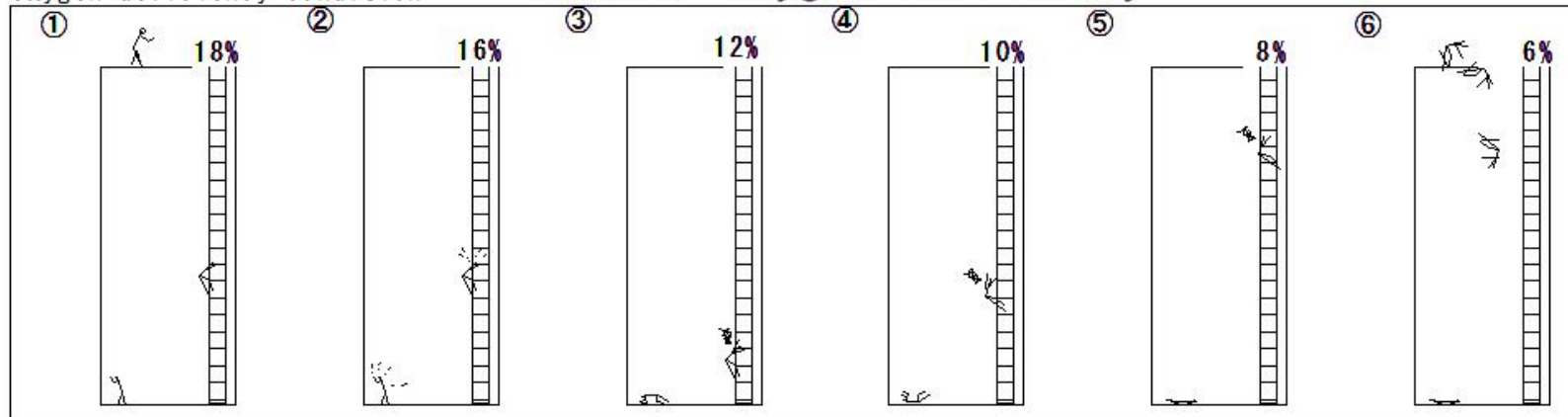
Prevention of oxygen deficiency, etc.

Oxygen deficiency condition

①	②	③	④	⑤	⑥
18%	16%	12%	10%	8%	6%
① Safety limit	② Increased respiration and	③ Dizziness, nausea	④ Pale face	⑤ Fainting	⑥ Instantaneous fainting
Continuous ventilation required	Headache, nausea	Weakened muscles, inability to support weight, loss of consciousness	Unconscious Vomiting	Death within 7-8 minutes	Respiration stopped Convulsions, death within 6 minutes

Oxygen deficiency condition

(S1200) Oxygen Deficiency



(S1201) Oxygen Deficiency

(S1201) Oxygen Deficiency

Prevention of oxygen deficiency, etc.

Oxygen deficiency conditions

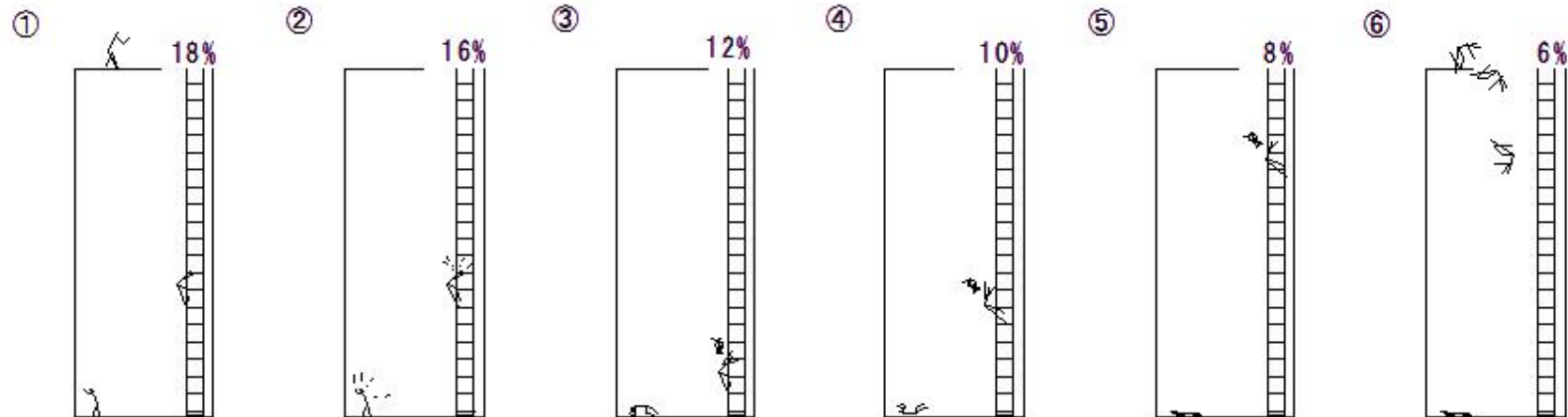
Article 11 of the Oxygen Deficiency Act

Regulations for preventing oxygen deficiency, etc.

(Work supervisor)

- ① Work supervisor responsible for oxygen deficiency: Determines the work method and directs workers
- ② Measures the oxygen concentration before starting work that day

Oxygen deficiency condition



(S1202) Oxygen Deficiency

(S1202) Oxygen Deficiency

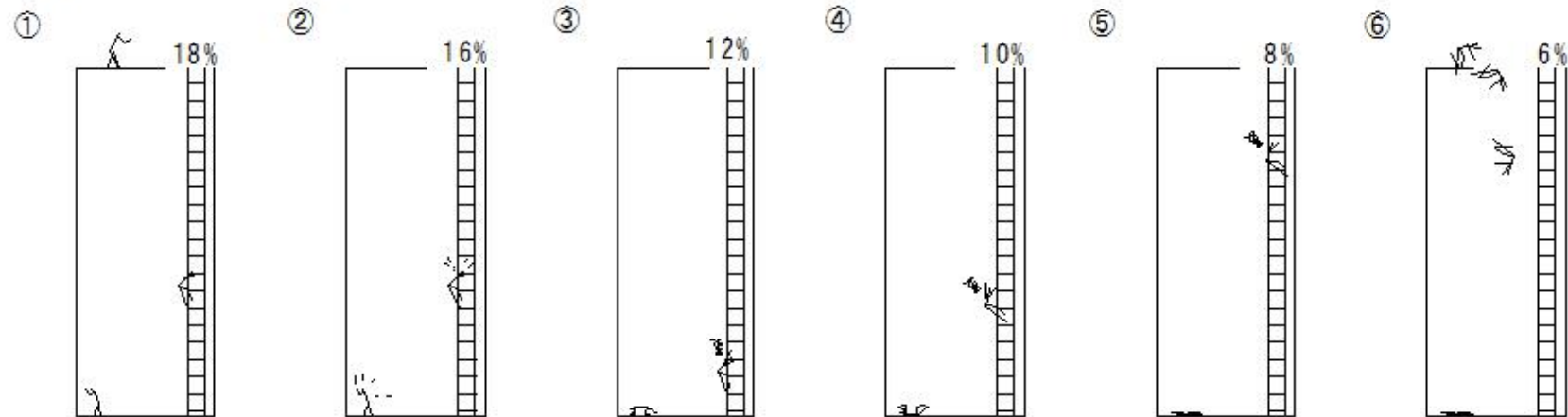
Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 12

○Special training regulations for dangerous work due to oxygen deficiency

- ① Causes of oxygen deficiency
- ② Symptoms of oxygen deficiency
- ③ Dangers of oxygen deficiency Main symptoms of oxygen deficiency
- ④ Evacuation and emergency rescue methods in case of accident

Oxygen deficiency condition



(S1203) Oxygen Deficiency

(S1203) Oxygen Deficiency

Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 3

○ Before starting work

○ Measure the concentration of oxygen and hydrogen sulfide in the air

① Safety limit : Continuous ventilation required

② Increased respiration and pulse rate : Headache, nausea

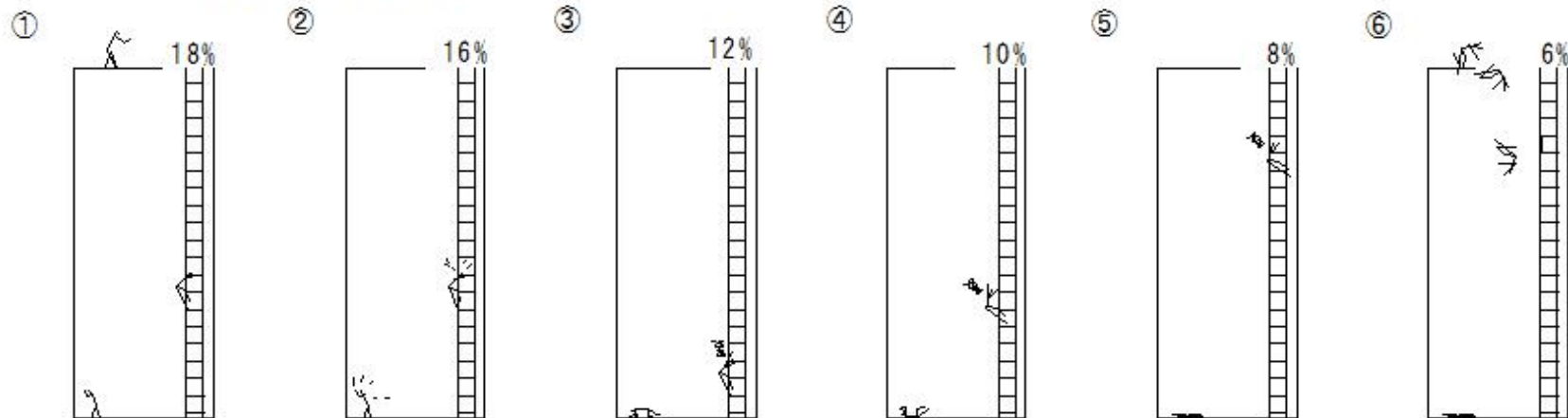
③ Dizziness, nausea : Weakened muscles, inability to support weight, loss of consciousness

④ Pale face : Unconscious, Vomiting

⑤ Fainting : Death within 7-8 minutes

⑥ Instantaneous fainting : Respiration stopped : Convulsions, death within 6 minutes

Oxygen deficiency condition



(S1204) Oxygen Deficiency

(S1204) Oxygen Deficiency

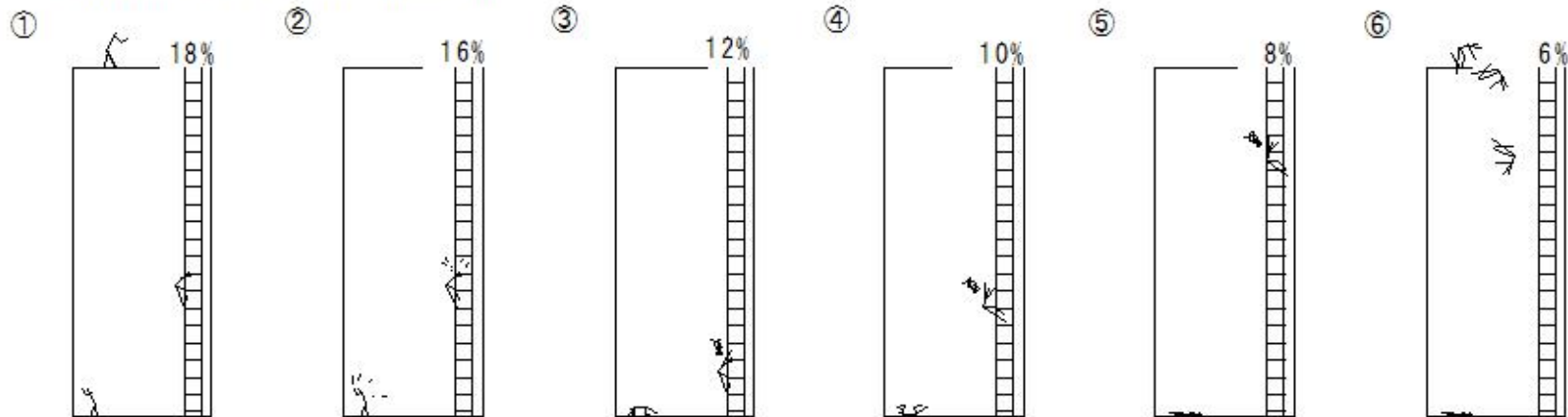
Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 4 Equipment of measuring equipment

○ Dangerous work due to oxygen deficiency

○ Equipment of measuring equipment

- ① Safety limit: Continuous ventilation required
 - ② Increased respiration and pulse rate: Headache, nausea
 - ③ Dizziness, nausea: Weakened muscles, inability to support weight, loss of consciousness
 - ④ Pale face: Unconscious, Vomiting
 - ⑤ Fainting: Death within 7-8 minutes
 - ⑥ Instantaneous fainting: Respiration stopped: Convulsions, death within 6 minutes
- Oxygen deficiency condition



(S1205) Oxygen Deficiency

(S1205) Oxygen Deficiency

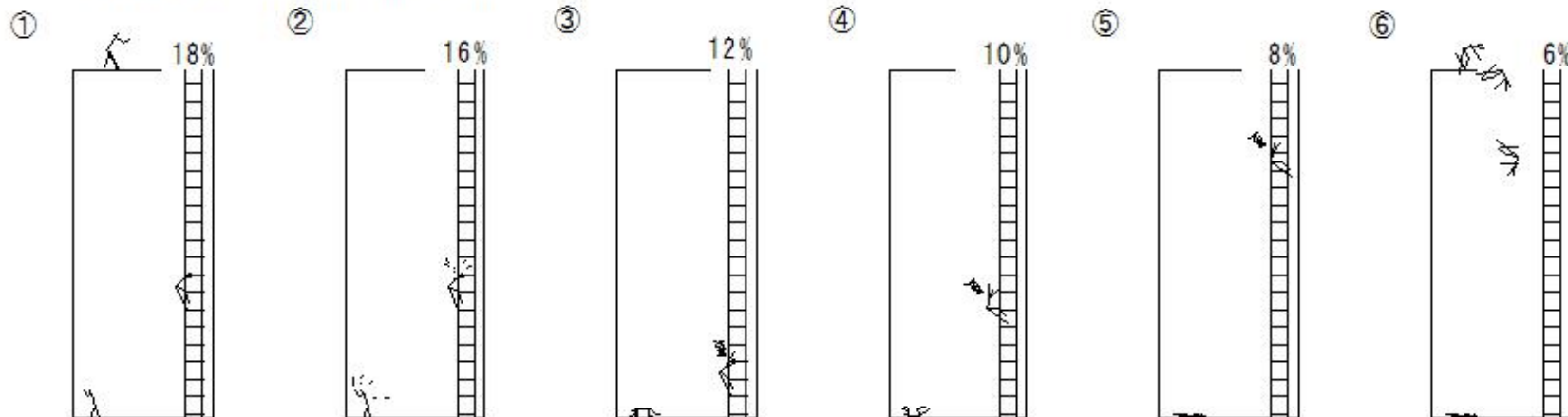
Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 5 (Ventilation)

- Keep the oxygen concentration in the air above 18 percent
- Keep the hydrogen sulfide concentration below 10 parts per million

- ① Safety limit : Continuous ventilation required
- ② Increased respiration and pulse rate : Headache, nausea
- ③ Dizziness, nausea : Weakened muscles, inability to support weight, loss of consciousness
- ④ Pale face : Unconscious, Vomiting
- ⑤ Fainting : Death within 7-8 minutes
- ⑥ Instantaneous fainting : Respiration stopped : Convulsions, death within 6 minutes

Oxygen deficiency condition



(S1206) Oxygen Deficiency

(S1206) Oxygen Deficiency

Prevention of oxygen deficiency, etc.

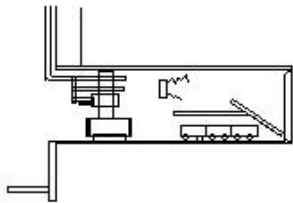
Oxygen Deficiency Law Article 7

(Inspection of protective equipment, etc.)

① Before starting work

② Respirators, etc.

③ Fall prevention equipment, etc.



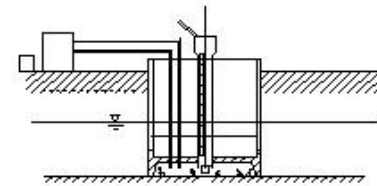
S141



T157



T112
F127



M262
F59

(S1207) Oxygen Deficiency

(S1207) Oxygen Deficiency

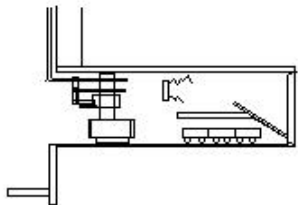
Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 8

(Personnel Inspection)

- ① Dangerous work involving oxygen deficiency.
- ② Personnel must be inspected when workers enter and leave the facility.

(Personnel Inspection)



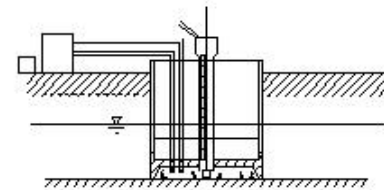
S141



T157



T112
F127



M262
F59

(S1208) Oxygen Deficiency

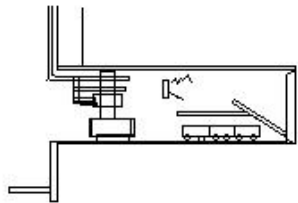
(S1208) Oxygen Deficiency

Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 10

(contact)

- ① Dangerous work due to oxygen deficiency
- ② In case of there is a risk of oxygen deficiency, etc.
- ③ Communication between the workplace



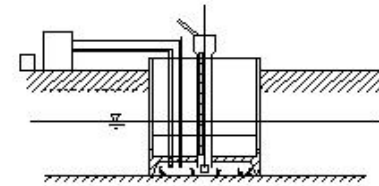
S141



T157



T112
F127



M262
F59

(S1209) Oxygen Deficiency

(S1209) Oxygen Deficiency

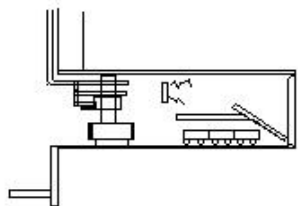
Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 13

(Supervisors, etc.)

- ① Dangerous work due to oxygen deficiency
- ② Monitor the work situation

(Supervisors, etc.)



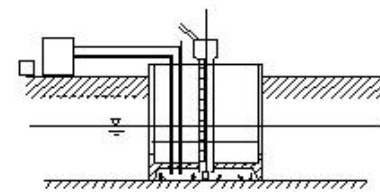
S141



T157



T112
F127



M262
F59

(S1210) Oxygen Deficiency

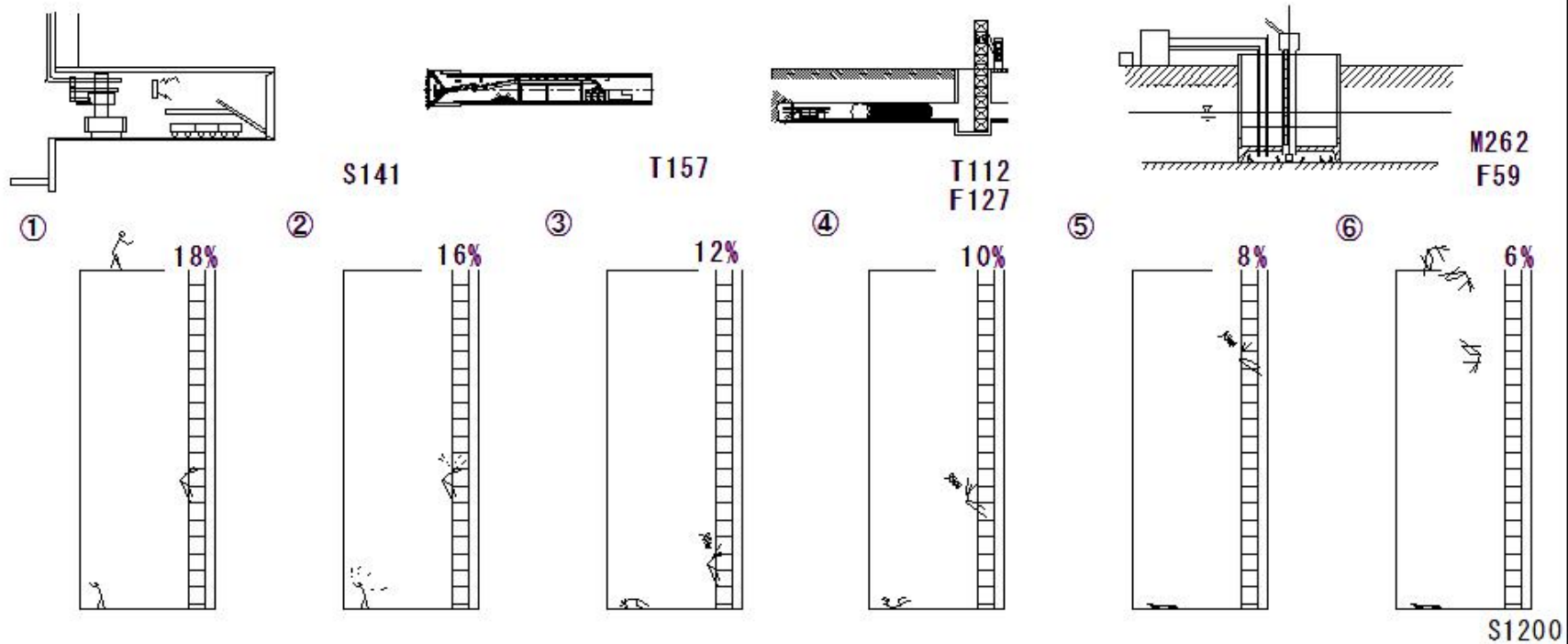
(S1210) Oxygen Deficiency

Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 14

(Evacuation)

① Oxygen deficiency, etc. ② Stop work ③ Evacuation ④ No entry sign



(S1211) Oxygen Deficiency

(S1211) Oxygen Deficiency

Prevention of oxygen deficiency, etc.

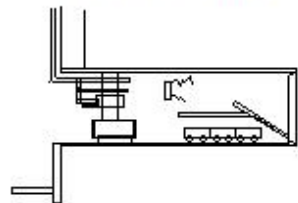
Oxygen Deficiency Law Article 15

(Evacuation equipment, etc.)

① Dangerous work due to oxygen deficiency

② Respirators, etc., ladders, fiber ropes, etc.

③ Evacuation equipment, etc.



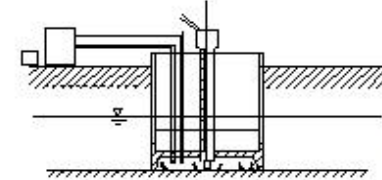
S141



T157

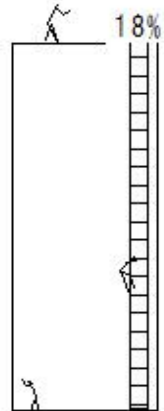


T112
F127

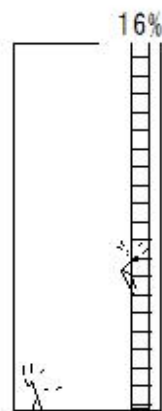


M262
F59

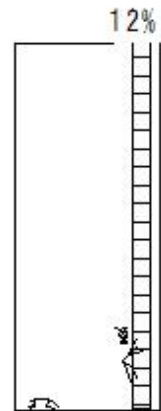
①



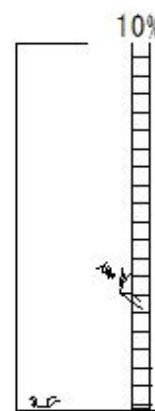
②



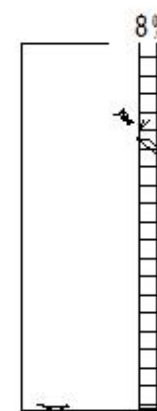
③



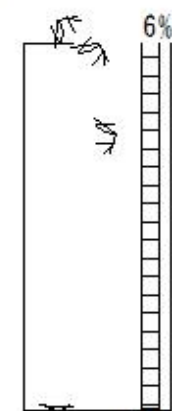
④



⑤



⑥



S1200

(S1212) Oxygen Deficiency

(S1212) Oxygen Deficiency

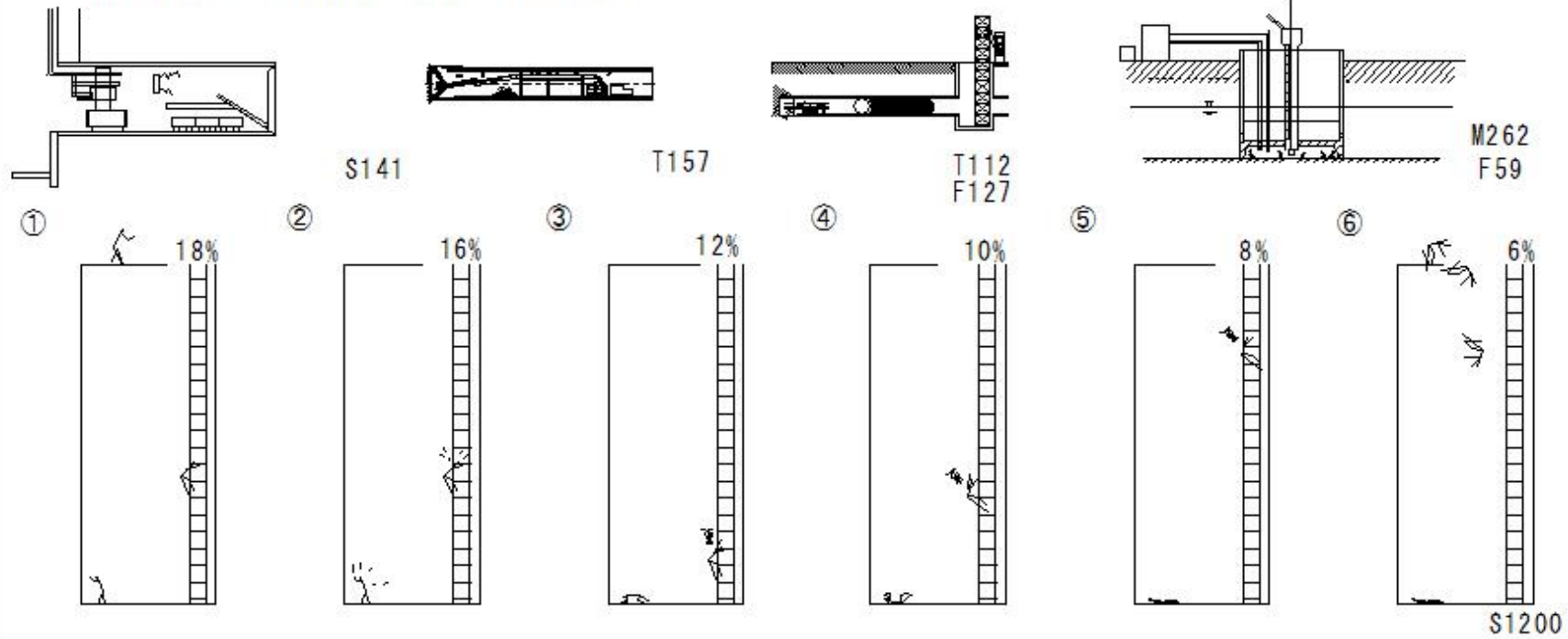
Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 17

(Examination and treatment)

① Oxygen deficiency, etc.

② Physician's examination or treatment



(S1213) Oxygen Deficiency

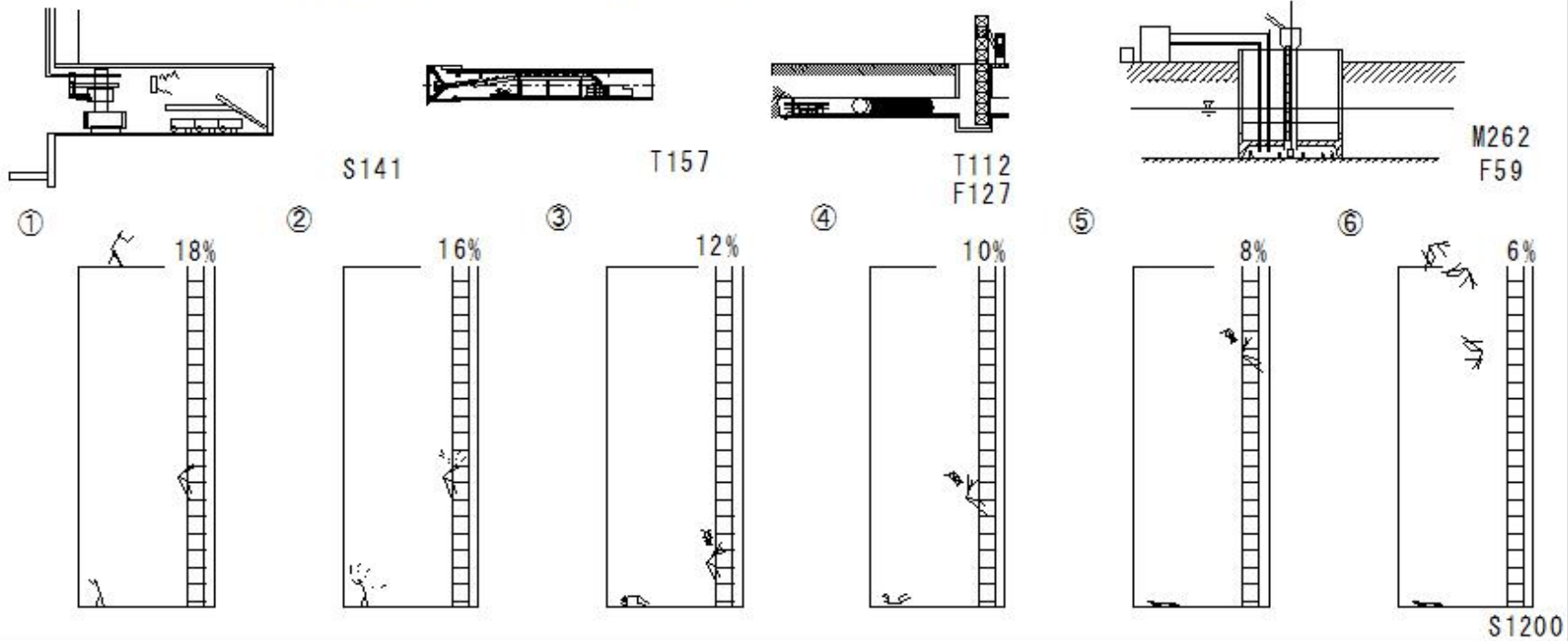
(S1213) Oxygen Deficiency

Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 5, Paragraph 2

(Use of protective equipment, etc.)

- ① Air respirators, etc. ② Oxygen respirators ③ Air-supplied masks
④ Publicize the need to use air respirators, etc.



(S1214) Oxygen Deficiency

(S1214) Oxygen Deficiency

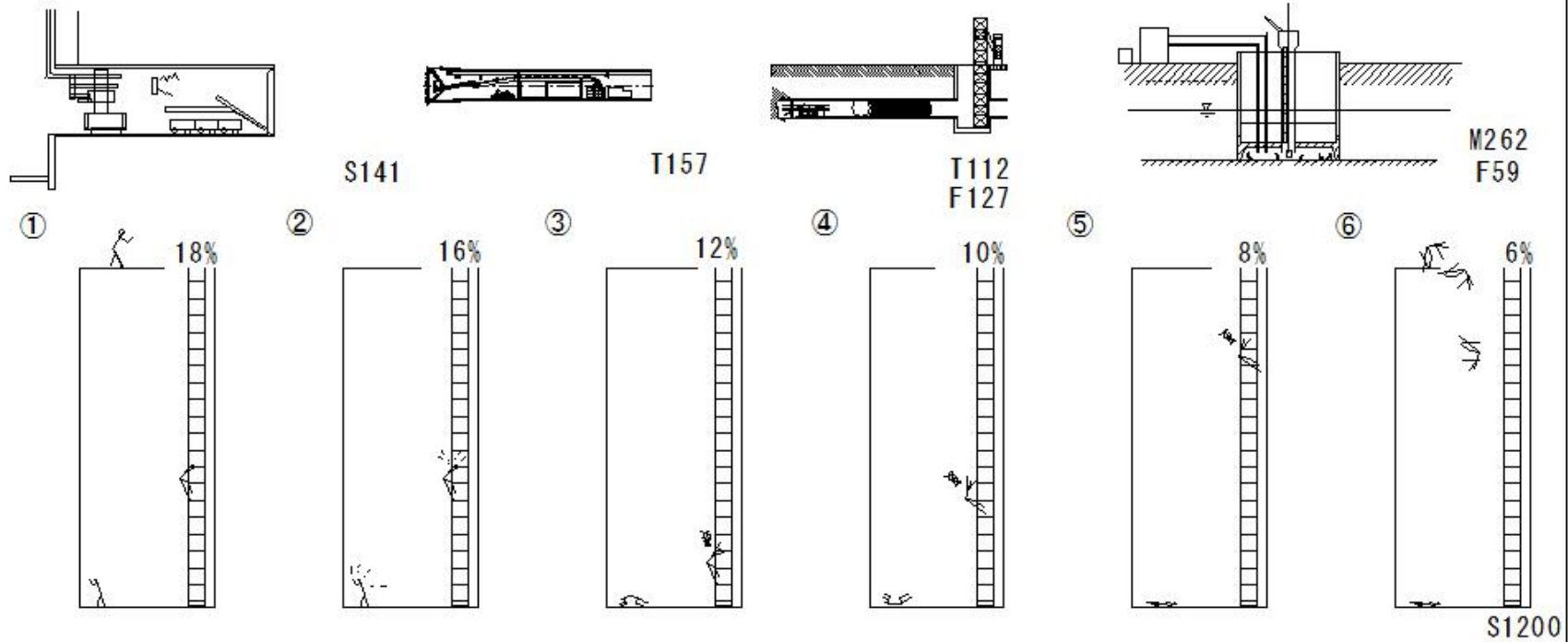
Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 6

(Required performance of fall prevention equipment, etc.)

① Dangerous work due to oxygen deficiency

② Fall prevention equipment, etc.



(S1215) Oxygen Deficiency

(S1215) Oxygen Deficiency

Prevention of oxygen deficiency, etc.

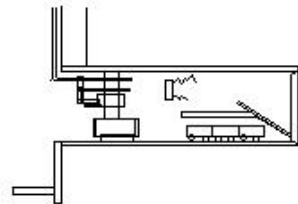
Oxygen Deficiency Law Article 9

(No entry)

① Oxygen deficiency dangerous area

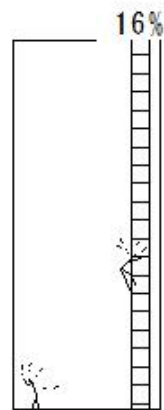
② People other than those engaged in oxygen deficiency dangerous work

③ Entry prohibited

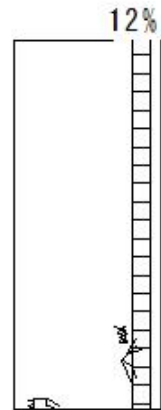


S141

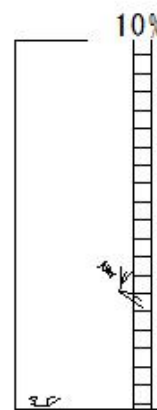
②



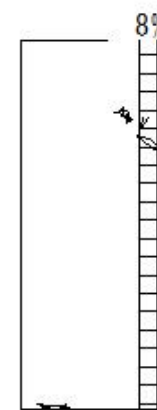
③



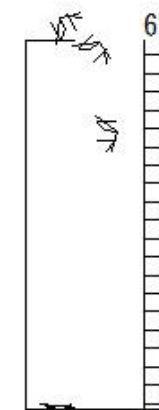
④



⑤



⑥



M262
F59

S1200

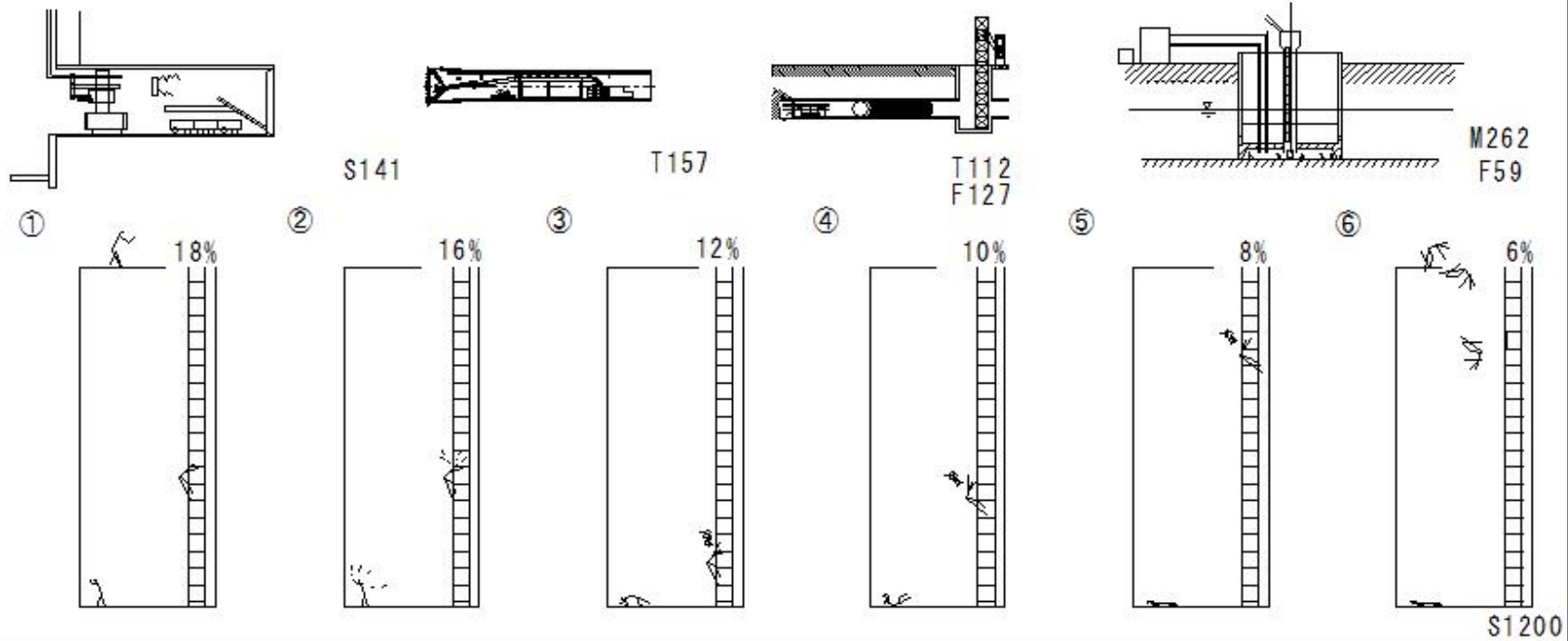
(S1216) Oxygen Deficiency

(S1216) Oxygen Deficiency

Prevention of oxygen deficiency, etc.

Oxygen Deficiency Law Article 16

(Use of air respirators, etc. during rescue)



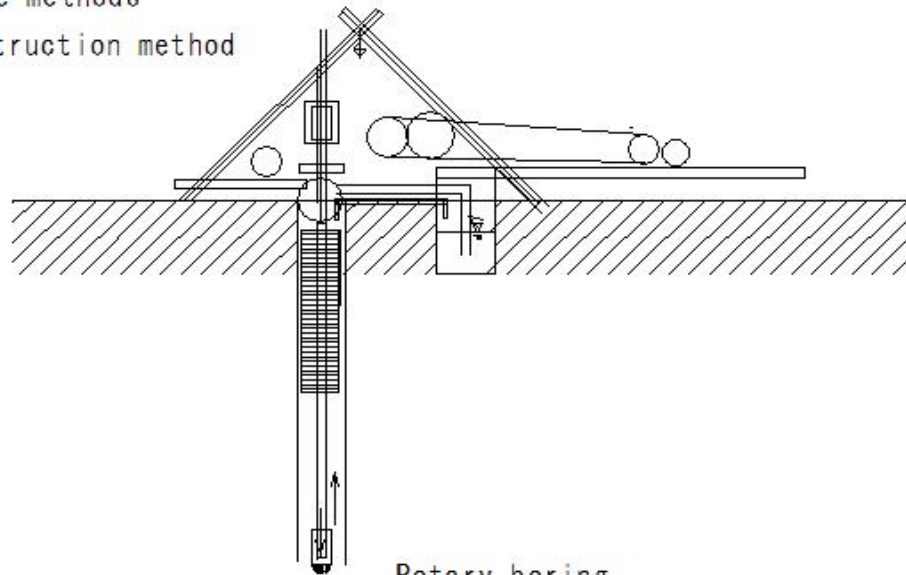
(S1217) Oxygen Deficiency

(S1217) Oxygen Deficiency

Preventive measures for oxygen deficiency during special work

Article 18 of the Oxygen Deficiency Act

- ① Excavation of tunnels and other wells
- ② Eruption of methane or carbon dioxide
- ③ Oxygen deficiency
- ④ Investigate the presence and condition of methane and carbon dioxide by drilling or other appropriate methods
- ⑤ Work after determining the construction method



Rotary boring

E22
E29

(S1218) Oxygen Deficiency

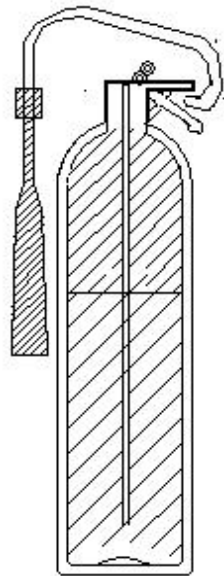
(S1218) Oxygen Deficiency

Preventive measures for oxygen deficiency during special work

Article 19 of the Oxygen Deficiency Act

(Measures related to fire extinguishing equipment, etc.)

- ① Basements, engine rooms, holds, and other places with insufficient ventilation
- ② Fire extinguishers or fire extinguishing equipment (uses carbon dioxide)
- ③ Measures to prevent falling over or handles that cannot be easily operated



fire extinguishing S1034

(S1219) Oxygen Deficiency

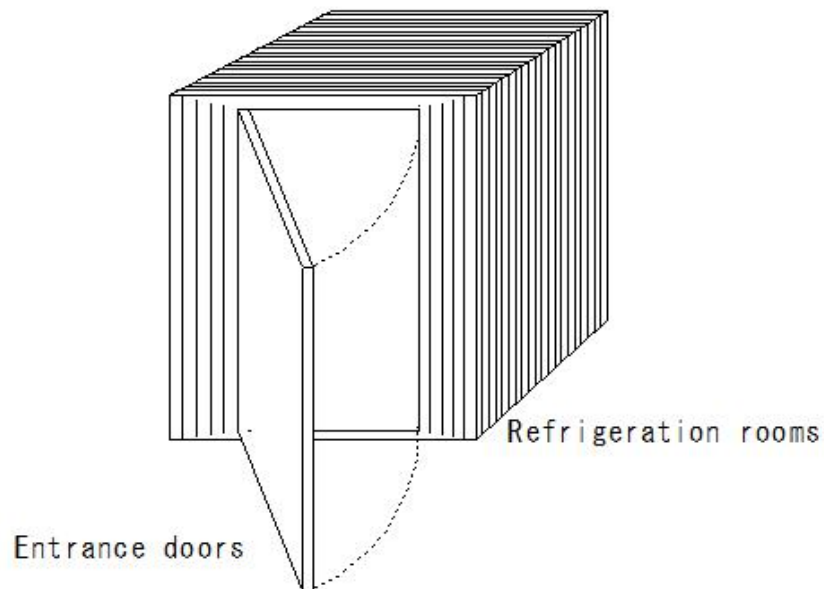
(S1219) Oxygen Deficiency

Preventive measures for oxygen deficiency during special work

Article 20 of the Oxygen Deficiency Act

(Measures related to refrigeration rooms, etc.)

- ① Refrigeration rooms, freezers, cellars, and other facilities used in a sealed condition
- ② Measures to prevent the doors or lids of the entrances and exits of facilities or equipment from closing
- ③ Structure in which the entrance doors or lids can be easily opened from the inside



(S1220) Oxygen Deficiency

(S1220) Oxygen Deficiency

Preventive measures for oxygen deficiency during special work

Article 21 of the Oxygen Deficiency Act

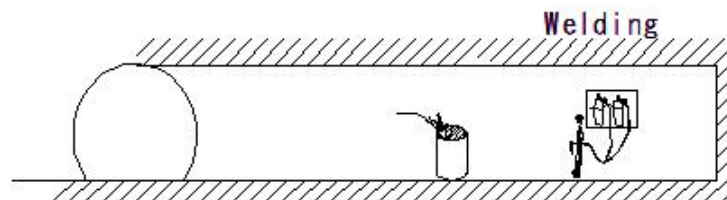
(Measures relating to welding)

- ① Inside tanks, boilers, or reactors, or other places with insufficient ventilation
- ② Welding work using argon, carbon dioxide, or helium
- ③ Ventilate the air to keep the oxygen concentration at 18% or higher.
- ④ Have workers use respirators, etc.



S1024

- ③ Ventilate
- ④ Respirators



S1073

(S1221) Oxygen Deficiency

(S1221) Oxygen Deficiency

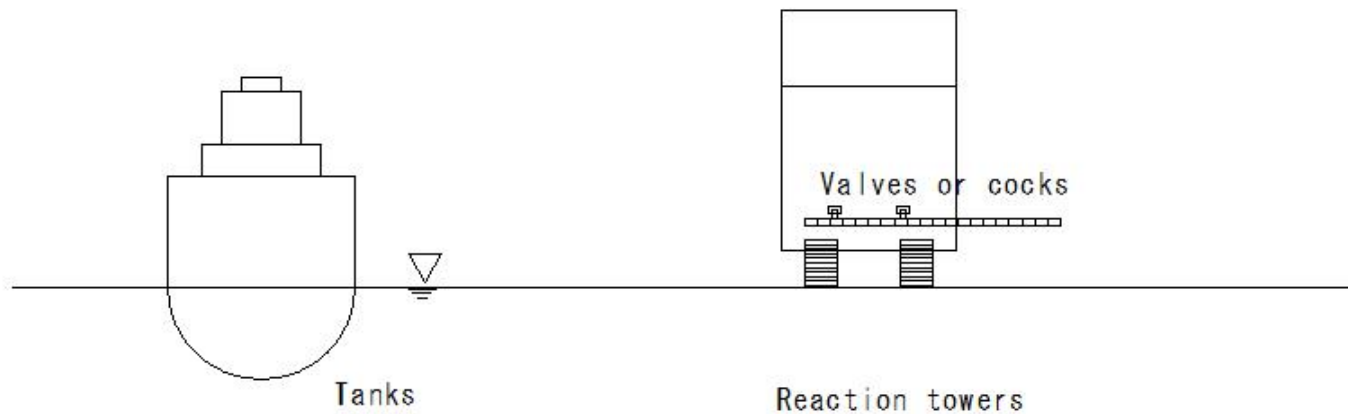
Preventive measures for oxygen deficiency during special work

Article 22 of the Oxygen Deficiency Act

(Measures to prevent gas leakage)

Inside boilers, tanks, reaction towers, holds, etc.

- ① Close valves or cocks or install stoppers.
- ② Lock valves or cocks or installed stoppers.



(S1222) Oxygen Deficiency

(S1222) Oxygen Deficiency

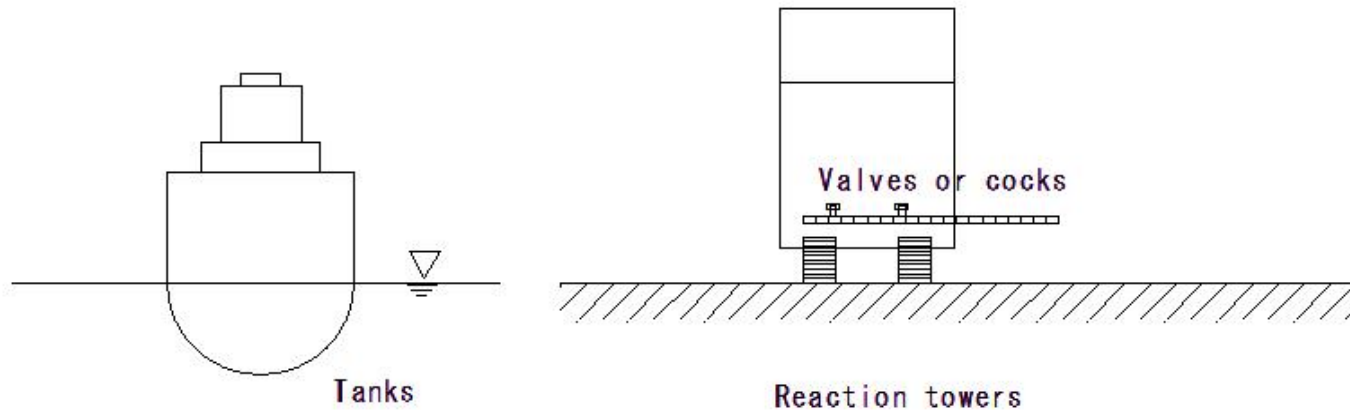
Preventive measures for oxygen deficiency during special work

Article 22-2 of the Oxygen Deficiency Act

(Measures to prevent gas leakage)

(Measures related to gas emissions)

- ① Tanks, reaction towers, etc.
- ② Places with insufficient ventilation



(S1223) Oxygen Deficiency

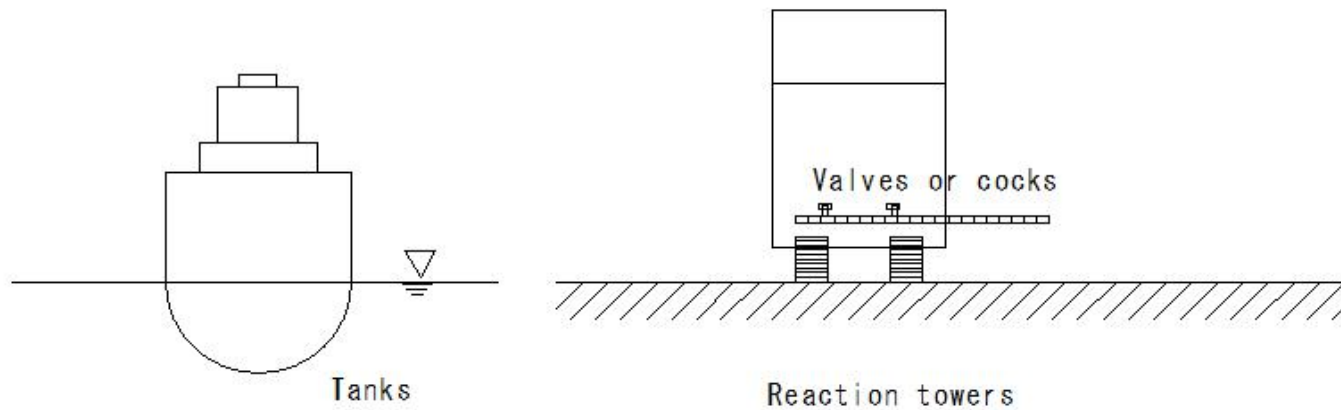
(S1223) Oxygen Deficiency

Preventive measures for oxygen deficiency during special work

Article 23 of the Oxygen Deficiency Act

(Prevention of air dilution)

(Prevention of air dilution)



(S1224) Oxygen Deficiency

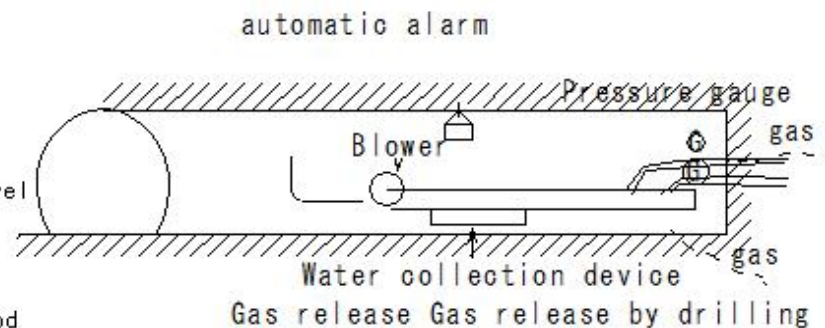
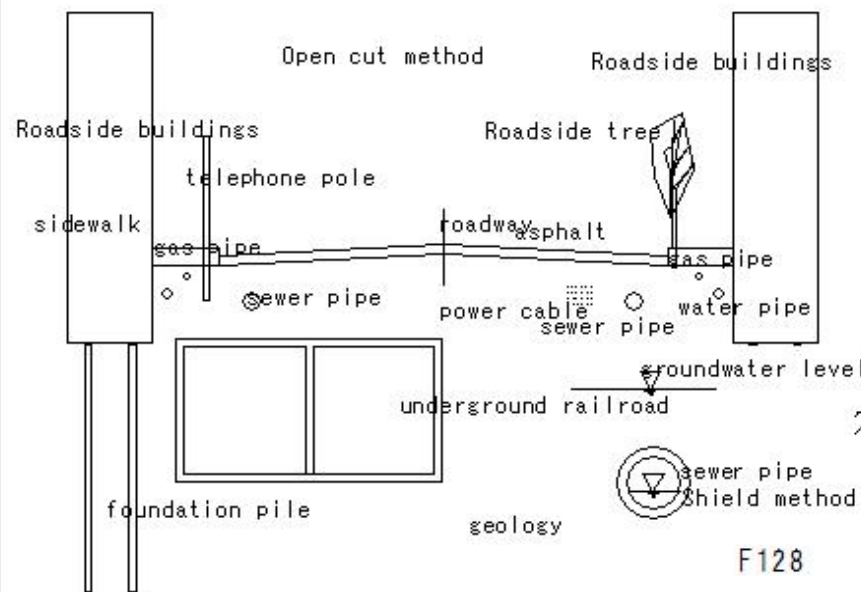
(S1224) Oxygen Deficiency

Preventive measures for oxygen deficiency during special work

Article 23-2 of the Oxygen Deficiency Act

(Measures related to gas piping work)

- ① Ensure that the gas is shut off at the point where piping is removed or installed.
- ② Provide ventilation to keep the oxygen concentration in the air at 18% or higher, and use air respirators, etc.



F128

S1071

(S1225) Oxygen Deficiency

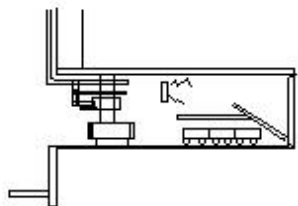
(S1225) Oxygen Deficiency

Preventive measures for oxygen deficiency during special work

Article 24 of the Oxygen Deficiency Law

(Measures related to compressed air construction)

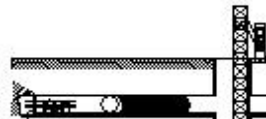
- ① Work using compressed air construction
- ② Wells or pipes that may leak oxygen-deficient air
- ③ Investigations must be conducted to determine whether there is an air leak and the oxygen concentration.
- ④ Report to the Chief of the Labor Standards Inspection Office



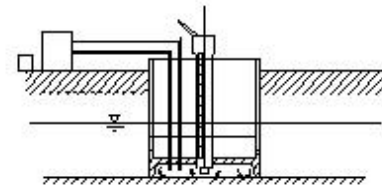
S141



T157



T112
F127



M262
F59

(S1226) Oxygen Deficiency

(S1226) Oxygen Deficiency

Preventive measures for oxygen deficiency during special work

Article 25 of the Oxygen Deficiency Act

(Measures relating to basements, etc.)

○Closing any areas where oxygen-deficient air may leak,

○Installing equipment that can directly release oxygen-deficient air to the outside

①Ground surface

②Basement

③Ground surface

④Well or piping

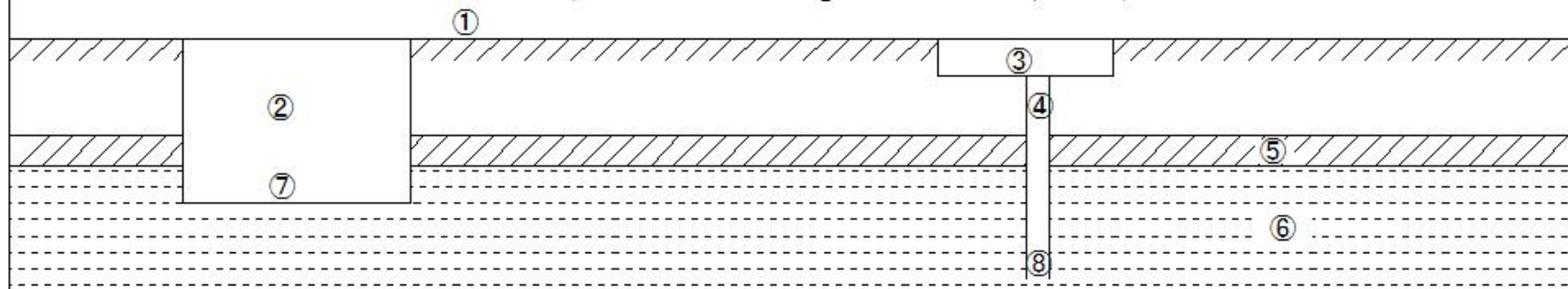
⑤Impermeable layer

⑥Gravel layer

⑦Basement adjacent to the stratum

⑧Basement or pit with a well or piping leading to the stratum

(Measures relating to basements, etc.)



(S1227) Oxygen Deficiency

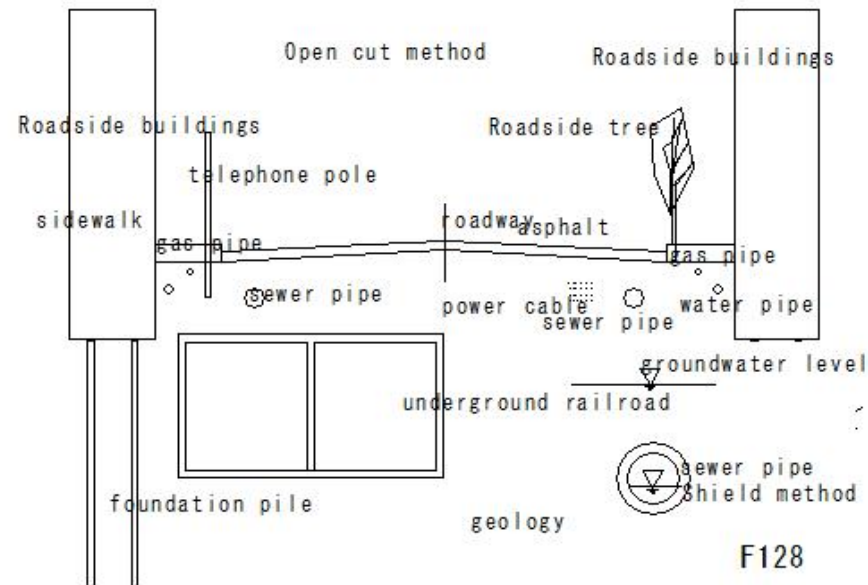
(S1227) Oxygen Deficiency

Preventive measures for oxygen deficiency during special work

Article 25-2 of the Oxygen Deficiency Act

(Work to modify equipment, etc.)

Measures to be taken when modifying equipment for human waste, sludge, sewage, etc.



(S1228) Organic Solvent Poisoning

(S1228) Organic Solvent Poisoning

Prevention of organic solvent poisoning

Organic solvent law Article 1

Organic solvent poisoning prevention regulations

- ① Organic solvents, etc. Organic solvents or substances containing organic solvents
- ② A mixture containing more than 5% of the weight of the mixture contains an organic solvent



Widely used in painting, cleaning, printing, and other tasks
painting,



Organic compounds that have the ability to dissolve other substances
Organic solvents

(S1229) Organic Solvent Poisoning

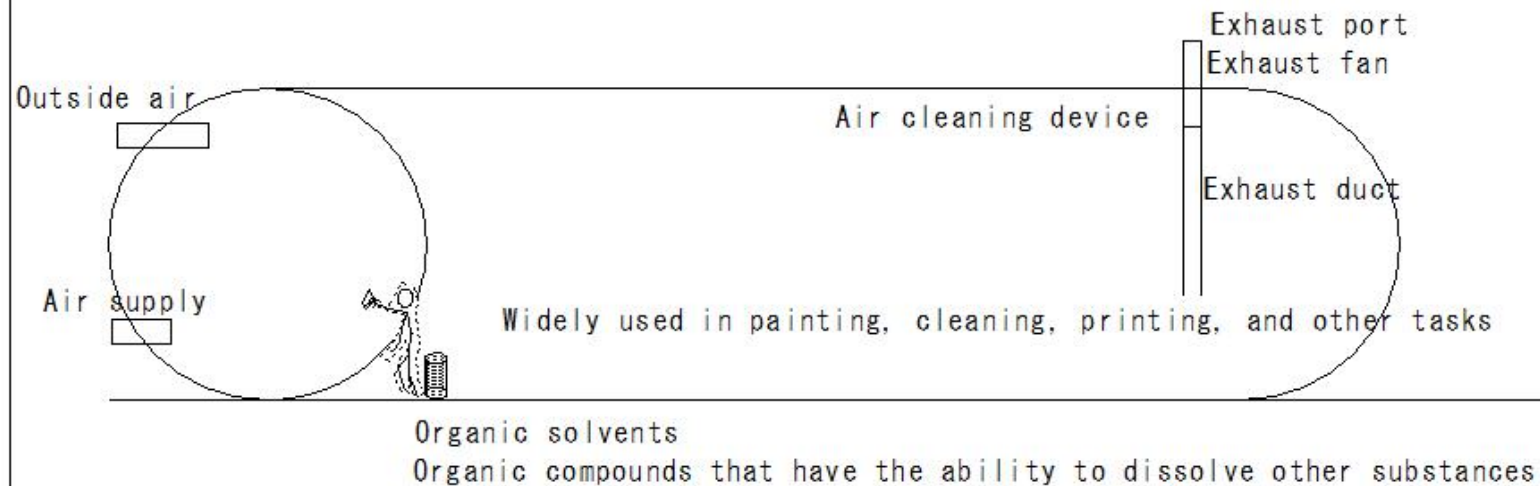
(S1229) Organic Solvent Poisoning

Prevention of organic solvent poisoning

Article 19-2 of the Organic Solvent Law

(Duties of the Organic Solvent Work Supervisor)

- ① Determine the work method and supervise workers so as not to be contaminated by or inhale organic solvents.
- ② Inspect local exhaust ventilation systems, push-pull type ventilation systems, or general ventilation systems at intervals not exceeding one month.
- ③ Monitor the use of protective equipment.
- ④ In case of organic solvent work is performed inside a tank,



(S1230) Organic Solvent Poisoning

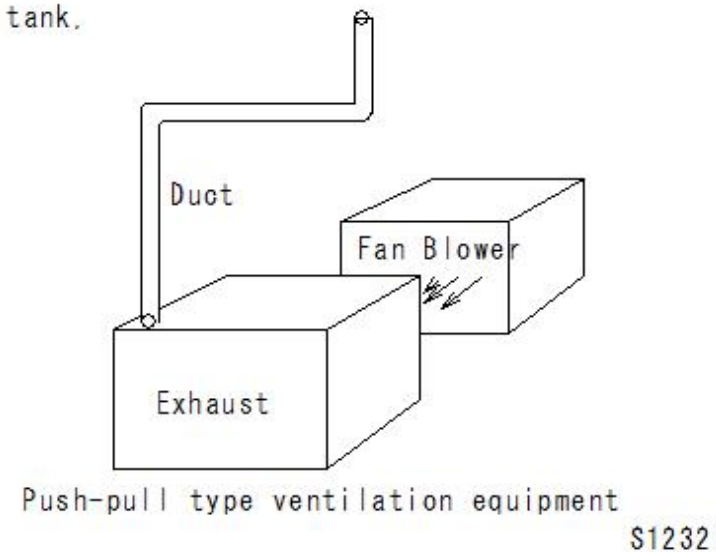
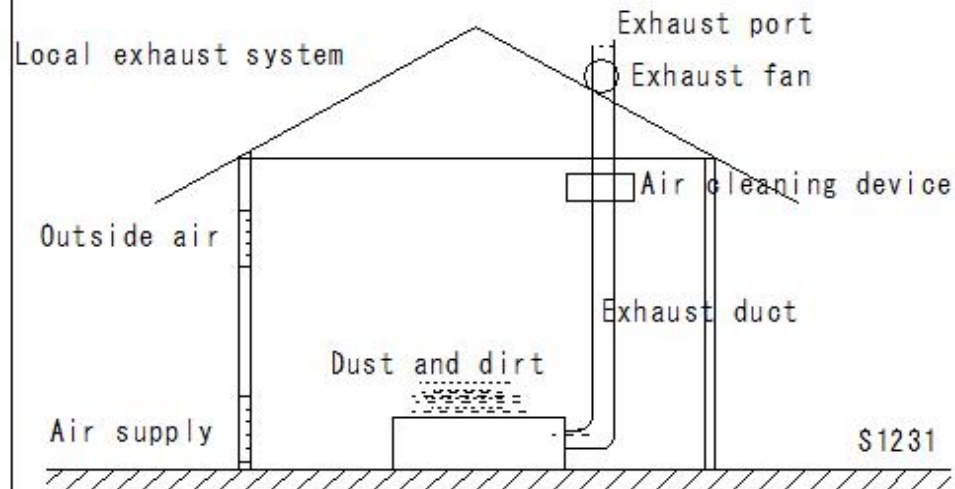
(S1230) Organic Solvent Poisoning

Prevention of organic solvent poisoning

Article 19-2 of the Organic Solvent Law

(Duties of the Organic Solvent Work Supervisor)

- ① Determine the work method and supervise workers so as not to be contaminated by or inhale organic solvents.
- ② Inspect local exhaust ventilation systems, push-pull type ventilation systems, or general ventilation systems at intervals not exceeding one month.
- ③ Monitor the use of protective equipment.
- ④ In case of organic solvent work is performed inside a tank.



(S1231) Organic Solvent Poisoning

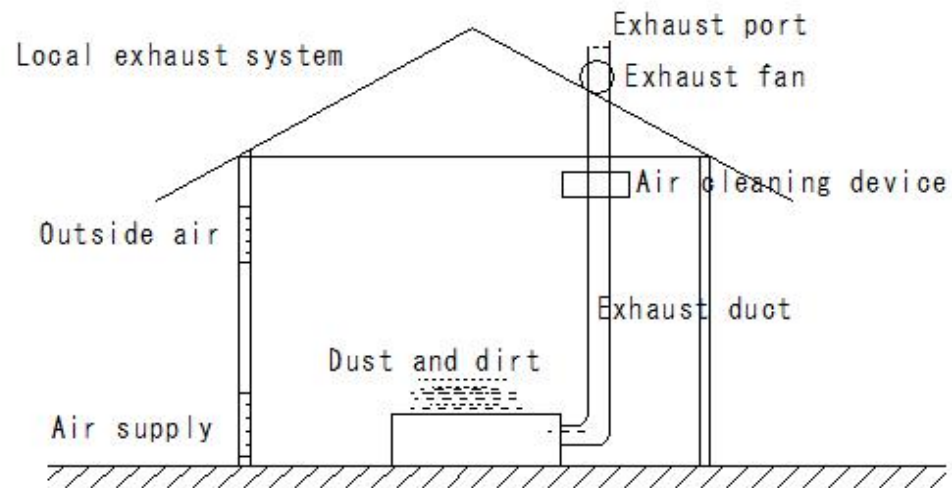
(S1231) Organic Solvent Poisoning

Prevention of organic solvent poisoning

Article 19-2 of the Organic Solvent Law

(Duties of the Organic Solvent Work Supervisor)

- ① Determine the work method and supervise workers so as not to be contaminated by or inhale organic solvents.
- ② Inspect local exhaust ventilation systems, push-pull type ventilation systems, or general ventilation systems at intervals not exceeding one month.
- ③ Monitor the use of protective equipment.
- ④ In case of organic solvent work is performed inside a tank,



(S1232) Organic Solvent Poisoning

(S1232) Organic Solvent Poisoning

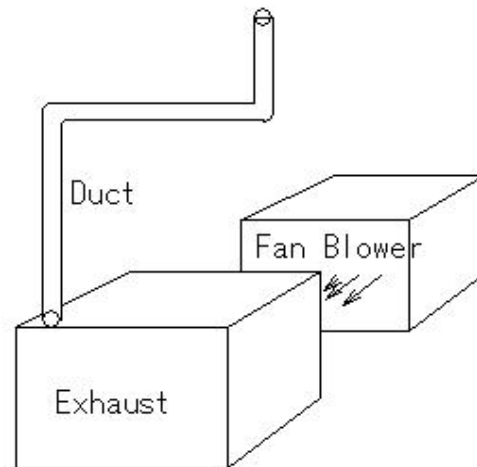
Prevention of organic solvent poisoning

Article 20-2 of the Organic Solvent Law

Periodic voluntary inspection of push-pull type ventilation equipment

Push-pull type ventilation equipment (organic solvent work)

Blowers and exhaust fans "Air supply, intake"



Push-pull type ventilation equipment

S1233) Organic Solvent Poisoning

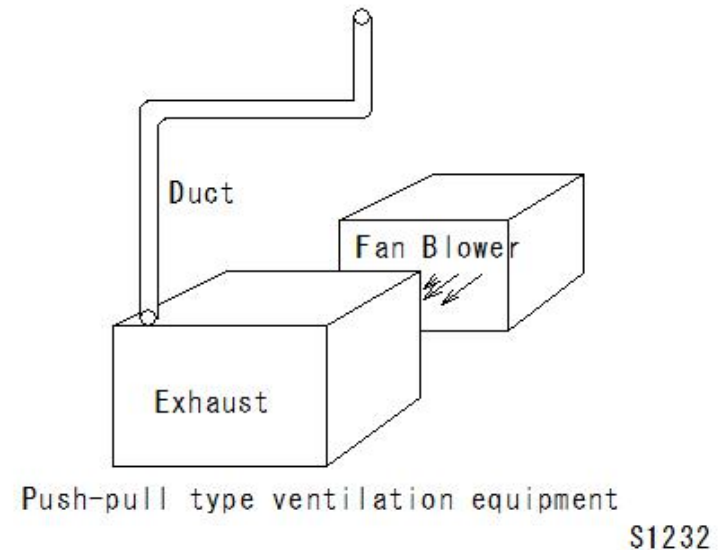
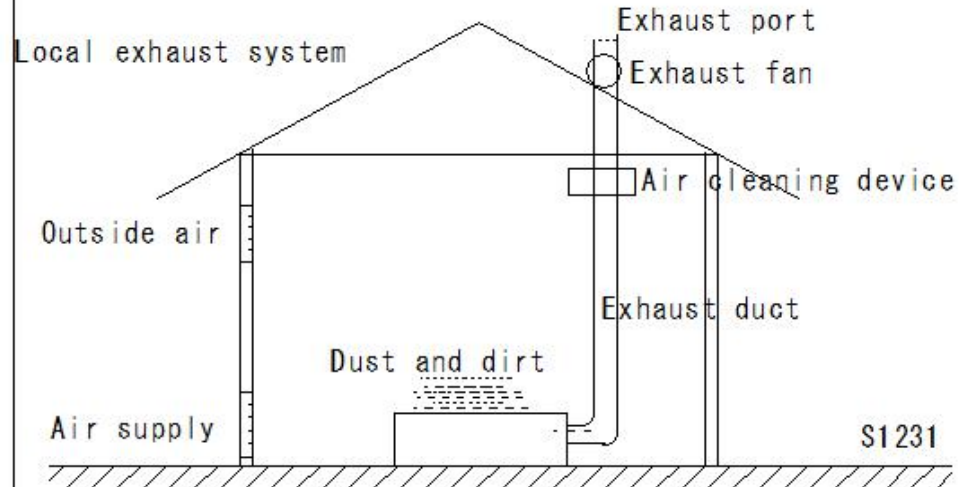
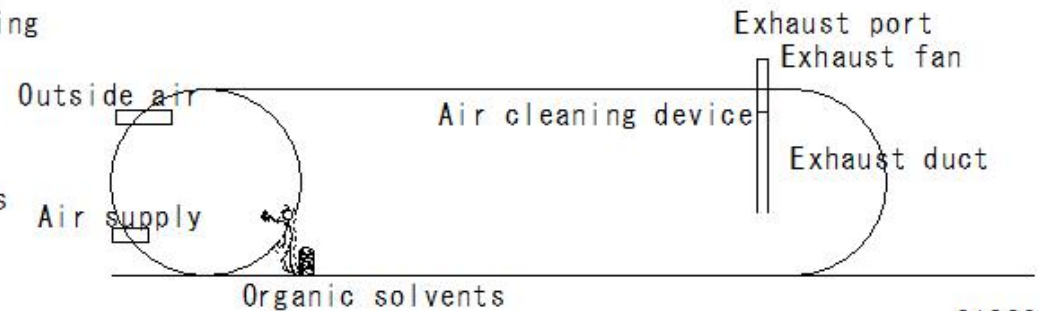
(S1233) Organic Solvent Poisoning

Prevention of organic solvent poisoning

Organic Law Article 21

(Records)

- ① Voluntary inspection
- ② Records and keep for three years



(S1234) Organic Solvent Poisoning

(S1234) Organic Solvent Poisoning

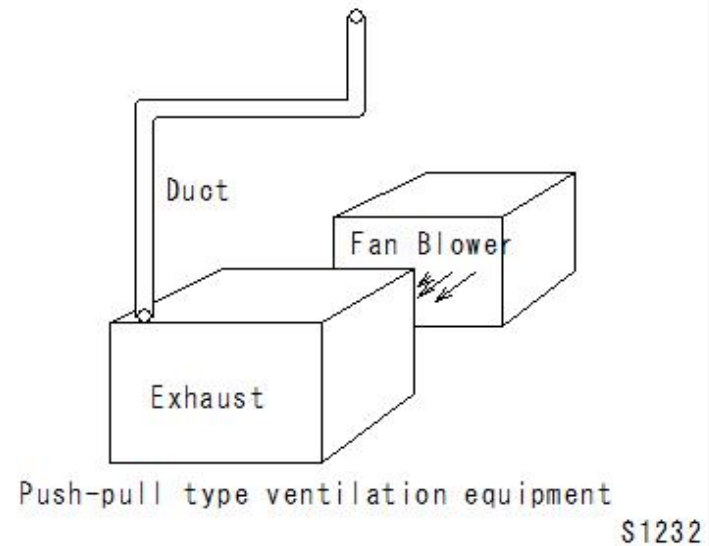
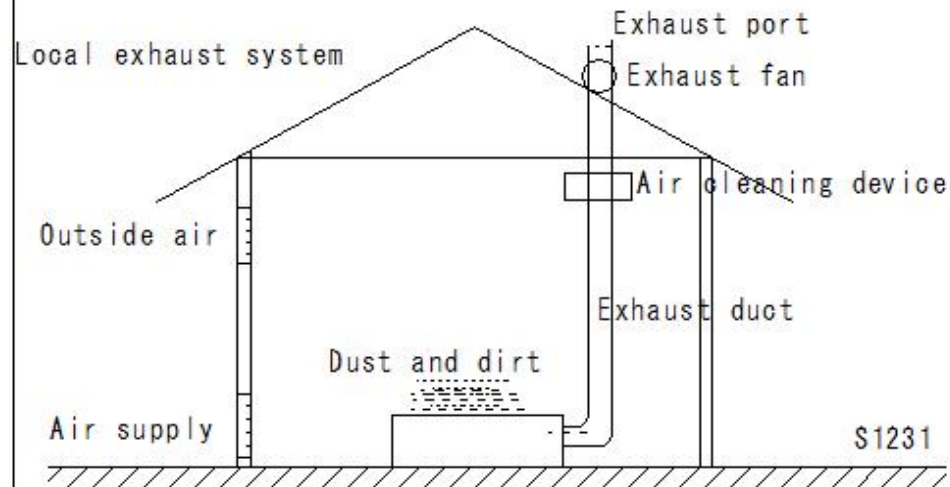
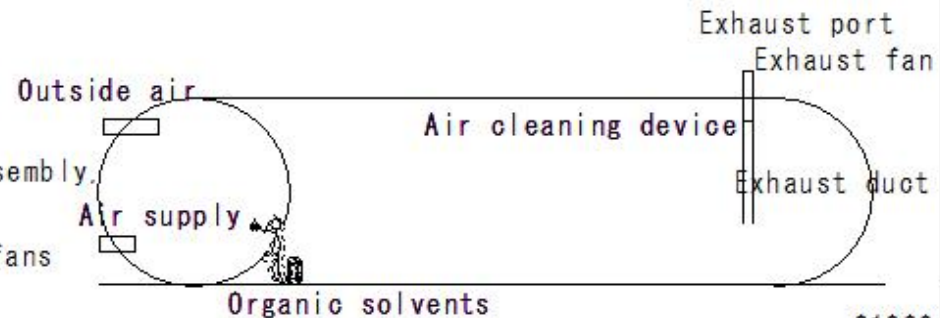
Prevention of organic solvent poisoning

Organic Law Article 22

(Inspection)

○ Local exhaust ventilation system - Disassembly, modification, repair - Inspection

- ① Dust accumulation in ducts and exhaust fans
- ② Presence or absence of looseness in duct connections
- ③ Intake and exhaust capacity



(S1235) Organic Solvent Poisoning

(S1235) Organic Solvent Poisoning

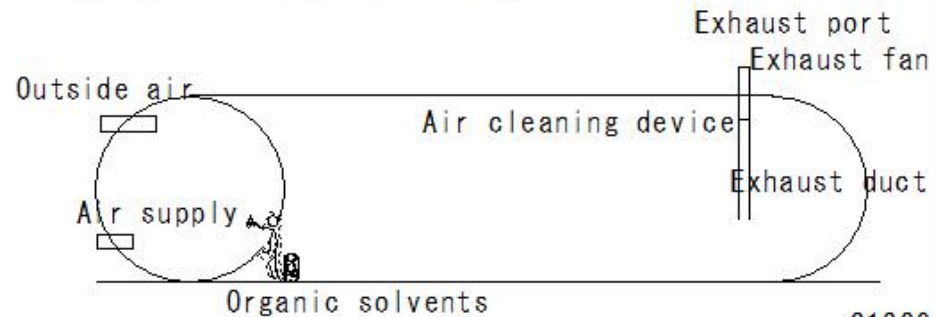
Prevention of organic solvent poisoning

Organic Solvent Law Article 23

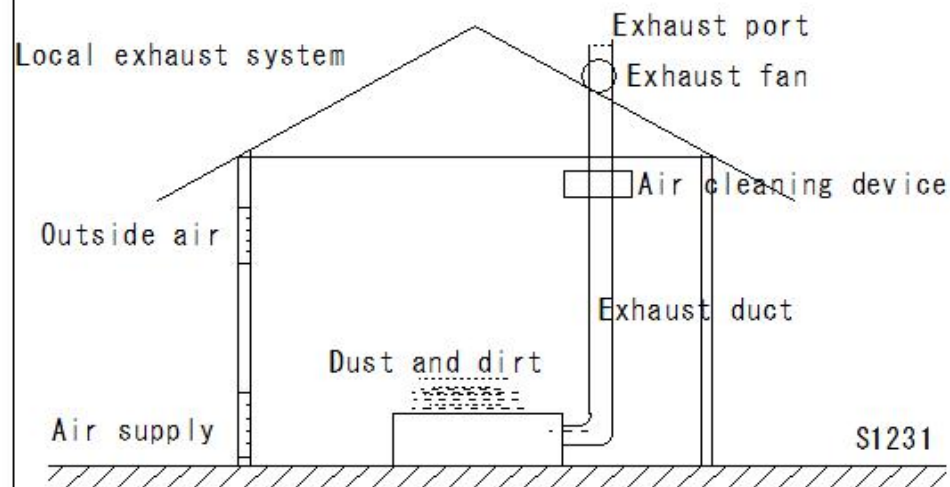
(Repair)

① Inspection

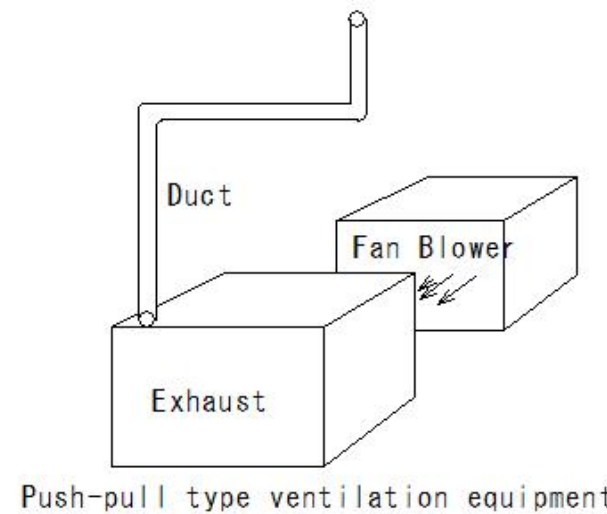
② In case of an abnormality is found,
repair immediately



S1230



S1231



Push-pull type ventilation equipment

S1232

(S1236) Organic Solvent Poisoning

(S1236) Organic Solvent Poisoning

Prevention of organic solvent poisoning

Article 24 of the Organic Solvent Law

(Posting)

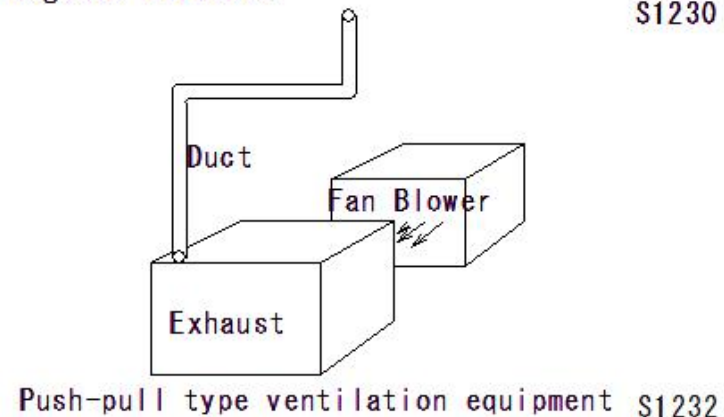
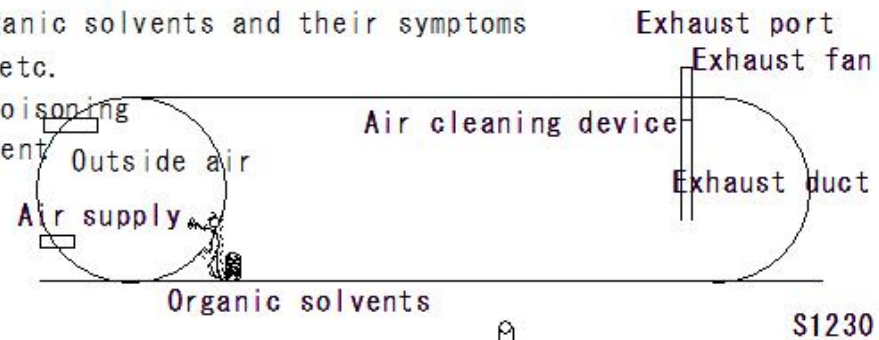
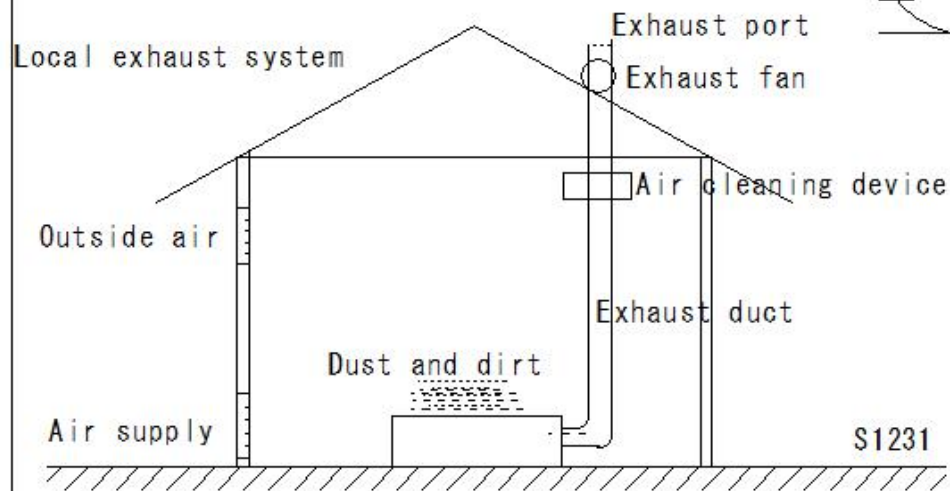
○ Organic solvent work in indoor workplaces, etc. Post in a conspicuous place

① Types of diseases that may be caused by organic solvents and their symptoms

② Precautions for handling organic solvents, etc.

③ First aid in the event of organic solvent poisoning

④ Use effective respiratory protective equipment



(S1237) Organic Solvent Poisoning

(S1237) Organic Solvent Poisoning

Prevention of organic solvent poisoning

Organic Law Article 25

(Indication of classification of organic solvents, etc.)



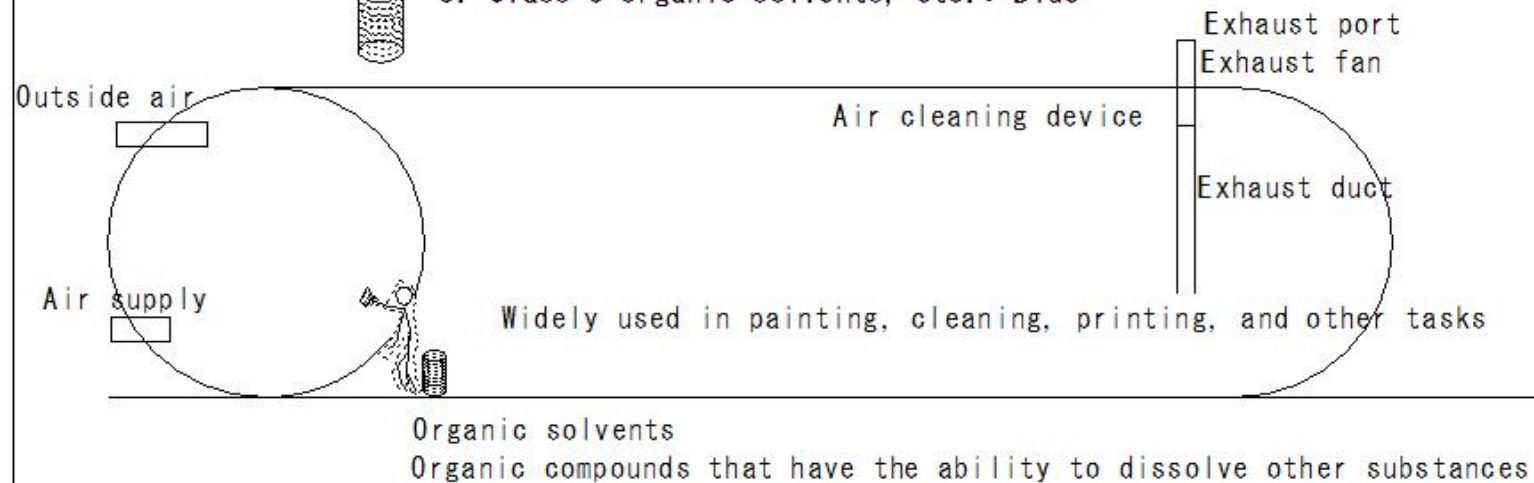
1. Class 1 organic solvents, etc.: Red



2. Class 2 organic solvents, etc.: Yellow



3. Class 3 organic solvents, etc.: Blue



(S1238) Organic Solvent Poisoning

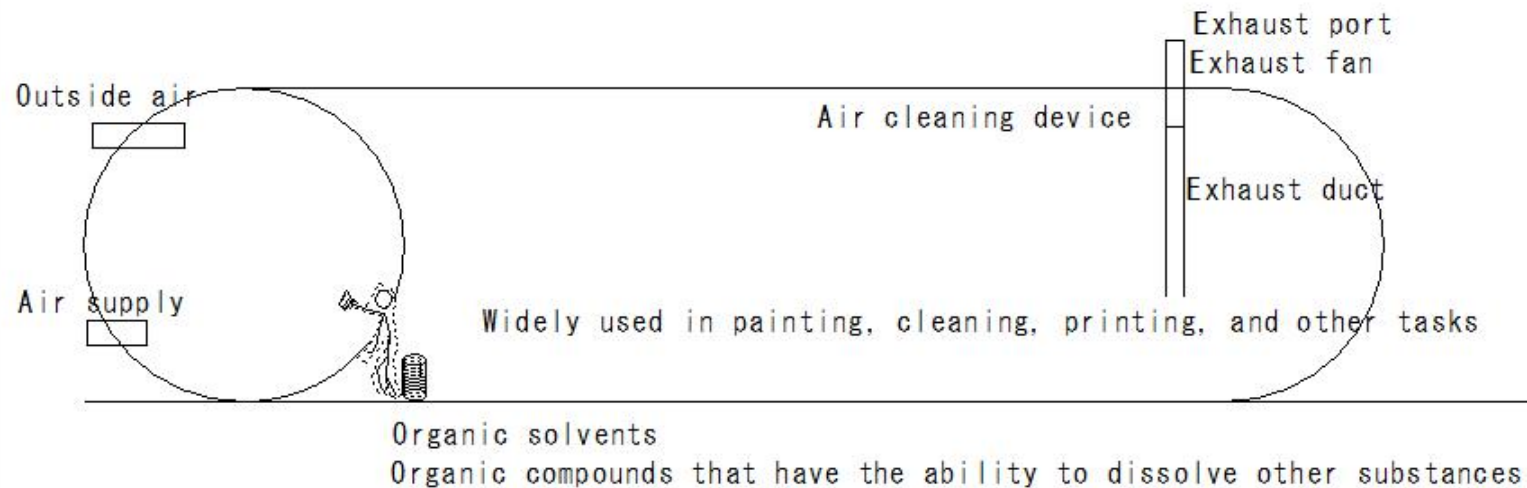
(S1238) Organic Solvent Poisoning

Prevention of organic solvent poisoning

Article 28-2 of the Organic Solvent Law

(Evaluation of measurement results)

Indoor workplace - Measurement - Evaluation of measurement results - Record and keep for three years



(S1239) Demolition Work for Waste Incineration Facilities

Management of demolition work for waste incineration facilities

Article 88, paragraph 3 of the Industrial Safety and Health Act

Article 90, item 5-3 of the Industrial Safety and Health Ordinance

- ① Demolition work for waste incineration facilities
- ② Preventing health damage caused by hazardous substances such as dioxins and heavy metals
- ③ Carrying out work while taking safety measures

【Safety measures】

- ① Preventing exposure to workers
- ② Preventing contamination of the surrounding environment
- ③ Proper processing and disposal of waste

【Specific examples of safety measures】

- ① Surveys such as measuring the work environment and analyzing attached materials
- ② Measures to prevent exposure before demolition work
- ③ Implementation of special training
- ④ Removal of attached materials
- ⑤ Preventing exposure of workers
- ⑥ Determination of controlled areas (selection of protective equipment)

(S1240) Demolition Work for Waste Incineration Facilities

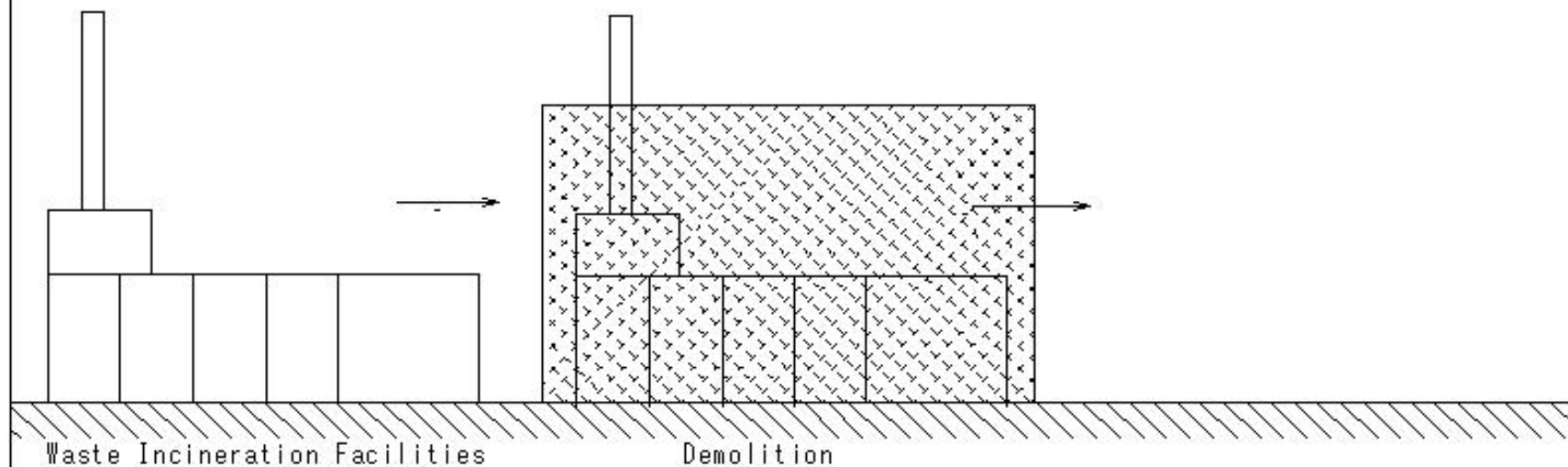
(S1240) Demolition Work for Waste Incineration Facilities

Management of waste incineration facility demolition work

Article 592-2 of the Industrial Safety and Health Ordinance

Measurement of the concentration of dioxins in the air

Measurement of the concentration and content of dioxins



(S1241) Demolition Work for Waste Incineration Facilities

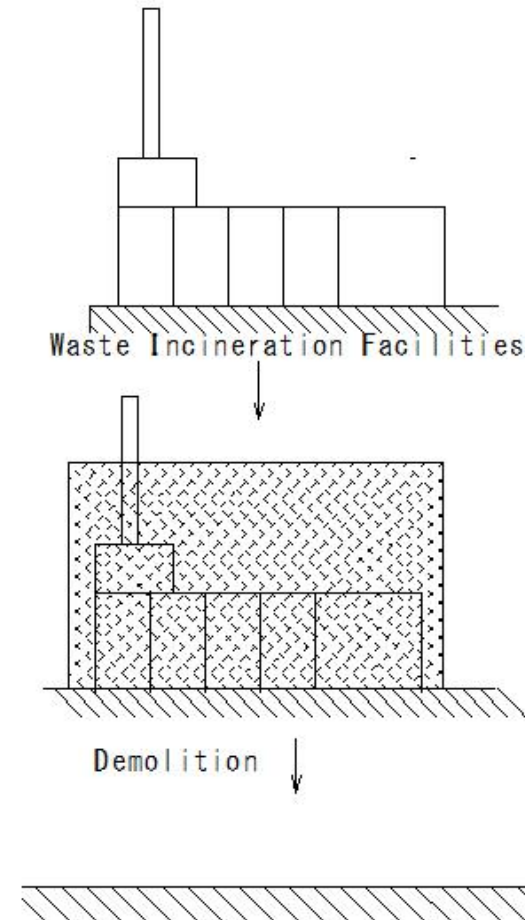
(S1241) Demolition Work for Waste Incineration Facilities

Management of waste incineration facility demolition work

Article 592-6 of the Safety and Health Regulations

Deciding on the demolition method: Demolition work manual

1. Preface
2. Safety and health management system
3. Drafting the work plan
4. Measuring dioxin concentrations in the air
5. Preliminary evaluation of the facility to be demolished, including sampling
6. Use of protective equipment
7. Carrying out the work of removing attached material
8. Choosing the demolition method
9. Separating and protecting the work area
10. Preparation for demolition work
11. Carrying out the demolition work
12. Points to note and transportation work for mobile demolition
13. Response to the surrounding environment



(S1242) Demolition Work for Waste Incineration Facilities

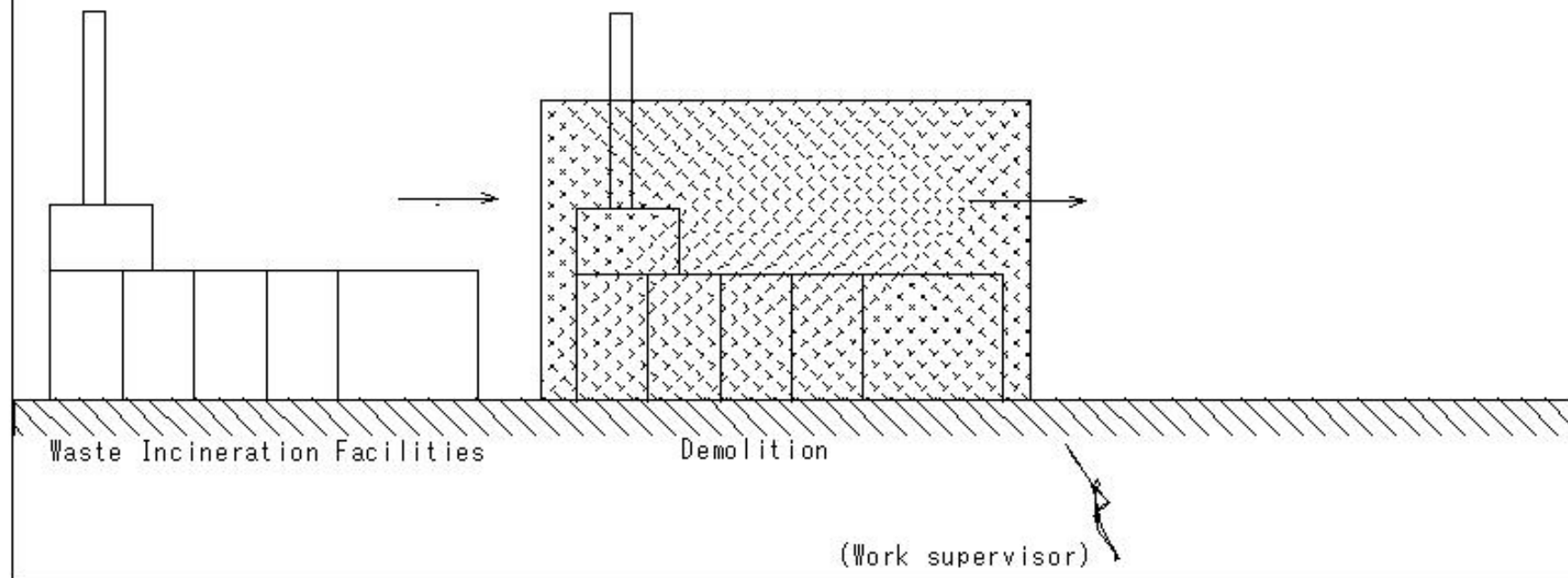
(S1242) Demolition Work for Waste Incineration Facilities

Management of waste incineration facility demolition work

Article 592-6 of the Safety and Health Regulations

(Work supervisor)

Command-inspection



(S1243) Demolition Work for Waste Incineration Facilities

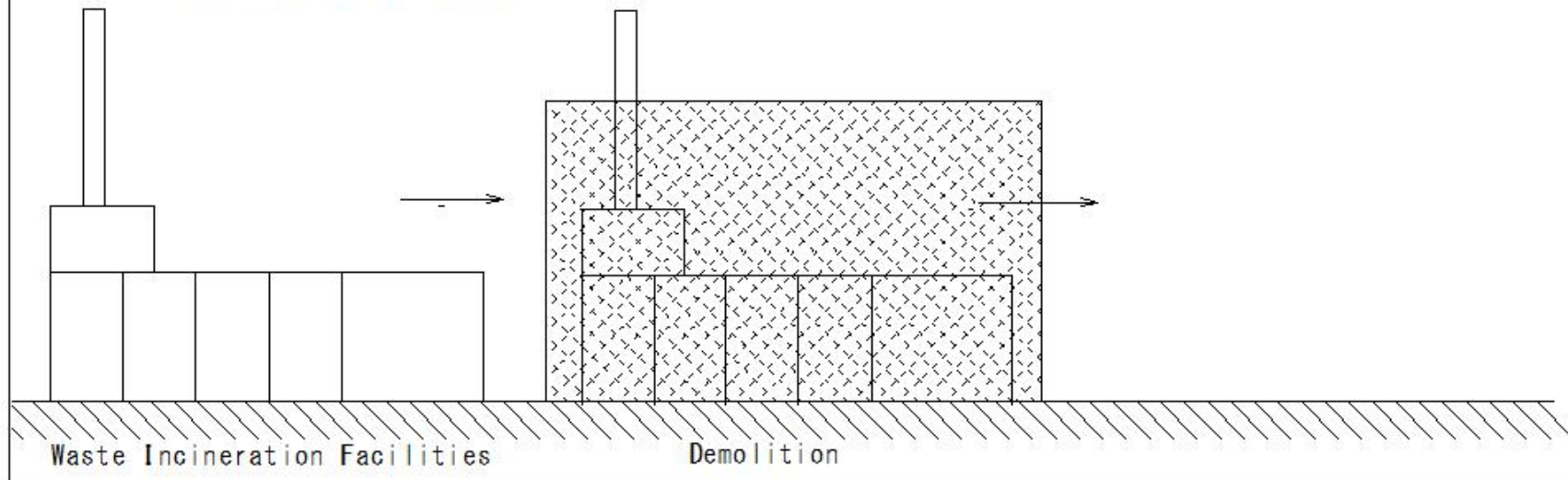
(S1243) Demolition Work for Waste Incineration Facilities

Management of waste incineration facility demolition work

Article 592-7 of the Safety and Health Regulations

(Special training)

- ① Harmfulness of dioxins
- ② Work methods and measures in case of accidents
- ③ Equipment inspection at the start of work
- ④ How to use protective equipment
- ⑤ Other matters necessary to prevent exposure to dioxins, in addition to those listed in the preceding paragraphs



(S1244) Demolition Work for Waste Incineration Facilities

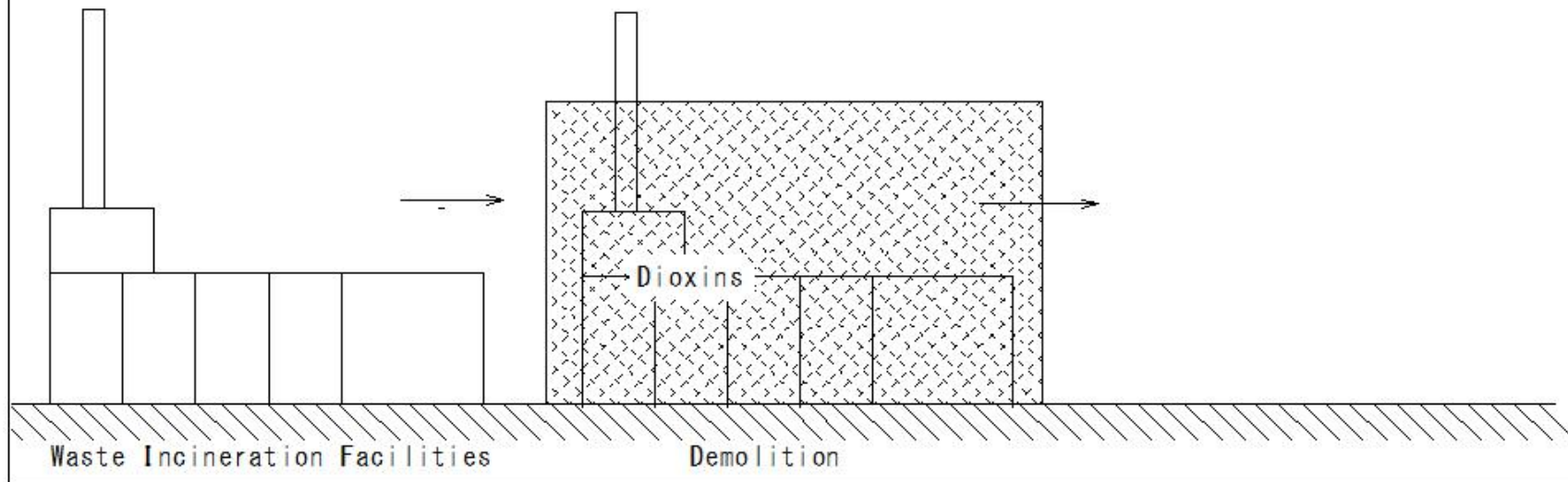
(S1244) Demolition Work for Waste Incineration Facilities

Management of waste incineration facility demolition work

Article 592-3 of the Safety and Health Regulations

(Removal of attached materials)

① Removal of materials containing dioxins attached to the inside of the equipment



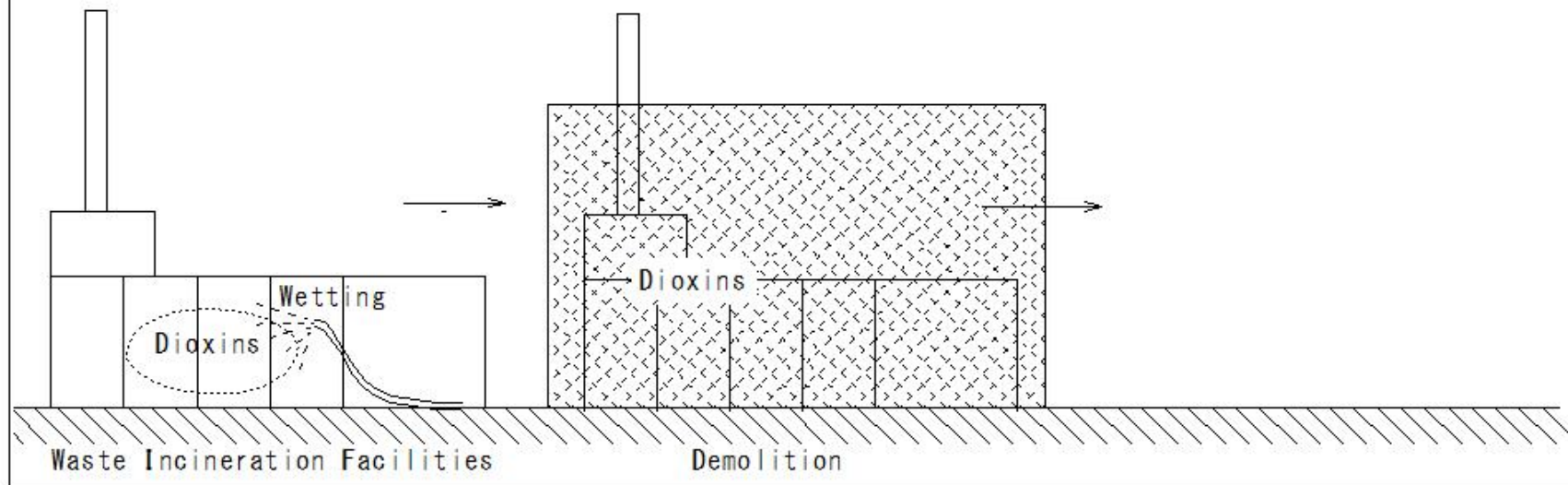
(S1245) Demolition Work for Waste Incineration Facilities

(S1245) Demolition Work for Waste Incineration Facilities

Management of waste incineration facility demolition work

Article 592-4 of the Safety and Health Regulations

(Wetting of sources of dioxin-containing substances)



(S1246) Demolition Work for Waste Incineration Facilities

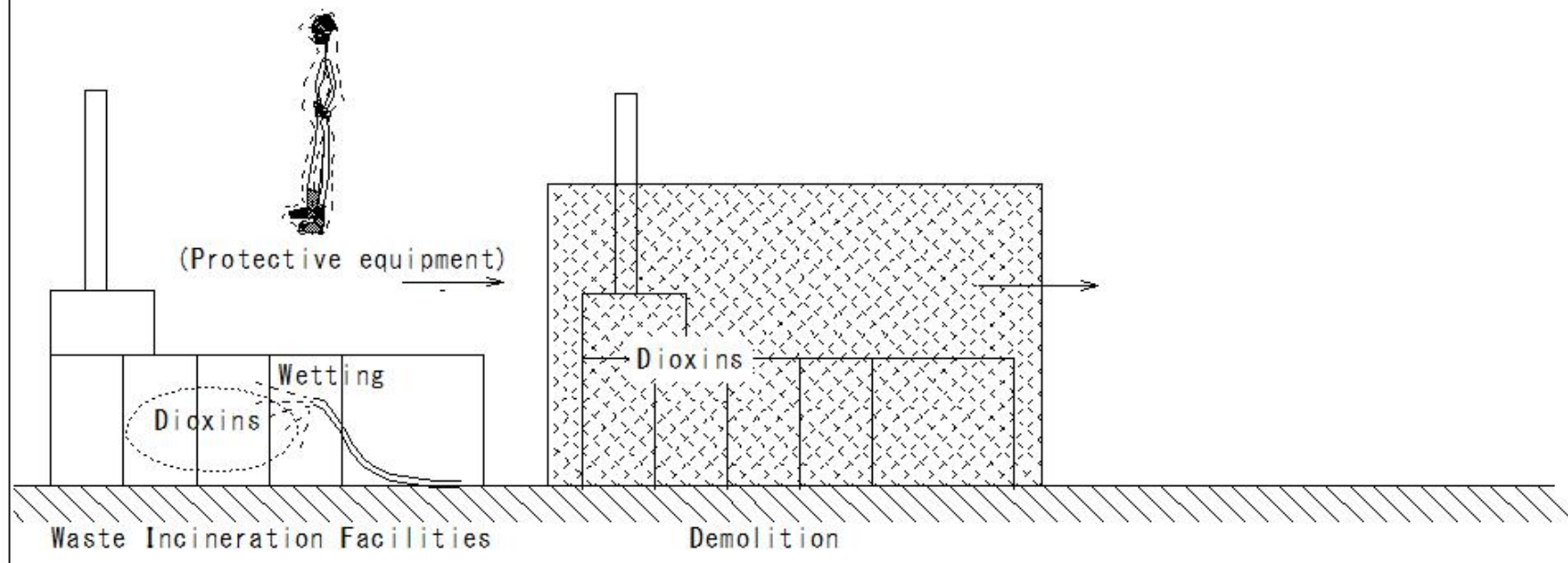
(S1246) Demolition Work for Waste Incineration Facilities

Management of waste incineration facility demolition work

Article 592-5 of the Safety and Health Regulations

(Protective equipment)

- ① Waste incineration facility demolition work
- ② Use appropriate protective equipment such as protective clothing, protective glasses, and respiratory protective equipment



(S1247) Demolition Work for Waste Incineration Facilities

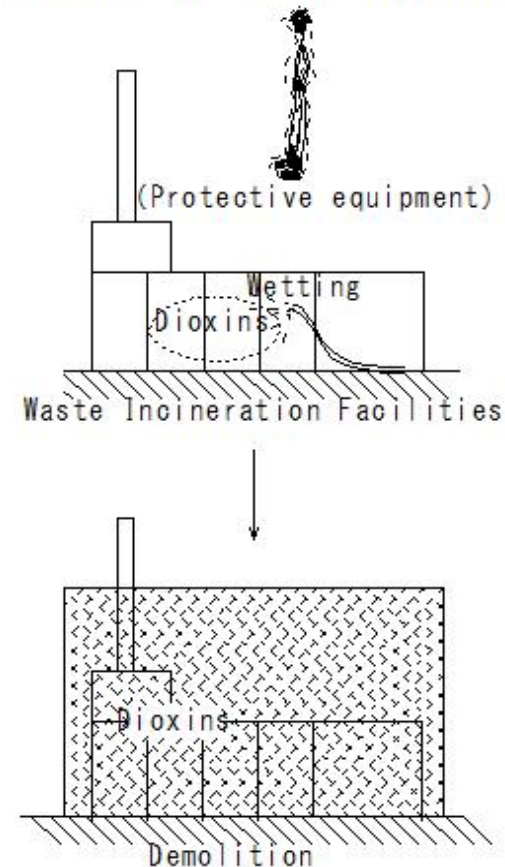
(S1247) Demolition Work for Waste Incineration Facilities

Management of waste incineration facility demolition work

Article 592-5 of the Safety and Health Ordinance

Demolition work flow (demolition work manual)

- ① Investigation of target installation
- ② Sampling of contaminants
Air concentration measurement
- ③ Dioxin analysis
- ④ Additional sampling
- ⑤ Deciding demolition method
- ⑥ Arrangement of necessary equipment
- ⑦ Notification of plan
- ⑧ Special training
- ⑨ Removal of attached materials
- ⑩ Confirmation of removal of attached materials
- ⑪ Demolition work
- ⑫ Air concentration measurement
- ⑬ Additional sampling
- ⑭ Discharge of contaminants



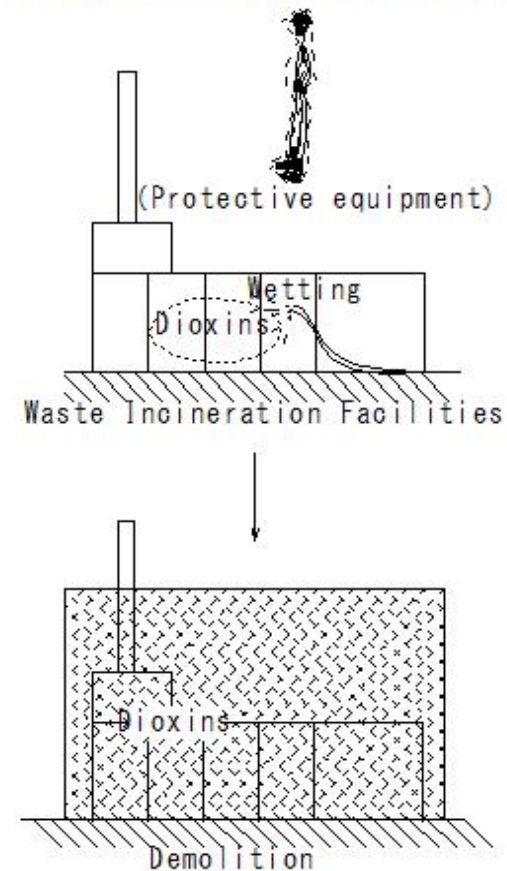
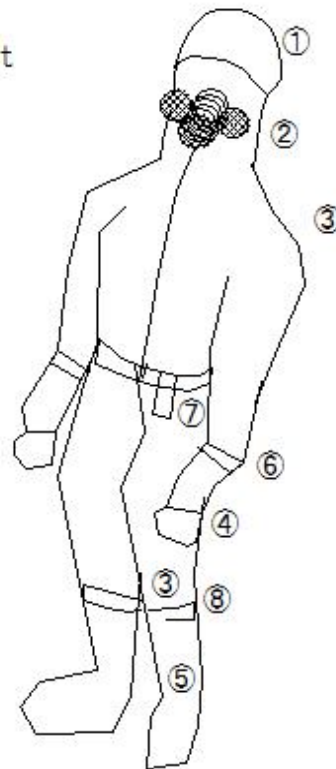
(S1248) Demolition Work for Waste Incineration Facilities

(S1248) Demolition Work for Waste Incineration Facilities

Management of waste incineration facility demolition work

Selection level of protective equipment

- ① Protective equipment: Helmet
- ② Dust and gas mask
- ③ Sealed chemical protective suit
- ④ Chemical protective gloves
- ⑤ Chemical protective boots
- ⑥ Sealing with tape, etc.
- ⑦ Safety belt
- ⑧ Sealing with tape, etc.



(S1249) Asbestos

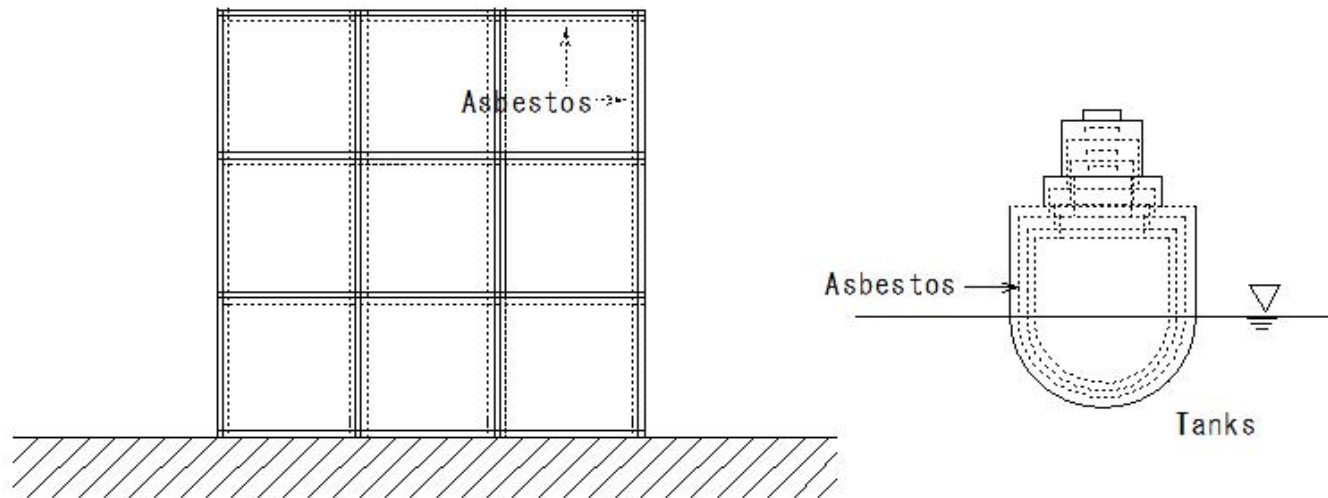
(S1249) Asbestos

Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 3

(Preliminary surveys and analytical surveys)

- ① Buildings, structures, or ships (dismantling of steel ships) or renovations
- ② Health hazards to workers caused by asbestos
- ③ The presence or absence of asbestos, etc. must be investigated.



(S1250) Asbestos

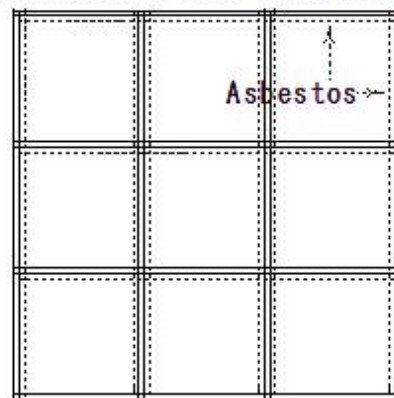
(S1250) Asbestos

Asbestos Hazard Prevention Regulations

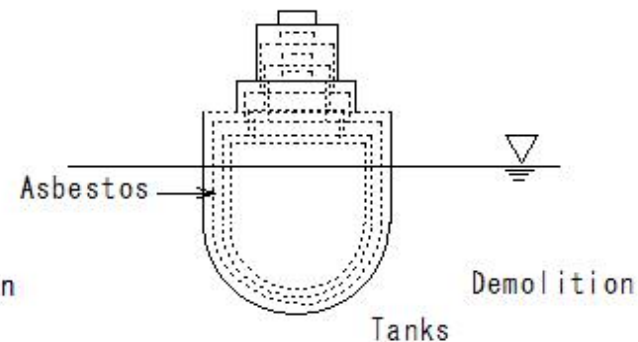
Asbestos Regulations Article 4

(Work Plan)

- Buildings, etc. that contain asbestos, etc. and are subject to demolition, etc.
- A work plan must be established and demolition work of asbestos-containing buildings, etc. must be carried out according to the work plan.
 - ① Method and sequence of work for demolition of asbestos-containing buildings, etc.
 - ② Methods for preventing or suppressing the emission of asbestos dust, etc.
 - ③ Methods for preventing exposure to asbestos dust, etc., for workers performing demolition work of asbestos-containing buildings, etc.
 - ④ In case of a work plan has been established, it must be made known to the workers concerned.



Demolition



(S1251) Asbestos

(S1251) Asbestos

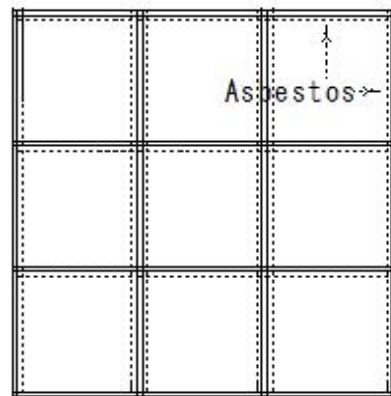
Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 5

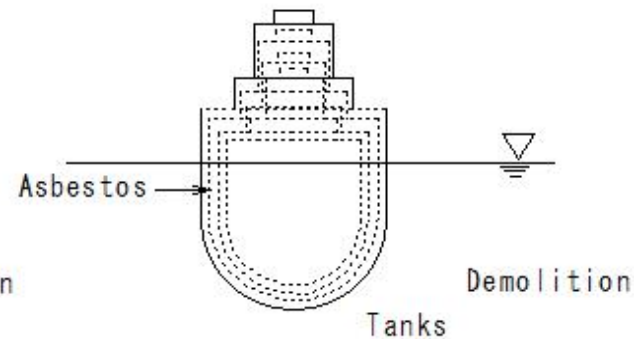
(Notification of Work)

- Submit to the Chief of the Local Labor Standards Inspection Office along with a drawing showing the outline of the building, etc.

- ① Removal of asbestos, etc. sprayed onto buildings, etc. to be demolished, etc.
- ② Removal of insulation materials and fireproof coating materials containing asbestos, etc., attached to buildings, etc. to be demolished, etc.



Demolition



Demolition

Tanks

(S1252) Asbestos

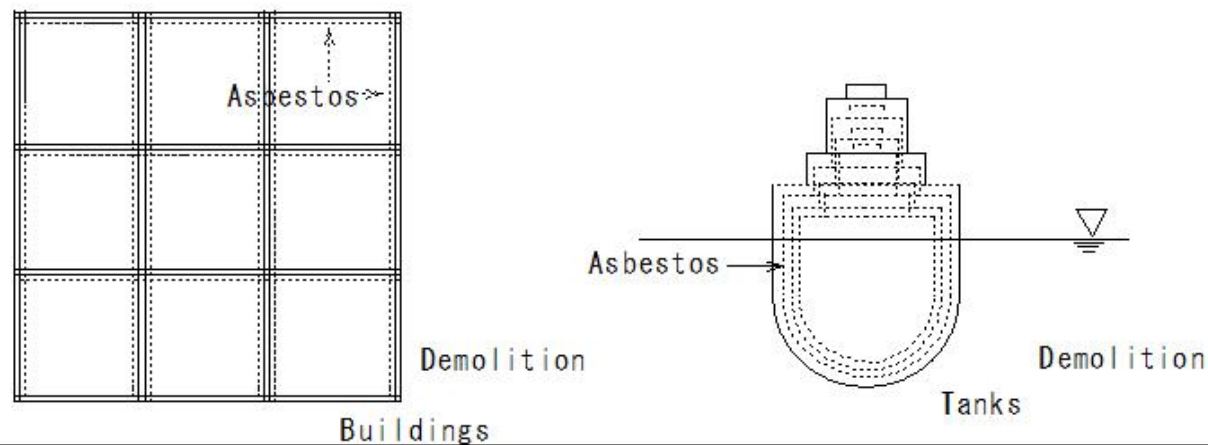
(S1252) Asbestos

Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 6

Isolation and Prohibition of Entry

- ① Removal and containment of sprayed asbestos during demolition of buildings, etc.
- ② Enclosure work involving cutting of asbestos, etc.
- ③ Removal and containment work involving cutting of asbestos from heat-insulating materials, fire-resistant coating materials, and insulation materials
- ④ Containment work



(S1253) Asbestos

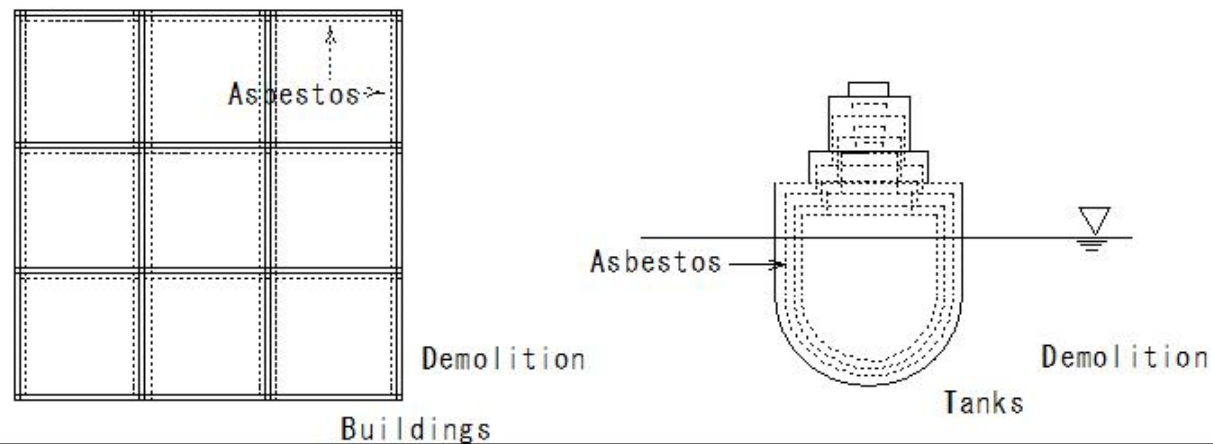
(S1253) Asbestos

Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 7, No. 1

No entry - Displayed in a visible location

- ① Spraying, removing and containing asbestos during demolition of buildings, etc.
- ② Enclosure work involving cutting asbestos, etc.



(S1254) Asbestos

(S1254) Asbestos

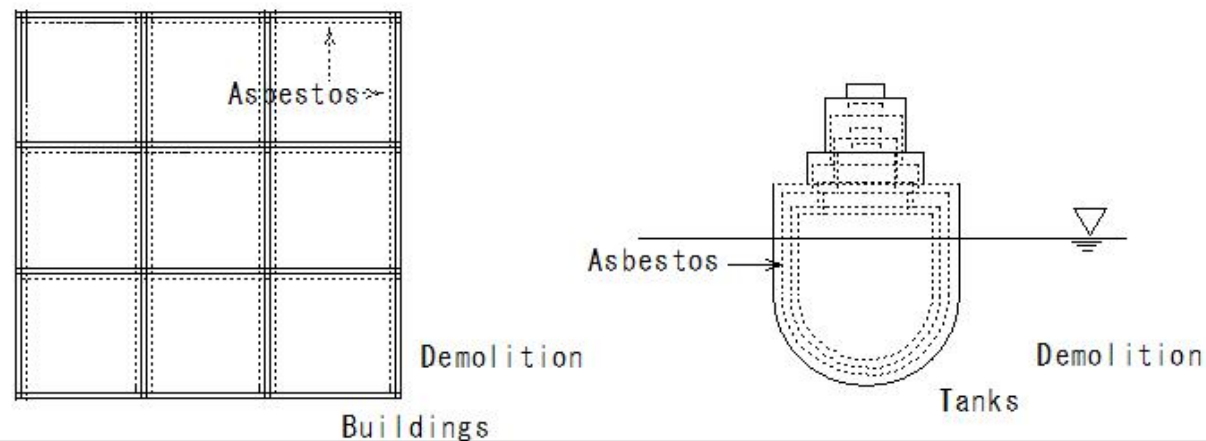
Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 10

Measures relating to work involving the handling of asbestos, etc.

Measures relating to work involving exposure to asbestos dust, etc.

- ① Buildings or ships, or structures installed in said buildings or ships
- ② In case of workers are at risk of exposure to the dust
- ③ Measures such as removal, containment, or enclosure of sprayed asbestos, etc., or asbestos-containing insulation materials, etc.



(S1255) Asbestos

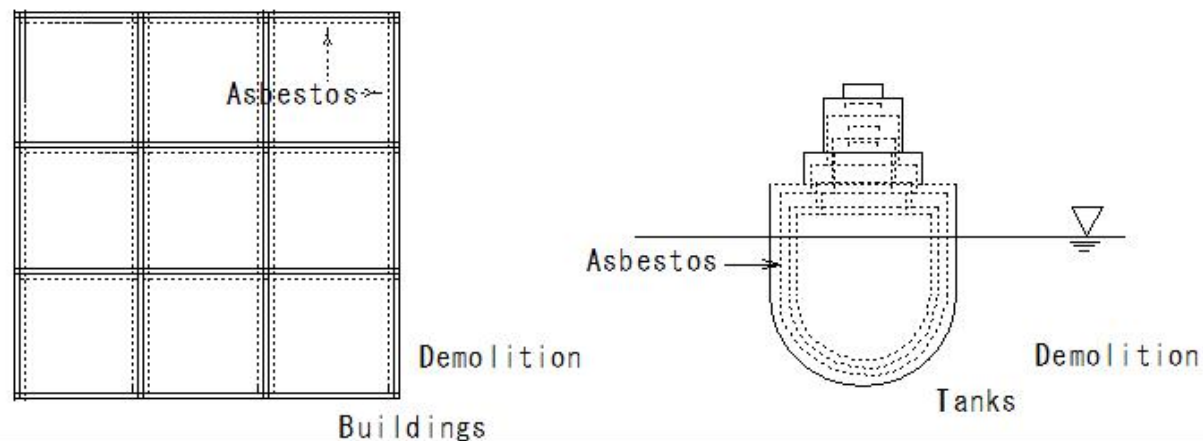
(S1255) Asbestos

Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 13

(Measures for work such as cutting asbestos, etc.)

- ① Asbestos, etc. must be kept in a moist state.
- ② Electric tools with dust removal capabilities must be used.
- ③ Measures must be taken to prevent the dispersion of asbestos, etc. dust.



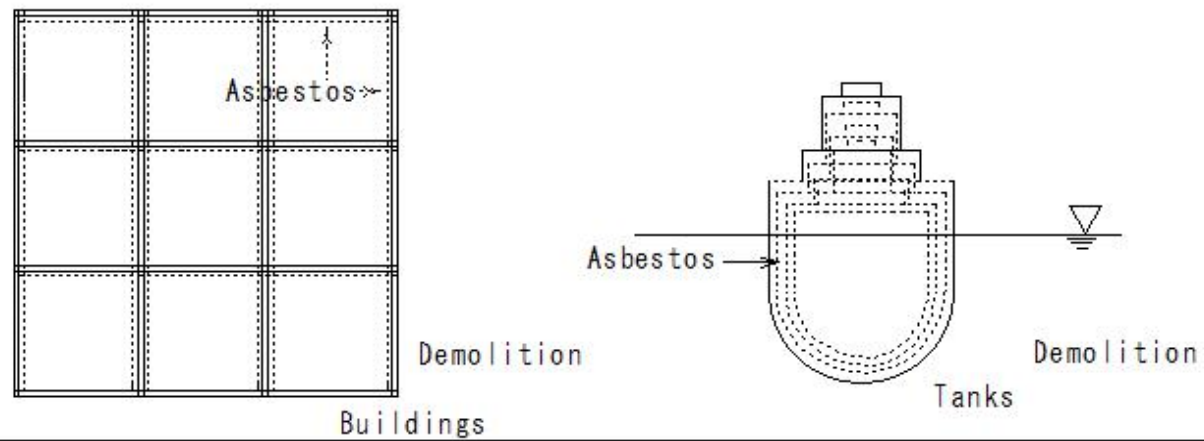
(S1256) Asbestos

(S1256) Asbestos

Asbestos Hazard Prevention Regulations

Article 19 of the Asbestos Regulations

(Appointment of Asbestos Work Supervisor)



(S1257) Asbestos

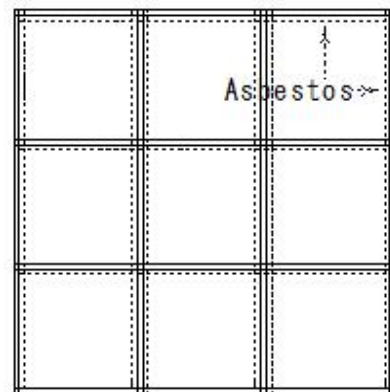
(S1257) Asbestos

Asbestos Hazard Prevention Regulations

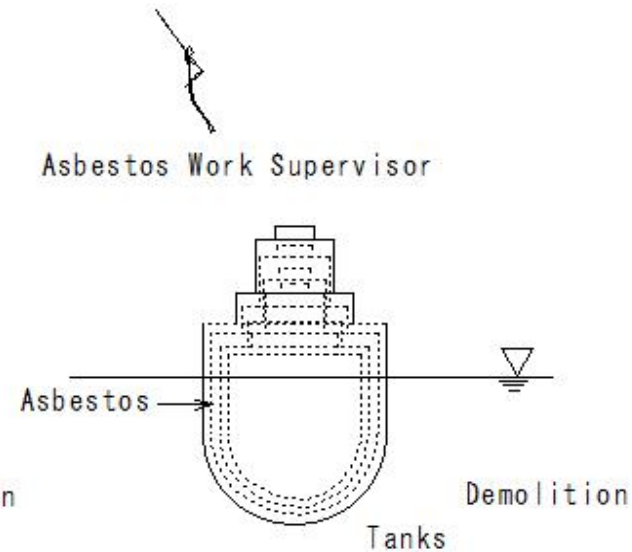
Asbestos Regulations Article 20

(Duties of Asbestos Work Supervisor)

- ① Determine the work method and supervise workers so as not to become contaminated by or inhale asbestos dust.
- ② Local exhaust ventilation systems, push-pull type ventilation systems, and dust removal systems - inspect them at intervals not exceeding one month.
- ③ Monitor the use of protective equipment.



Buildings



Asbestos Work Supervisor

(S1258) Asbestos

(S1258) Asbestos

Asbestos Hazard Prevention Regulations

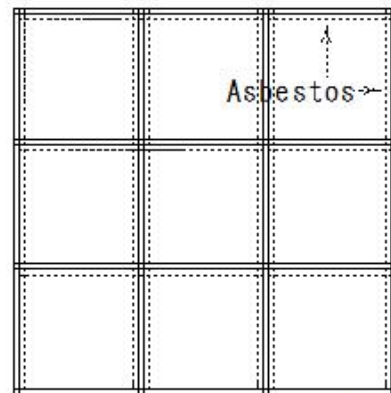
Asbestos Regulations Article 27 • 36

(Special education)

1. Harmfulness of asbestos
2. Usage status of asbestos, etc.
3. Measures to prevent the dispersion of asbestos dust, etc.
4. How to use protective equipment
5. Prevention of exposure to asbestos dust, etc.

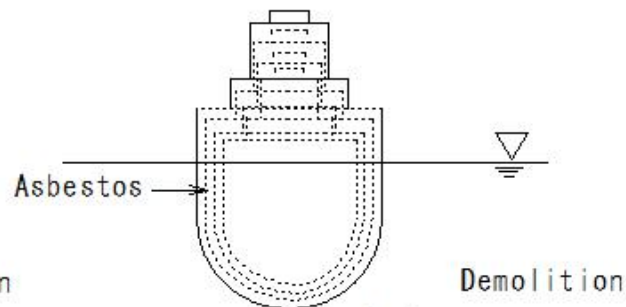


(Special education)



Buildings

Demolition



Tanks

(S1259) Asbestos

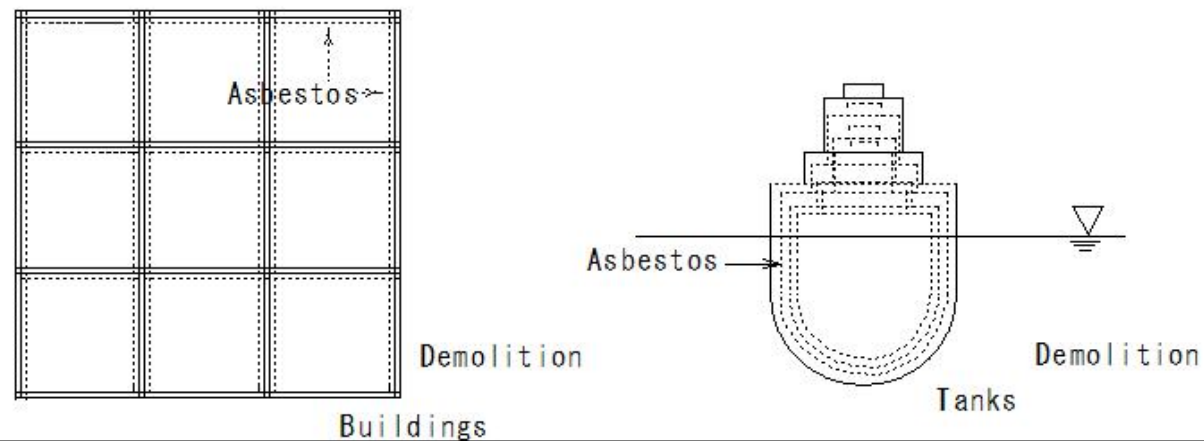
(S1259) Asbestos

Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 31

(Washing facilities)

- ① Work involving handling asbestos, manufacturing for testing and research, or manufacturing samples for asbestos analysis
- ② Equipment for washing eyes, washing the body or gargling, changing facilities and laundry facilities.



(S1260) Asbestos

(S1260) Asbestos

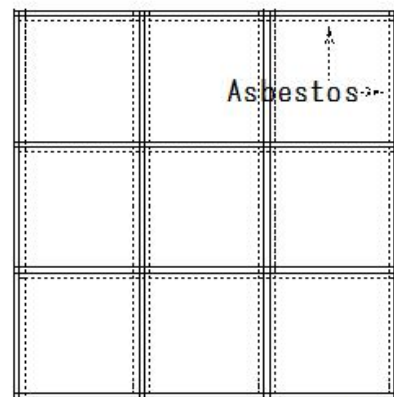
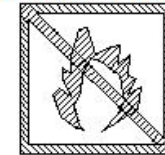
Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 33

(Prohibition of smoking, etc.)

① Smoking, eating, or drinking in the workplace is prohibited.

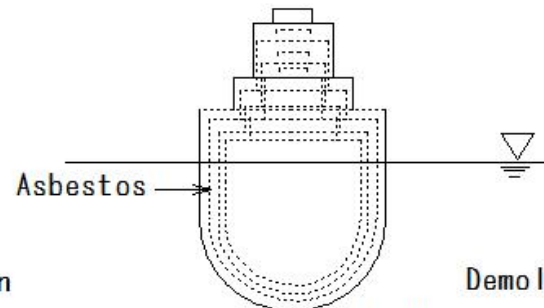
No open flames



Asbestos

Demolition

Buildings



Asbestos

Demolition

Tanks

(S1261) Asbestos

(S1261) Asbestos

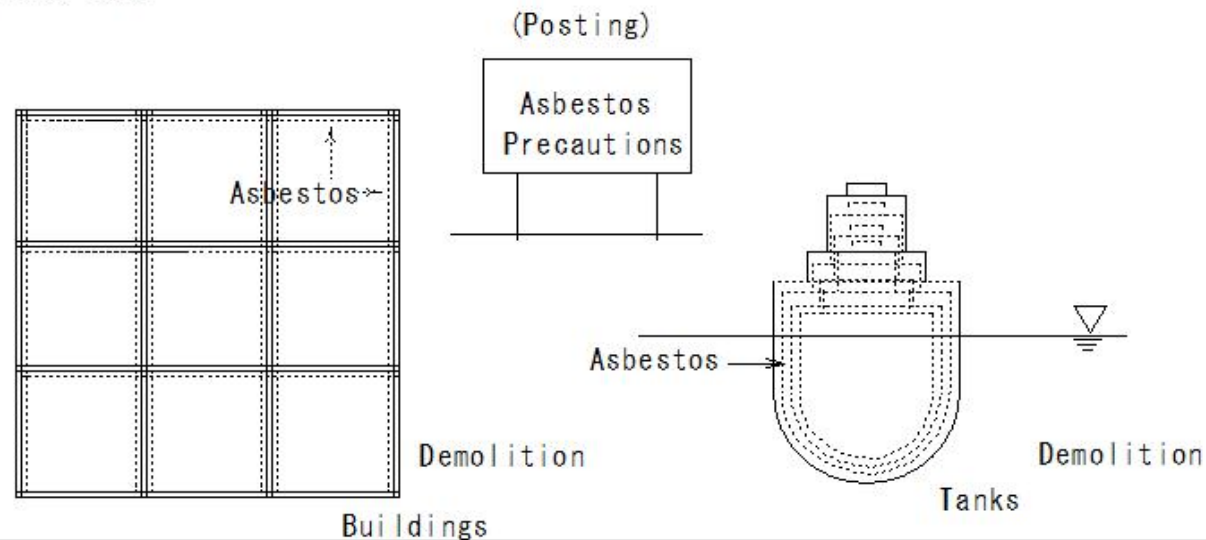
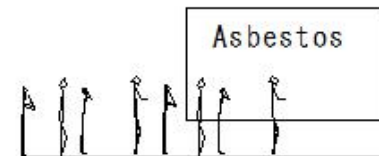
Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 34

(Posting)

- Workplaces where asbestos, etc. are handled or manufactured
- Posting in a conspicuous place

- ① Workplaces where asbestos, etc. are handled or manufactured
- ② Types of diseases that may be caused by asbestos and their symptoms
- ③ Precautions for handling asbestos, etc.
- ④ Protective equipment, etc.



(S1262) Asbestos

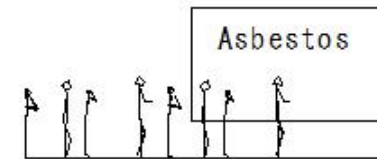
(S1262) Asbestos

Asbestos Hazard Prevention Regulations

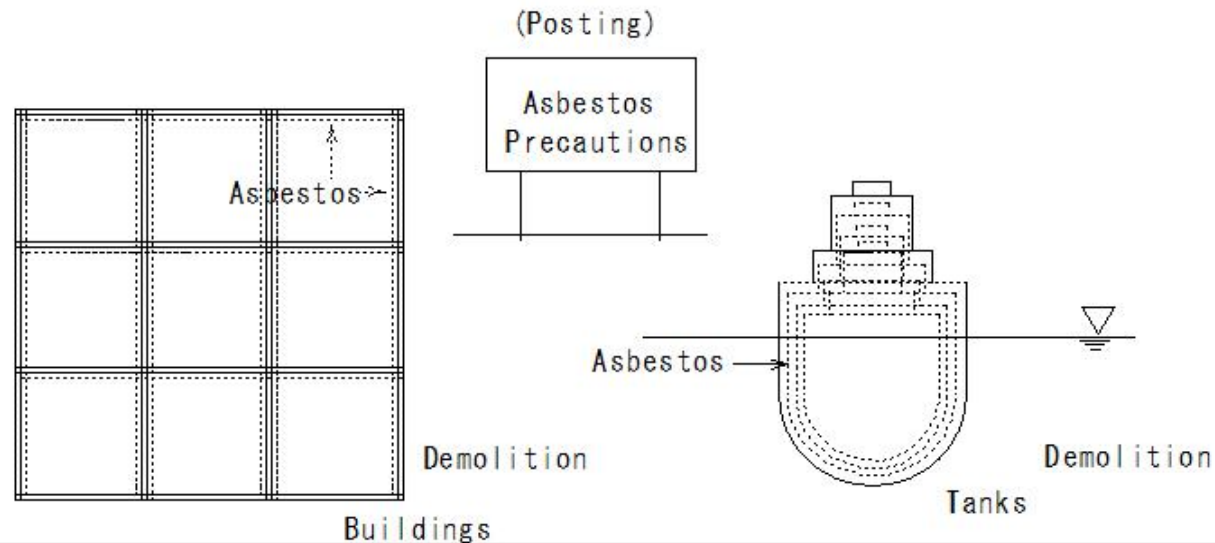
Asbestos Regulations Article 22

(Regular Voluntary Inspection)

- Periodic voluntary inspection once every year
- ① Local exhaust ventilation system
- ② Push-pull type ventilation system
- ③ Dust removal equipment



(Regular Voluntary Inspection)



(S1263) Asbestos

(S1263) Asbestos

Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 24・25

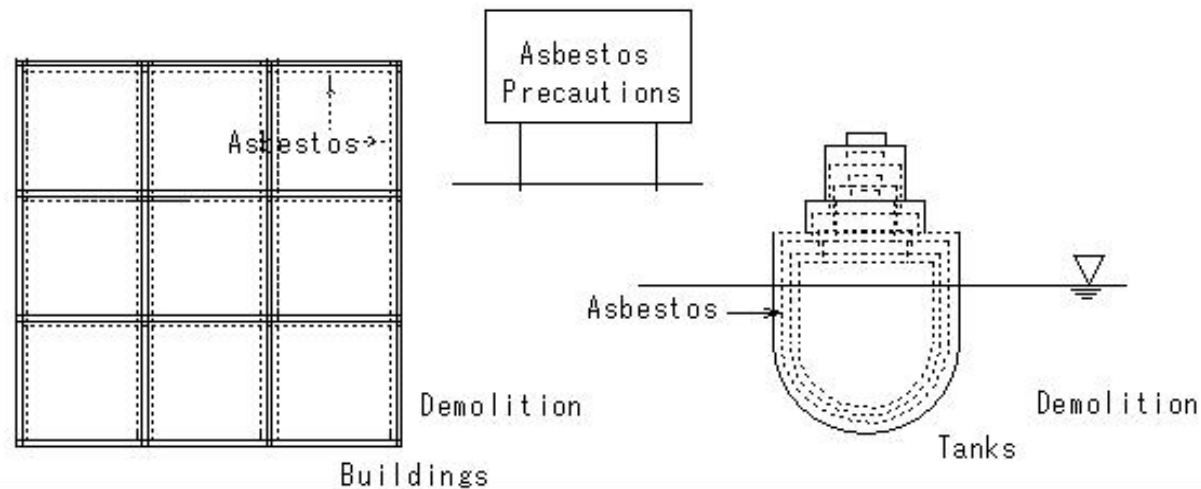
(Inspection Record)

○ Record the inspection and keep it for three years.

- ① Inspection date ② Inspection method ③ Inspection location ④ Inspection results
⑤ Name of person who carried out the inspection ⑥ Details of repairs or other measures

(Inspection)

(Posting)



(S1264) Asbestos

(S1264) Asbestos

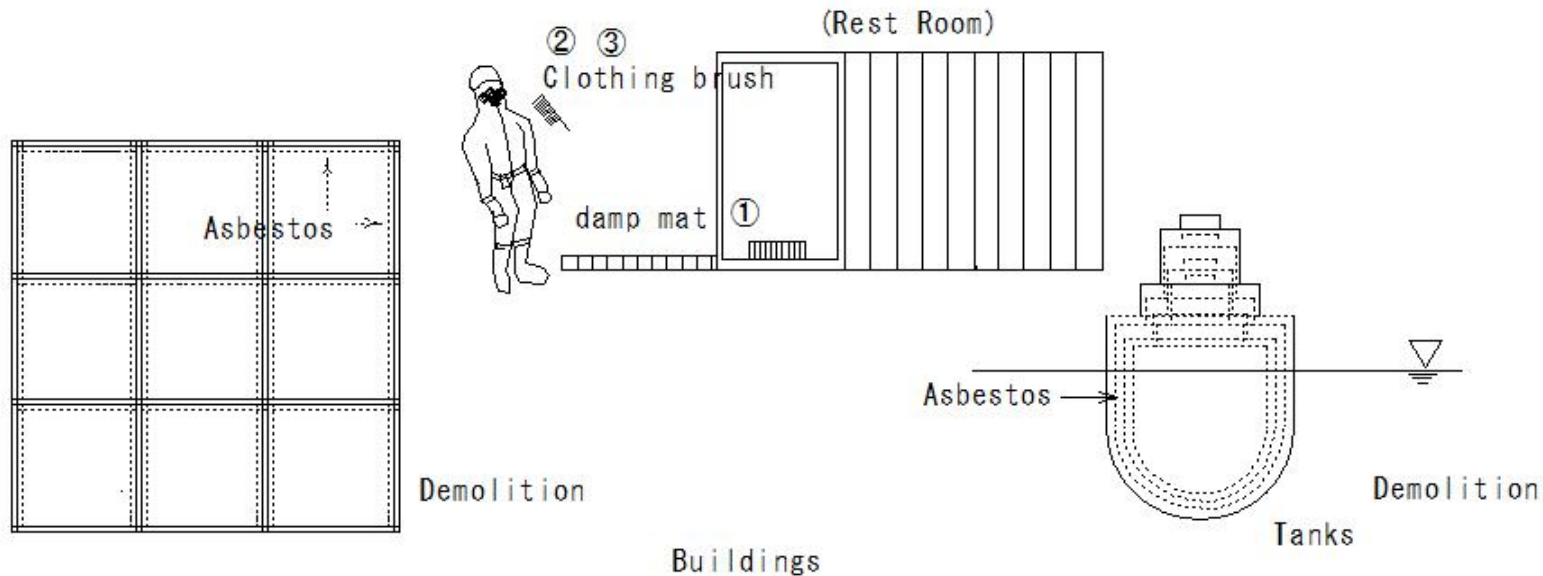
Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 28

(Rest Room)

○Rest rooms must be provided in locations other than the workplace.

- ① Equipment must be provided at the entrance, such as running water or placing a sufficiently damp mat, to remove any material adhering to worker's feet.
- ② A clothing brush must be provided at the entrance.
- ③ Materials adhering to work clothes, etc. must be removed before entering the rest room.



(S1265) Asbestos

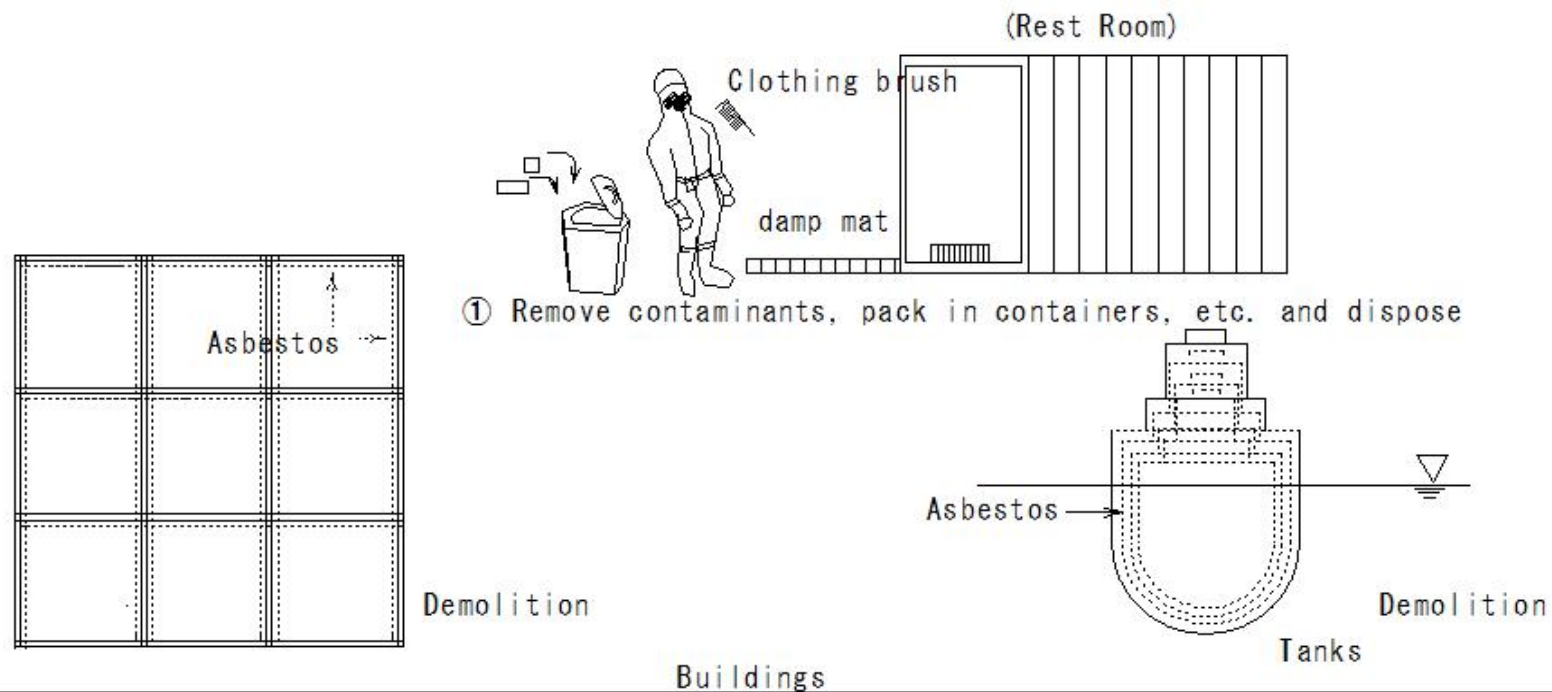
(S1265) Asbestos

Asbestos Hazard Prevention Regulations

Article 32-2 of the Asbestos Regulations

(Removal of contaminants from used equipment, etc.)

- ① Remove contaminants, pack in containers, etc. and dispose

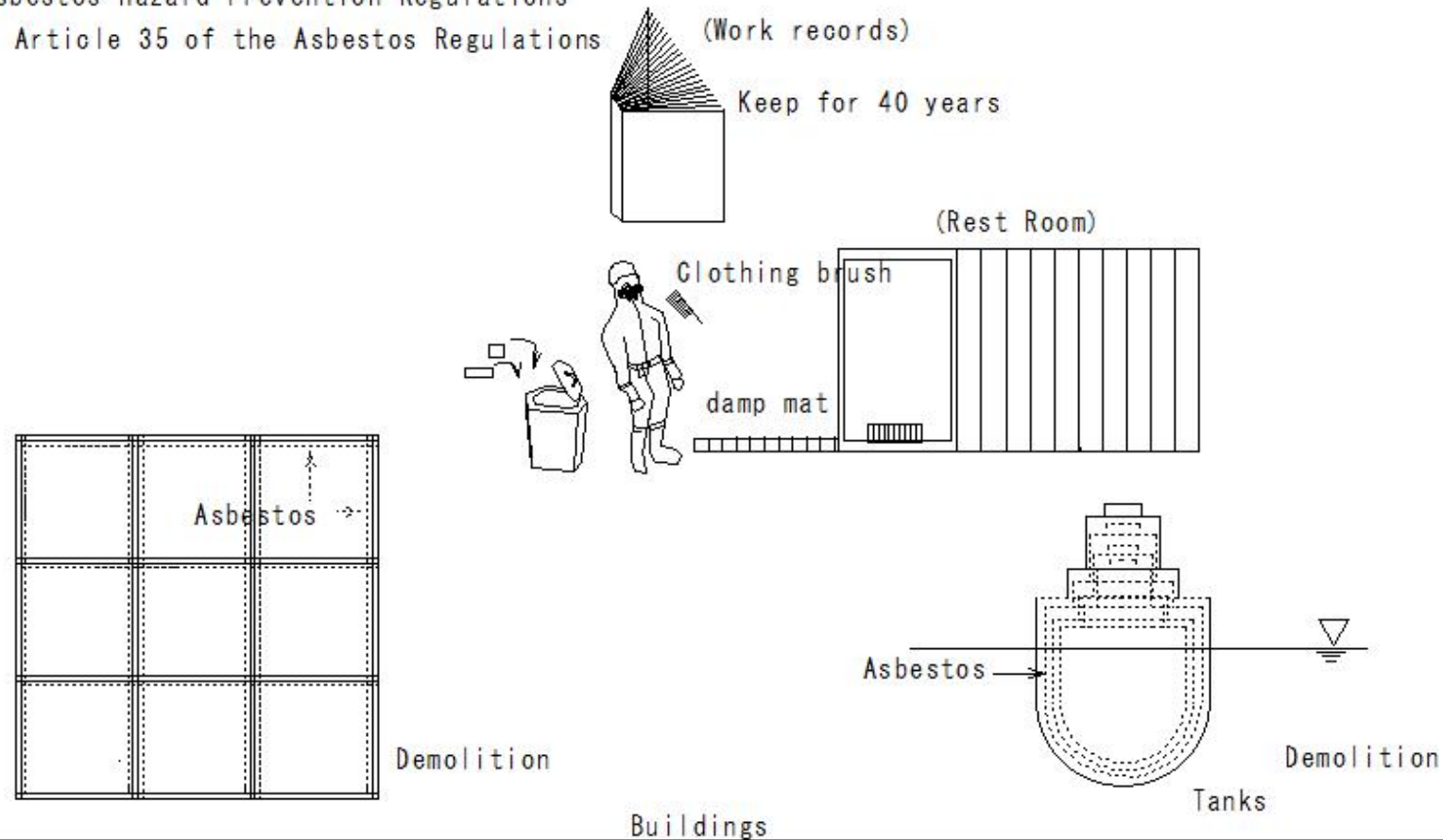


(S1266) Asbestos

(S1266) Asbestos

Asbestos Hazard Prevention Regulations

Article 35 of the Asbestos Regulations



(S1267) Asbestos

(S1267) Asbestos

Asbestos Hazard Prevention Regulations

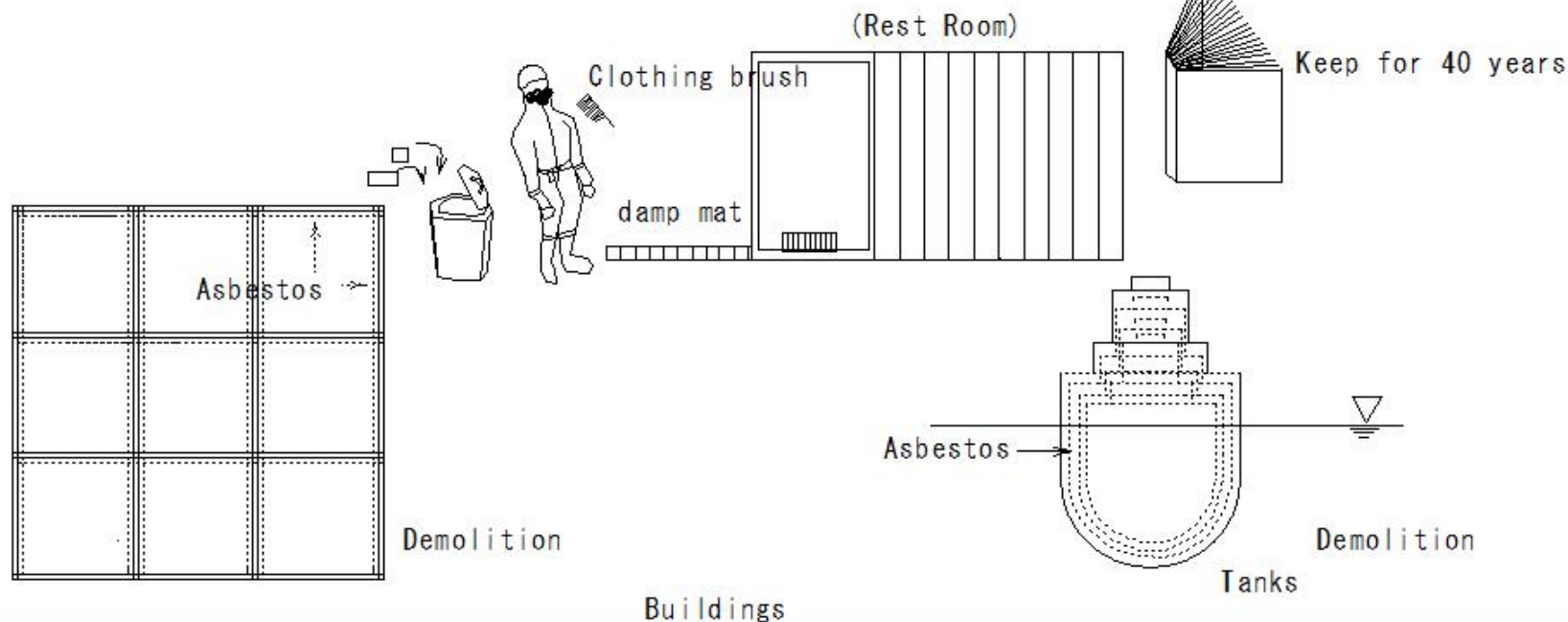
Asbestos Regulations Article 36

(Measurement and Records)

- ① Measure the concentration of asbestos in the air on a regular basis, once every six months
- ② Measure and record, and keep records for 40 years.

(Measurement and Records)

Keep for 40 years



(S1268) Asbestos

(S1268) Asbestos

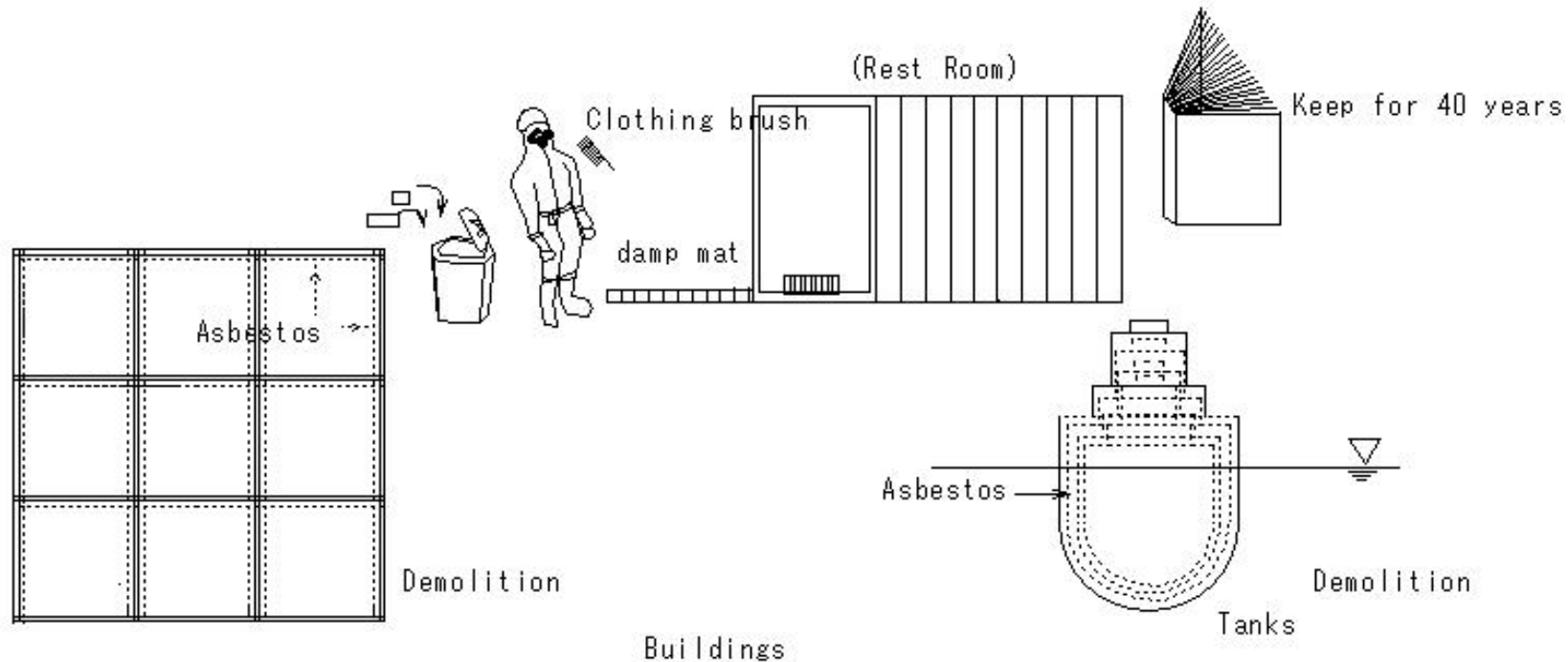
Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 37

(Evaluation of measurement results)

- ① Classify the measurement results into the first, second or third management category
- ② Must be kept for 40 years.

(Evaluation of measurement results)



(S1269) Asbestos

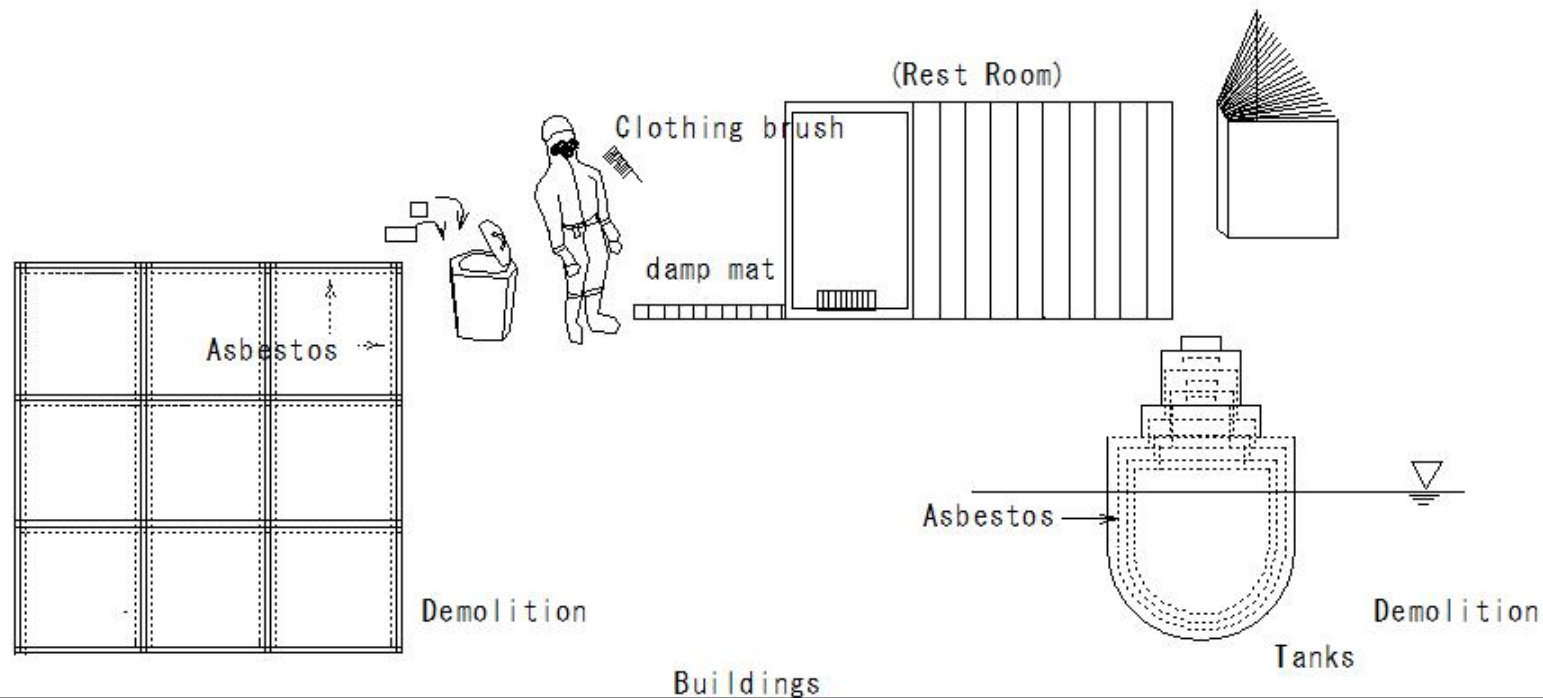
(S1269) Asbestos

Asbestos Hazard Prevention Regulations

Article 38, paragraph 1 of the Asbestos Regulations

(Measures based on the results of the evaluation)

- ① Areas classified as the third management category will be inspected immediately
- ② Measures taken to improve the working environment



(S1270) Asbestos

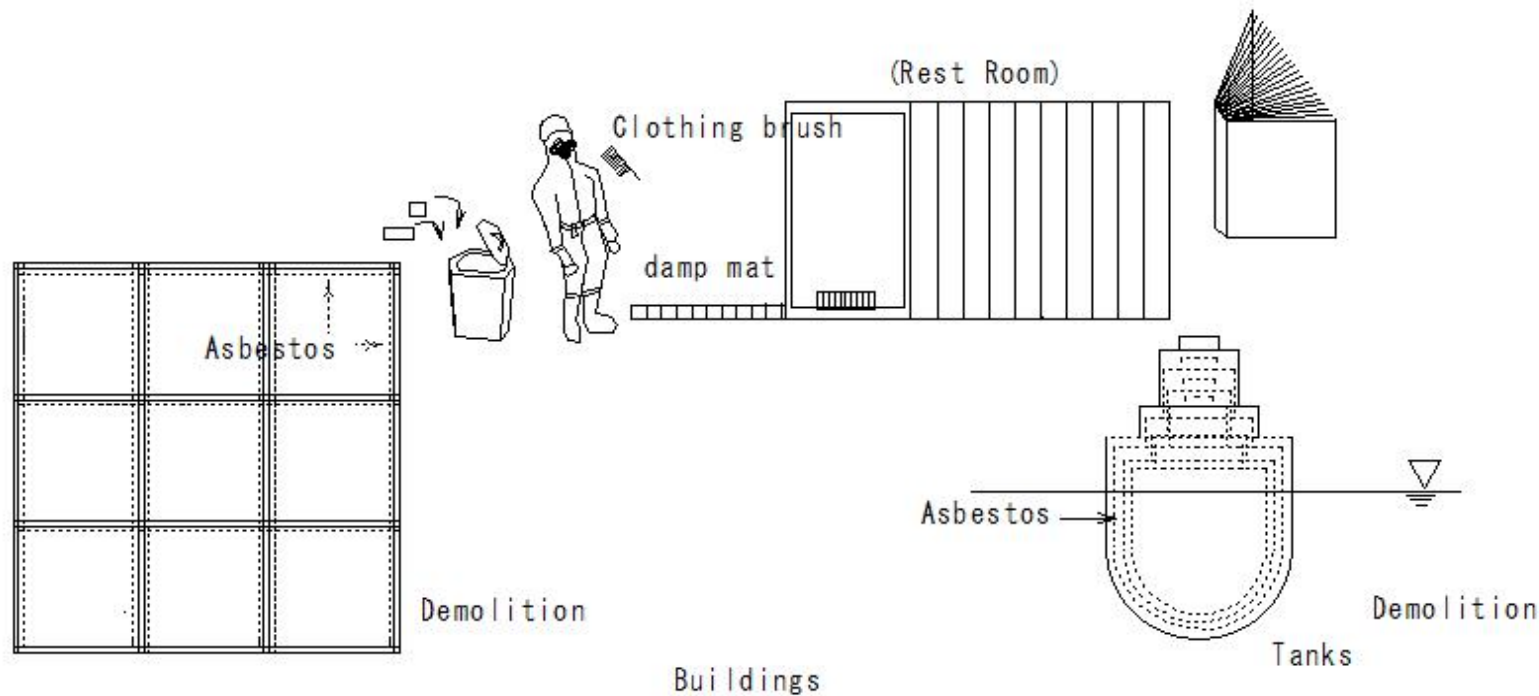
(S1270) Asbestos

Asbestos Hazard Prevention Regulations

Article 38, paragraph 2 of the Asbestos Regulations

(Measures based on the results of the evaluation)

- ① To confirm the results, the concentration of specific asbestos at the location is measured and the results are evaluated.



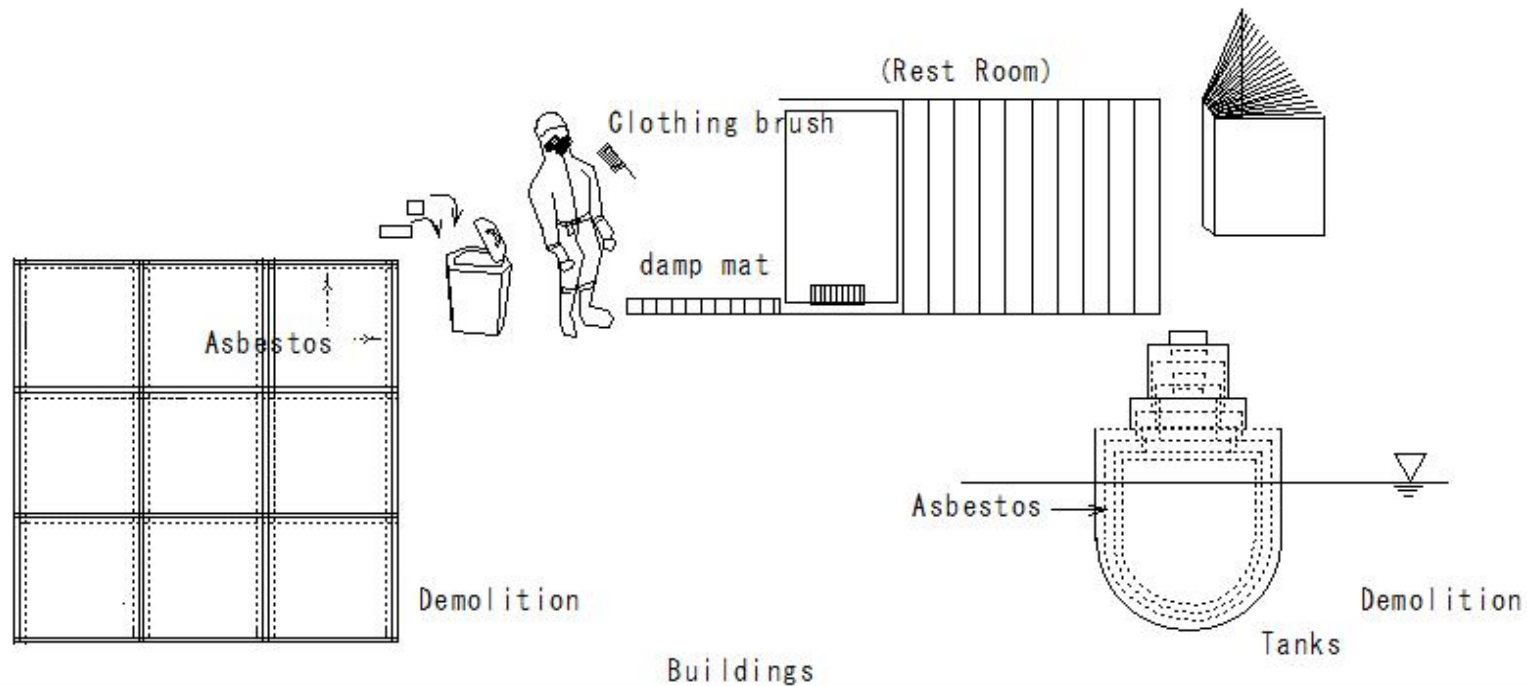
(S1271) Asbestos

(S1271) Asbestos

Asbestos Hazard Prevention Regulations

Article 38. paragraph 2 of the Asbestos Regulations

- ① Have workers use effective respiratory protective equipment
- ② Conduct health examinations and take other necessary measures to maintain the health of workers
- ③ Inform workers



(S1272) Asbestos

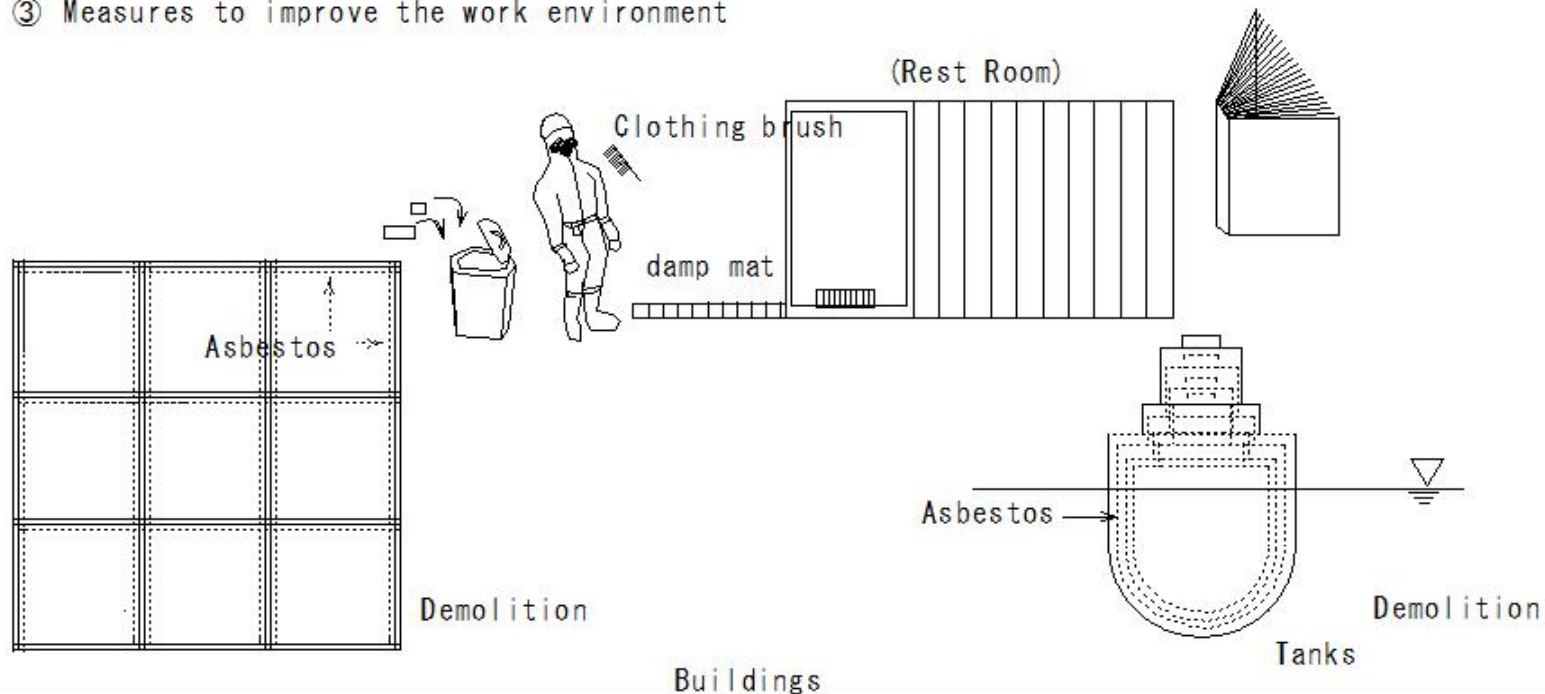
(S1272) Asbestos

Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 39

(Measures based on the results of the evaluation)

- ① For areas classified as the second management category
- ② Inspect the facilities, equipment, work processes or work methods
- ③ Measures to improve the work environment



(S1273) Asbestos

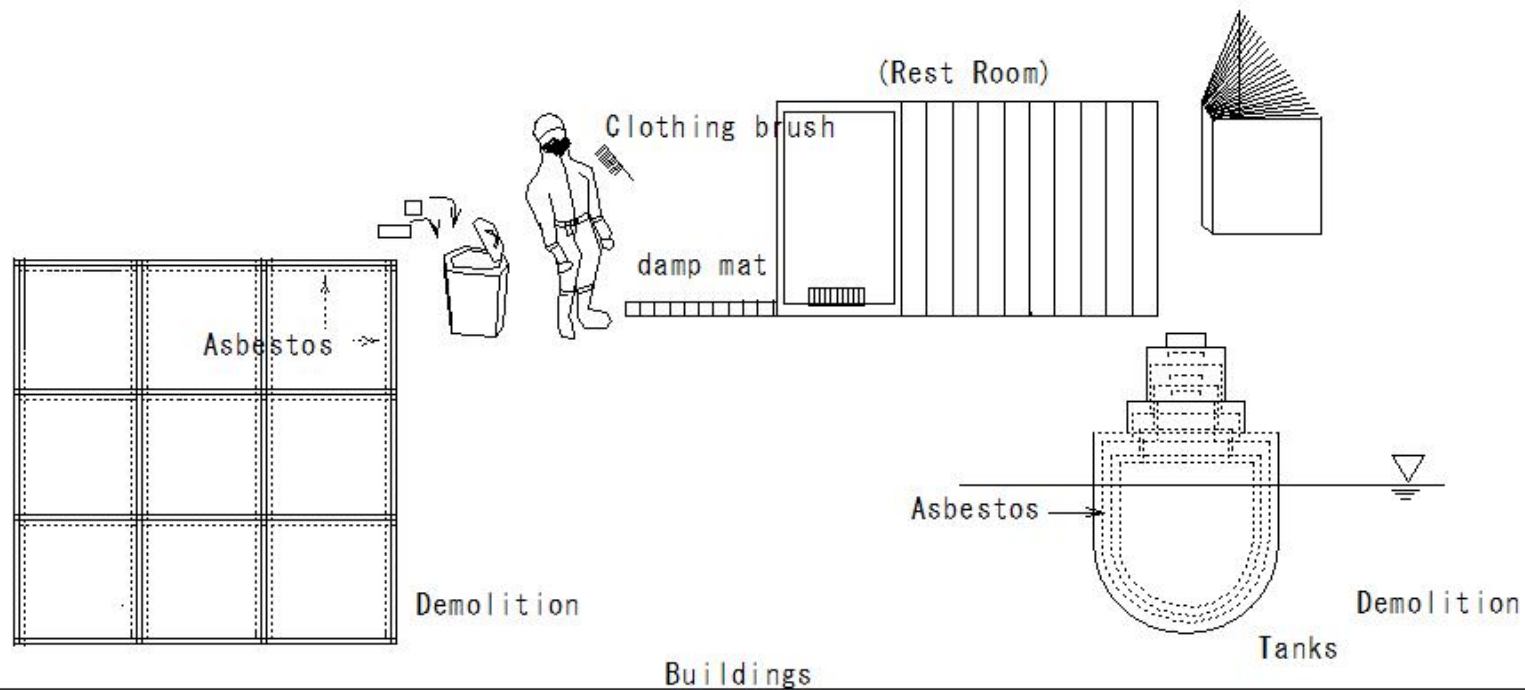
(S1273) Asbestos

Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 40

(Implementation of health examinations)

- ① Regular health examinations must be conducted once every six months.



(S1274) Asbestos

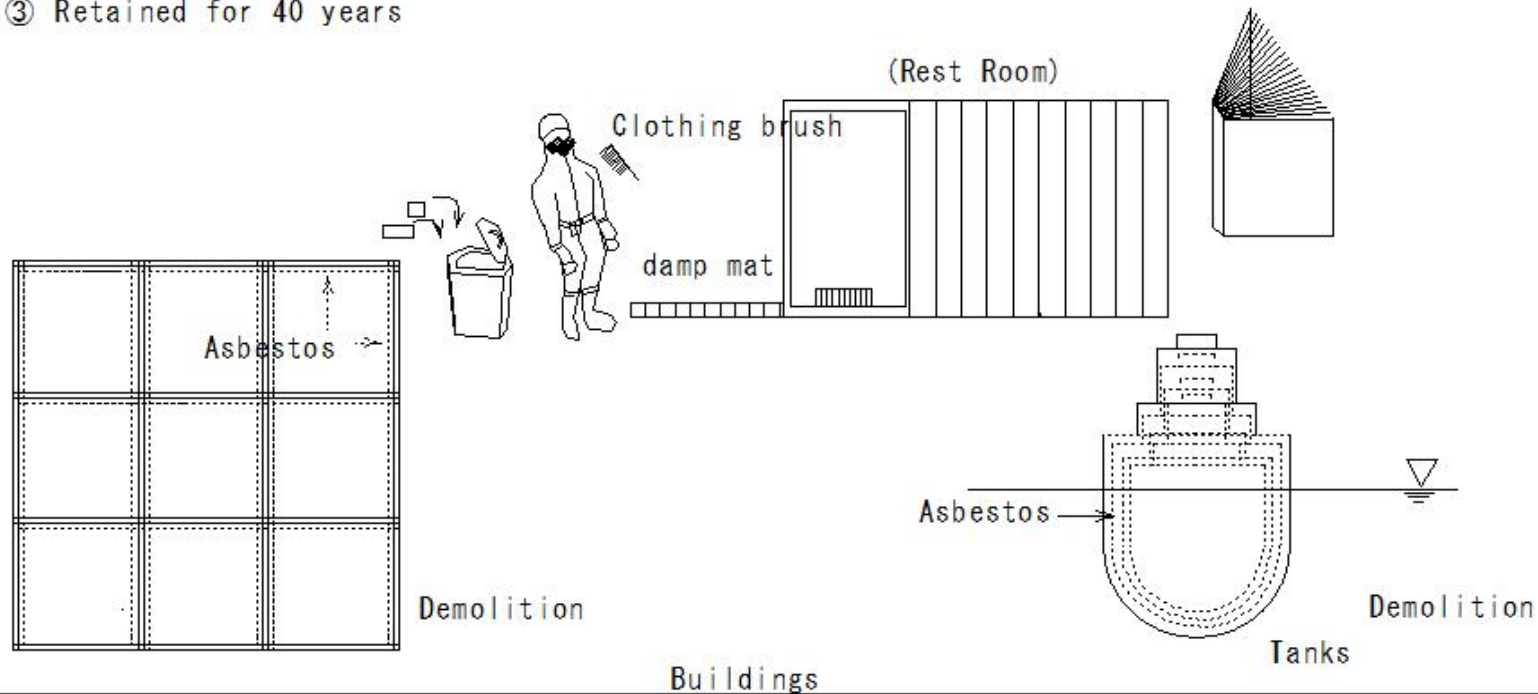
(S1274) Asbestos

Asbestos Hazard Prevention Regulations

Asbestos Regulations Articles 41, 42, and 42-2

(Recording of health examination results)

- ① Asbestos health examination results
- ② Asbestos health examination individual record
- ③ Retained for 40 years



(S1275) Asbestos

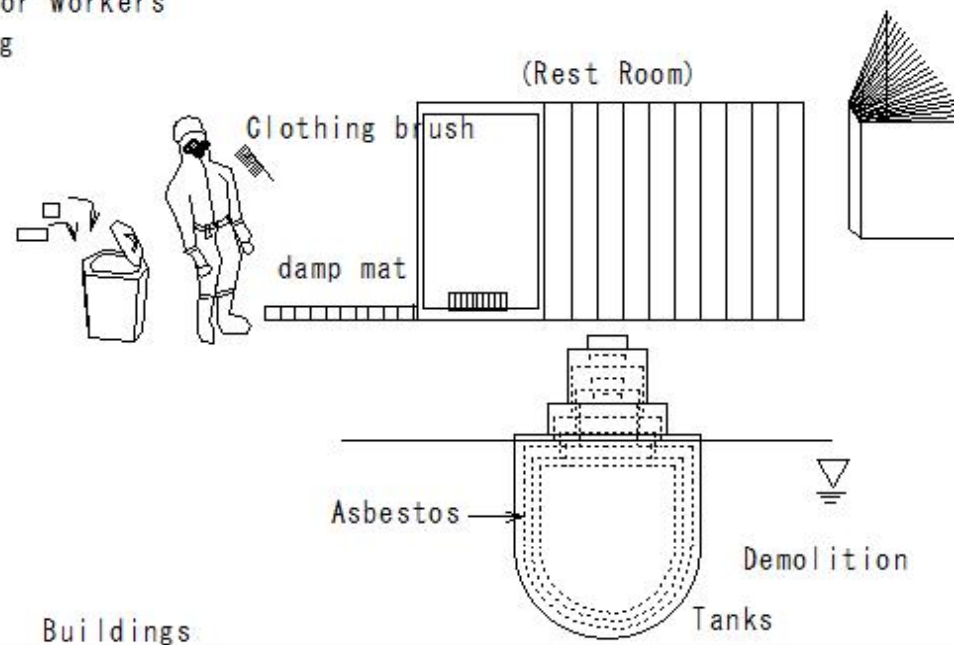
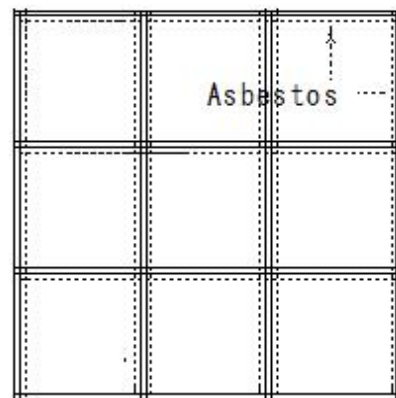
(S1275) Asbestos

Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 14 • 44

(Measures related to work such as cutting asbestos, etc.)

1. Respiratory protective equipment/electric fan-equipped respiratory protective equipment with dust-proofing function
2. Respiratory protective equipment/electric fan-equipped respiratory protective equipment, etc.
3. Work clothes/protective clothing for workers
4. Work clothes or protective clothing
5. Protective equipment, etc.



(S1276) Asbestos

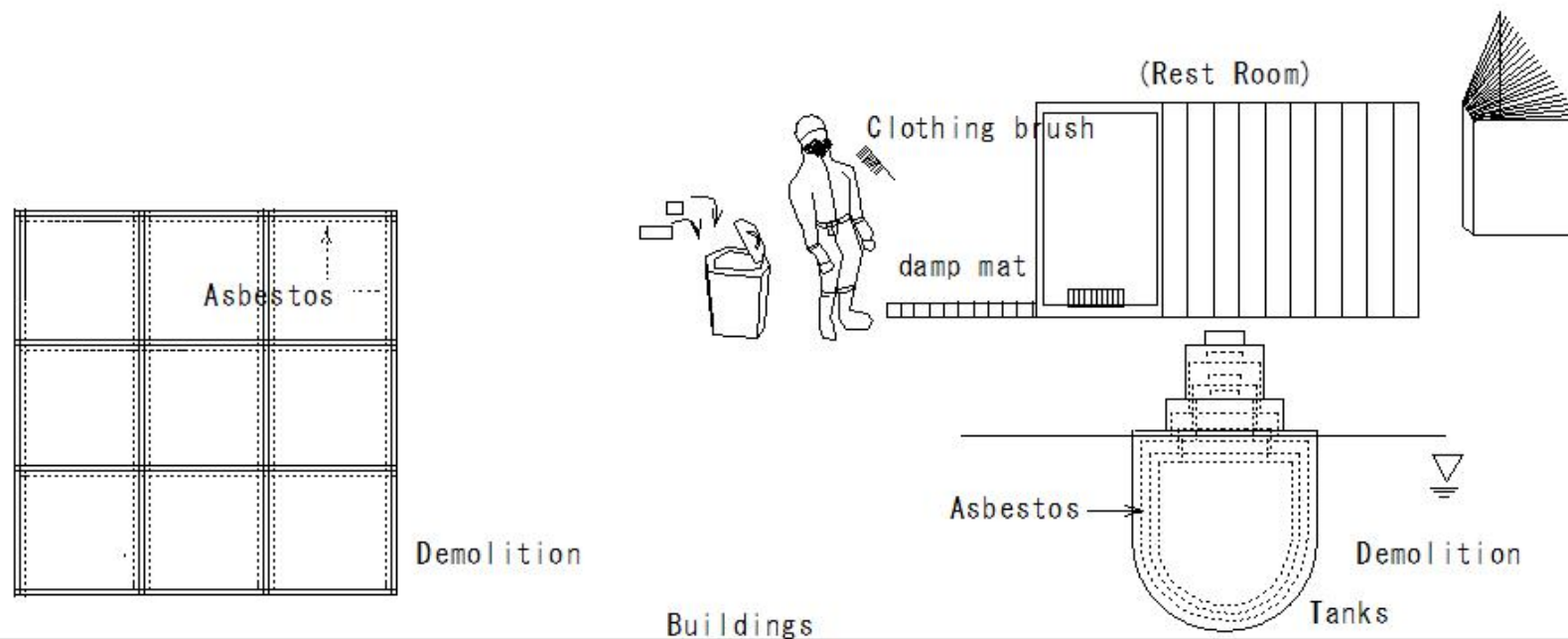
(S1276) Asbestos

Asbestos Hazard Prevention Regulations

Asbestos Regulations Article 7, No. 2

(Measures for Work Not Involving Cutting of Asbestos, etc.)

- ① In case of work such as cutting asbestos, etc. is carried out in the same place
- ② Before the start of the work, the relevant contractors must be notified of the implementation
- ③ Necessary measures such as adjusting the work hours must be taken.



(S1277) Dust Hazard

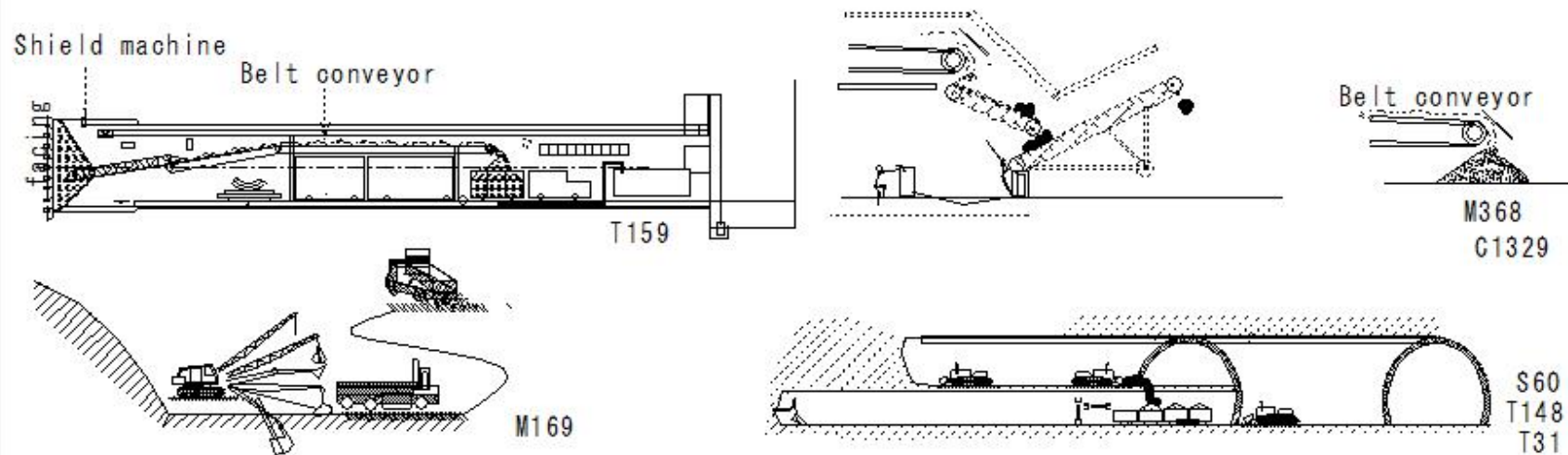
(S1277) Dust Hazard

Dust Hazard Prevention Regulations

Dust Regulations Article 2

Specific dust sources

- ① Inside the mine: Places where minerals, etc. are excavated by power
- ② Places where minerals, etc. are crushed, pulverized, or sieved by power
- ③ Places where minerals are loaded or unloaded by vehicle construction machinery such as piers
- ④ Places where minerals, etc. are loaded onto or unloaded from conveyors



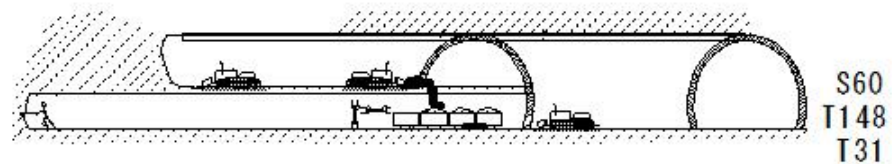
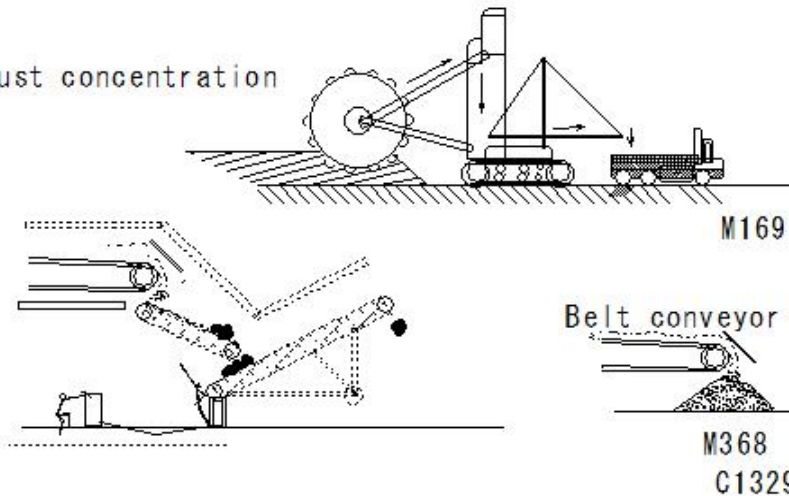
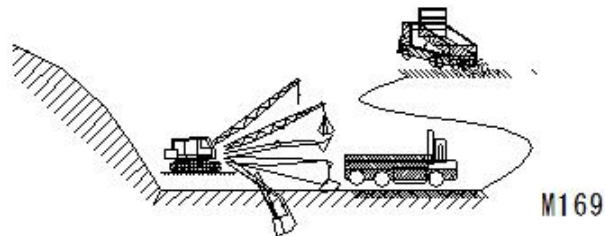
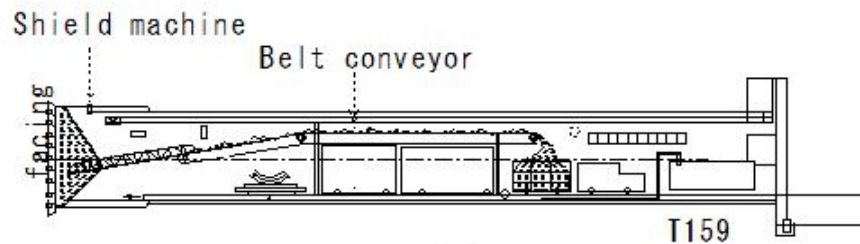
(S1278) Dust Hazard

(S1278) Dust Hazard

Dust Hazard Prevention Regulations

Dust Law Article 2

- ① In order to prevent dust hazards such as pneumoconiosis, the Pneumoconiosis Law and Dust Hazard Prevention Regulations
- ② The dust source is a specific dust source
- ③ Pneumoconiosis Health Check
- ④ Measurement results and measurement method for dust concentration



(S1279) Dust Hazard

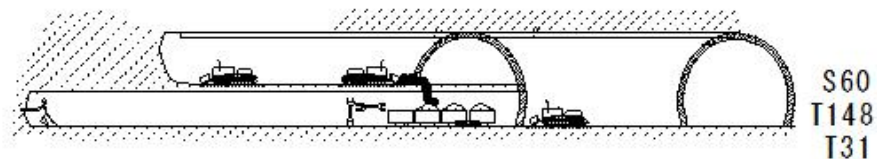
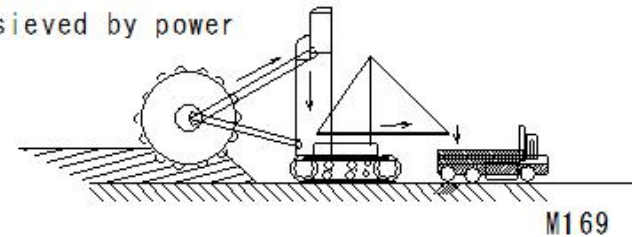
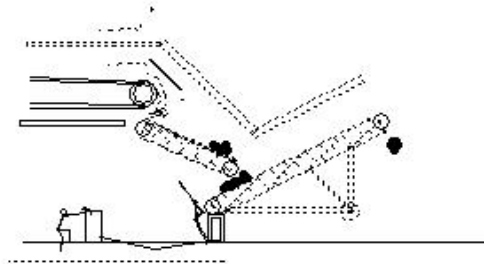
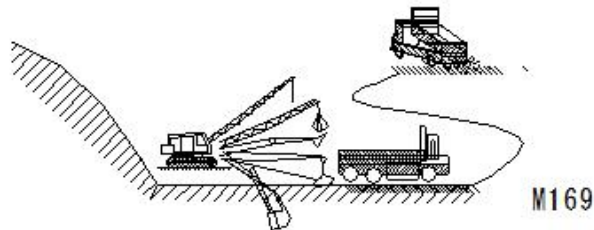
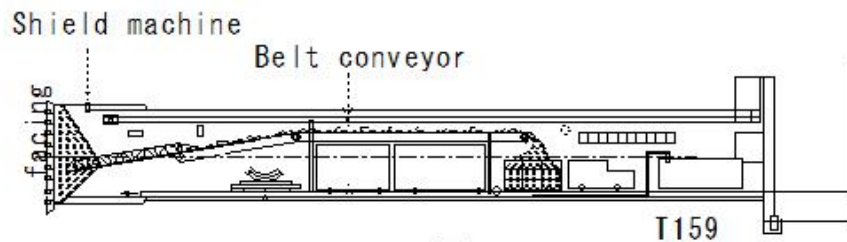
(S1279) Dust Hazard

Dust Hazard Prevention Regulations

Dust Regulations Article 2

Specific dust sources

- ① Inside the mine: Places where minerals, etc. are excavated by power
- ② Places where minerals, etc. are crushed, pulverized, or sieved by power
- ③ Places where minerals, etc. are loaded or unloaded by vehicle construction machinery such as pilers
- ④ Places where minerals, etc. are loaded onto or unloaded from conveyors



(S1280) Dust Hazard

(S1280) Dust Hazard

Dust Hazard Prevention Regulations

Article 1 of the Dust Rules

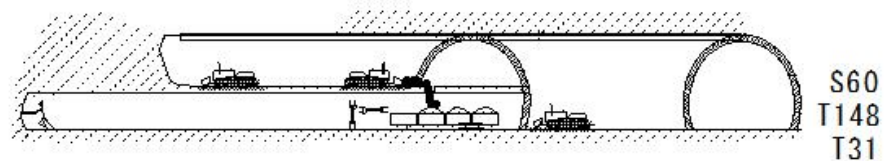
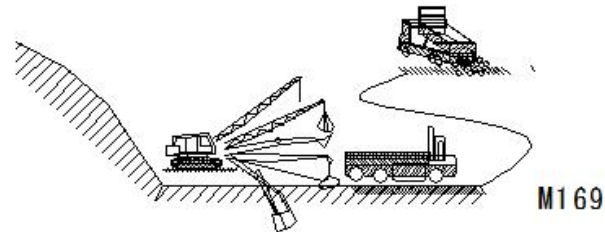
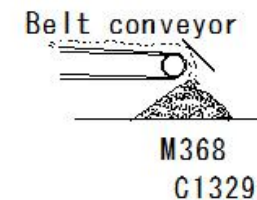
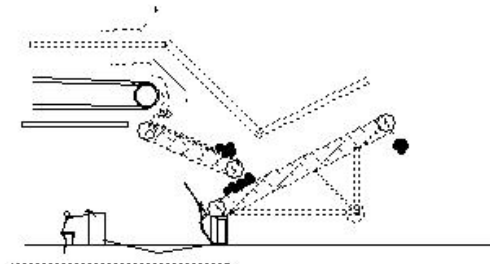
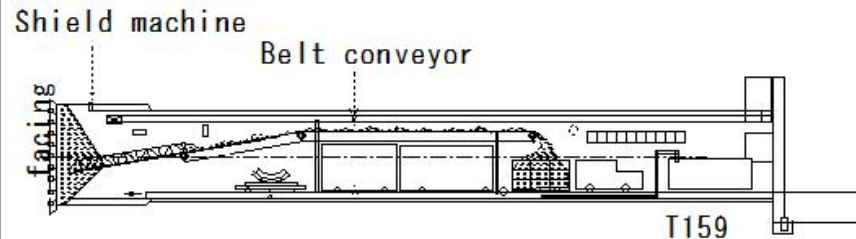
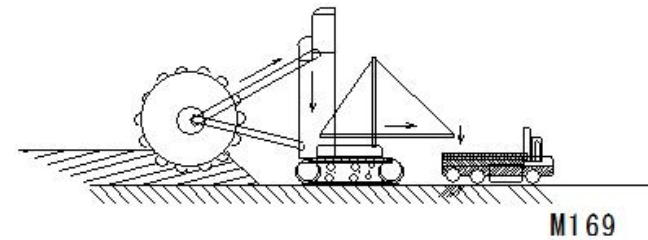
(Employer responsibilities)

① Prevention of health hazards – Improvement of equipment

Improvement of equipment, work processes or work methods,
improvement of work environment

② Measures for health management

Health checkups, change of place of work, change of work,
reduction of work hours



(S1281) Dust Hazard

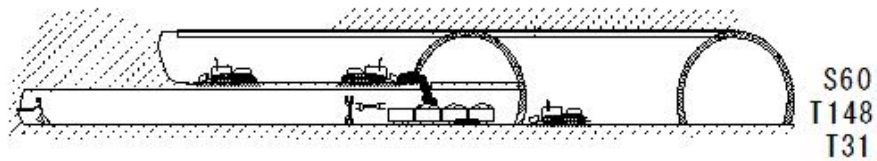
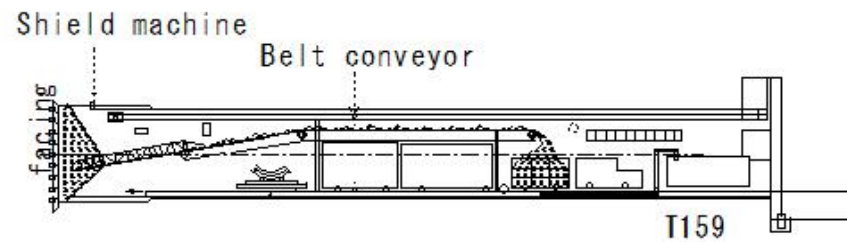
(S1281) Dust Hazard

Dust Hazard Prevention Regulations

Dust Regulations Article 6-2

(Implementation of ventilation, etc.)

- ① To reduce dust associated with dusty work
- ② Implementation of ventilation using ventilation equipment



(S1282) Dust Hazard

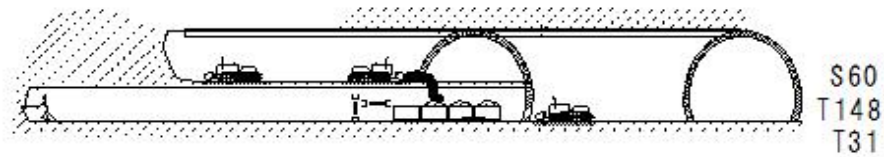
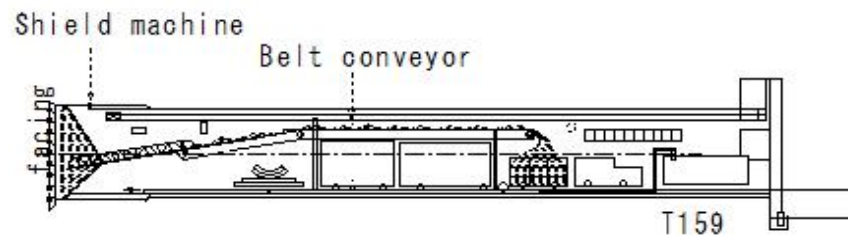
(S1282) Dust Hazard

Dust Hazard Prevention Regulations

Article 6-3 of the Dust Law

Measure dust concentration

- ① Dusty work: Measure dust concentration
- ② Measure regularly, once every two weeks



(S1283) Dust Hazard

(S1283) Dust Hazard

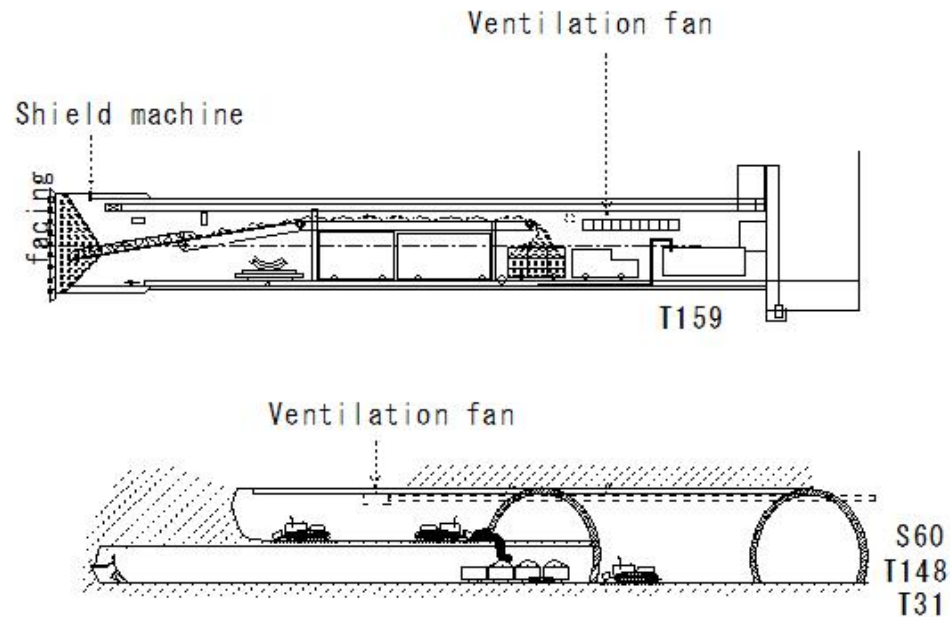
Dust Hazard Prevention Regulations

Dust Regulations Article 6-4

○ Increasing the airflow of ventilation equipment and other necessary measures

① Depending on the results of measurements of the dust concentration in the air

② The ventilation equipment's airflow must be increased and other necessary measures must be taken.



(S1284) Dust Hazard

(S1284) Dust Hazard

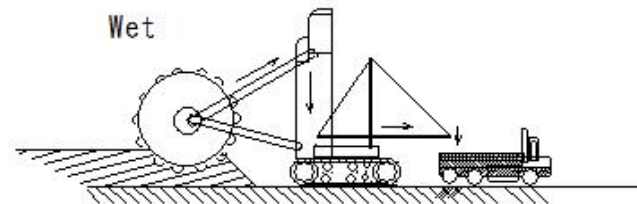
Dust Hazard Prevention Regulations

Article 4 of the Dust Law

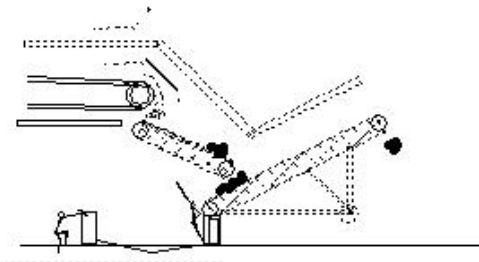
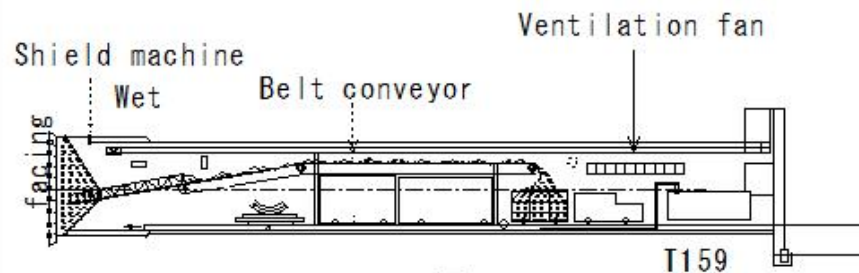
(Measures for specific dust sources)

The impact drill used in the area must be of the wet type.

- ① Equipment must be installed to seal the area.
- ② Equipment must be installed to keep the area moist.



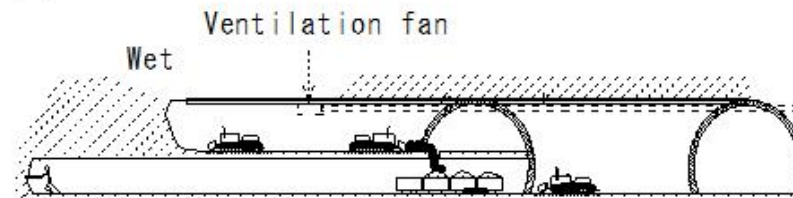
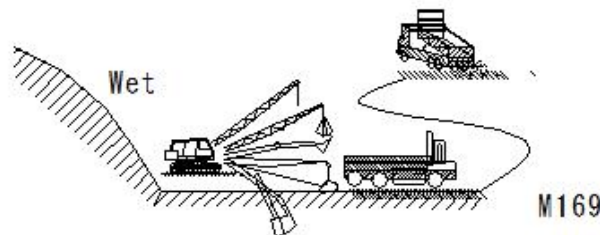
M169



Belt conveyor

M368

C1329



S60

T148

T31

(S1285) Dust Hazard

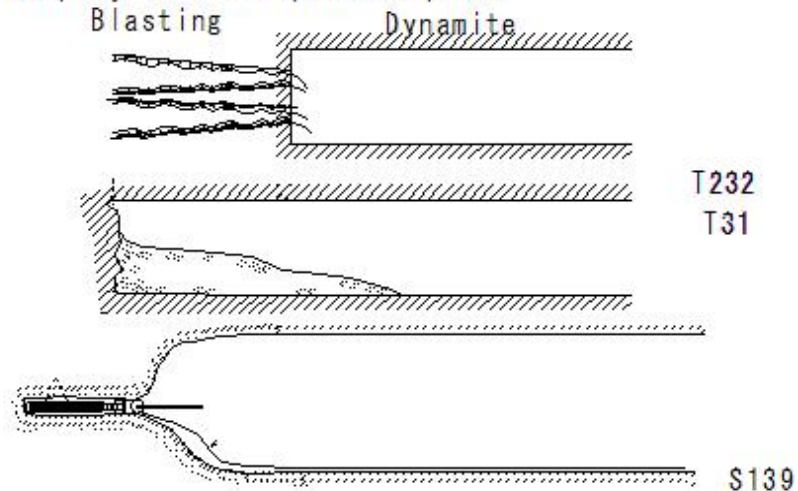
(S1285) Dust Hazard

Dust Hazard Prevention Regulations

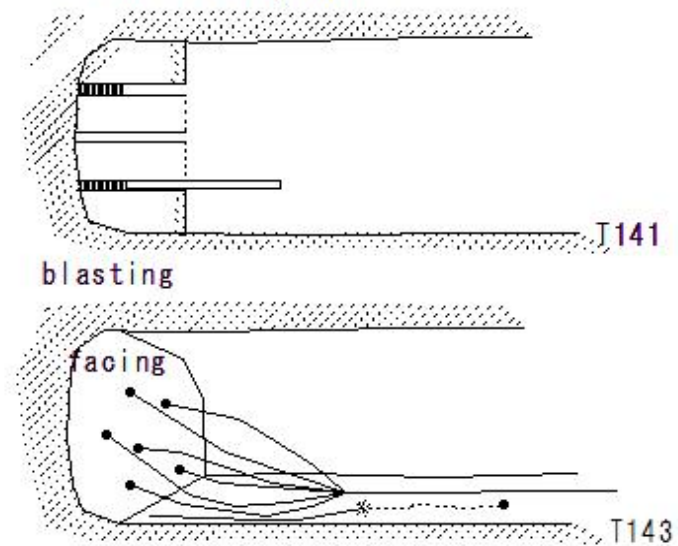
Dust Law Article 24-2

(Measures after blasting)

- ① Construction work such as tunnels
- ② Blasting work
- ③ Only after the dust from the blasting has been properly diluted
- ④ Do not approach the area where blasting has occurred
- ⑤ Display in a conspicuous place



3.8.2 Blasting Work



(S1286) Dust Hazard

(S1286) Dust Hazard

Respiratory protective equipment

Dust Hazard Prevention Regulations

Dust Regulations Article 27. Clause 1

(Use of respiratory protective equipment)

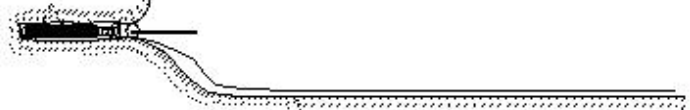
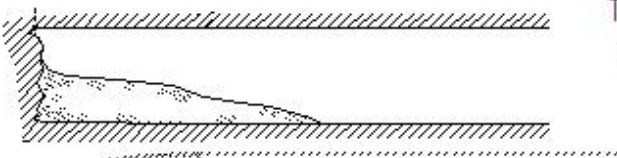
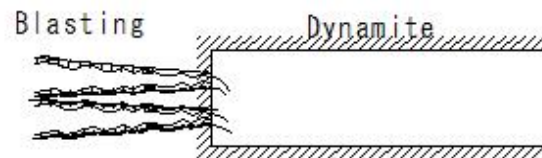
- ① Effective respiratory protective equipment: air-supplied mask or air respirator
- ② The need to use respiratory protective equipment must be made known.
- ③ Respiratory protective equipment with electric fan: dust-proof function
- ④ Respiratory protective equipment with electric fan and dust-proof function
- ⑤ Use of respiratory protective equipment



S1248

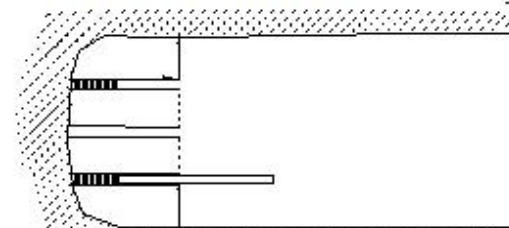


3.8.2 Blasting Work



T232
T31

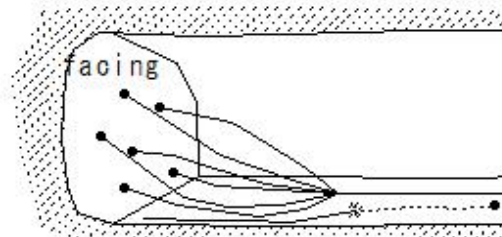
S139



S1057

T141

blasting



T143

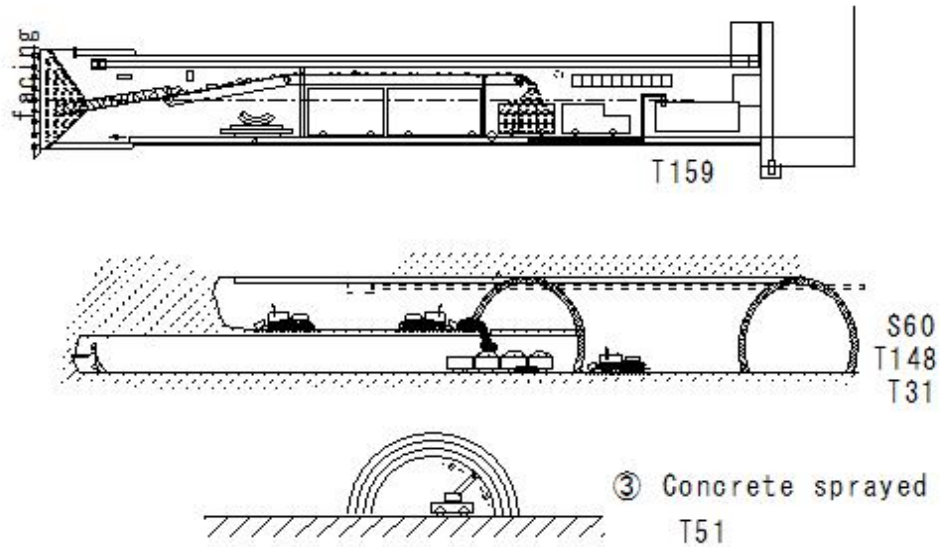
(S1287) Dust Hazard

(S1287) Dust Hazard

Dust Hazard Prevention Regulations

Dust Law Article 27, Clause 2

- ① Work in areas where minerals, etc. are excavated
- ② Work inside tunnels, etc., where minerals, etc. are loaded or unloaded
- ③ Work inside tunnels, etc., where concrete, etc. is sprayed



(S1288) Dust Hazard

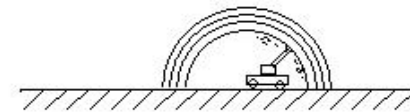
(S1288) Dust Hazard

Dust Hazard Prevention Regulations

Article 22 of the Dust Law

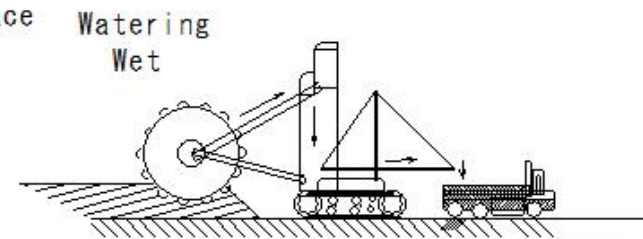
(Special training)

- ① How to prevent dust dispersion and ventilate the workplace
- ② Workplace management
- ③ How to use respiratory protective equipment
- ④ Dust-related illnesses and health management
- ⑤ Relevant laws and regulations

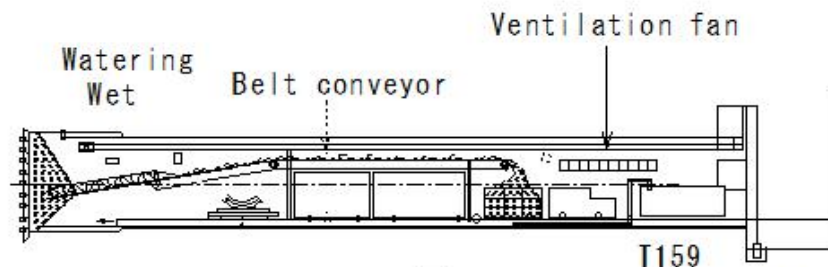


Concrete sprayed

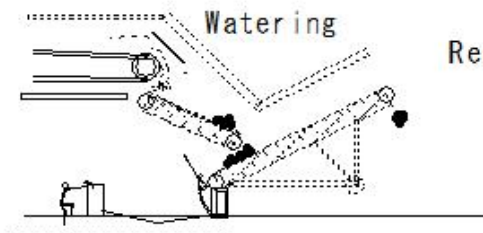
T51



M169

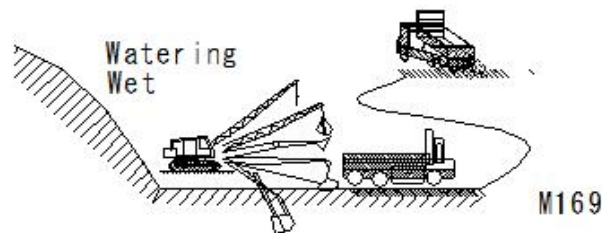


T159

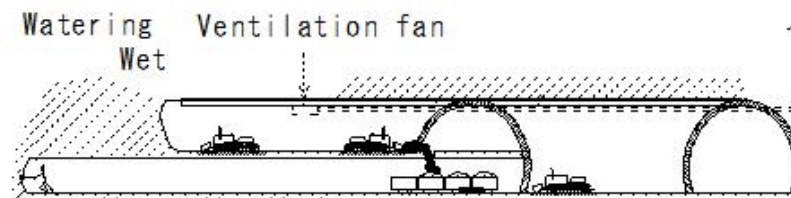


Respiratory protective equipment

S1248



M169



S60
T148

(S1289) Dust Hazard

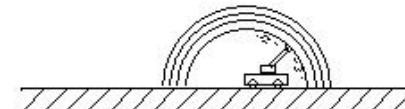
(S1289) Dust Hazard

Dust Hazard Prevention Regulations

Article 23 of the Dust Law (Rest facilities)

- ① Rest facilities must be provided in locations other than the workplace where dusty work is performed.
- ② Rest facilities must be equipped with tools that has adhered to their work clothes, etc.
- ③ Dust that has adhered to work clothes, etc. must be removed before using the rest facilities.

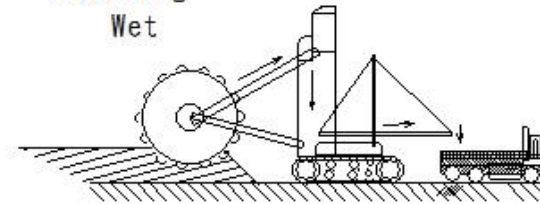
Clothing brush (Rest Room)



Concrete sprayed

T51

Watering
Wet

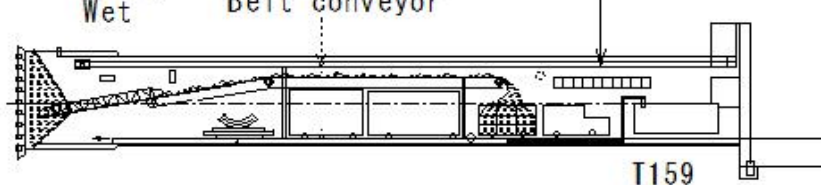


M169

Ventilation fan

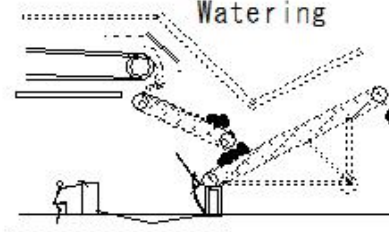
Watering
Wet

Belt conveyor



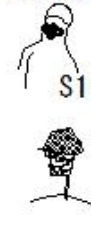
T159

Watering

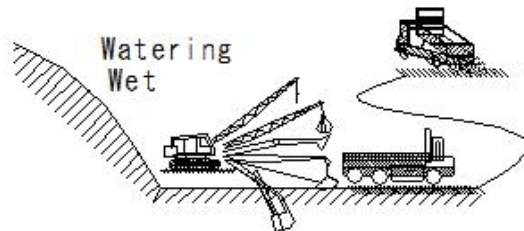


Respiratory protective
equipment

S1248

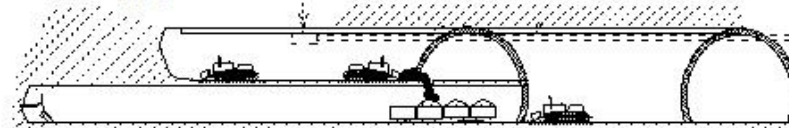


Watering
Wet



M169

Watering
Wet



S60
T148

(S1290) Decontamination Ionization Law

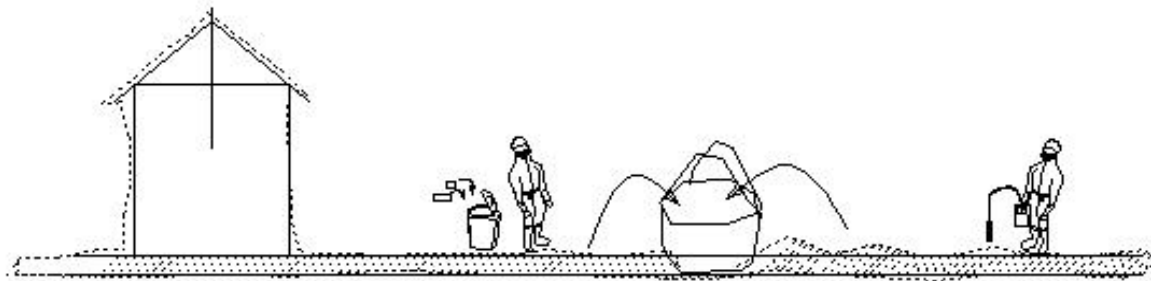
(S1290) Decontamination Ionization Law

Decontamination Ionization Law

Article 2 of the Decontamination Ionization Law

[Purpose of the Decontamination Ionization Law]

- ① Decontamination of soil contaminated by radioactive materials due to the Great East Japan Earthquake
- ② Rules to reduce workers' exposure to radiation
- ③ Enforced by the Ministry of Health, Labor and Welfare
- ④ Measures to prevent health damage caused by ionizing radiation
- ⑤ Receive a health check at the time of employment, transfer, and once within six months thereafter



Decontamination Ionization

(S1291) Decontamination Ionization Law

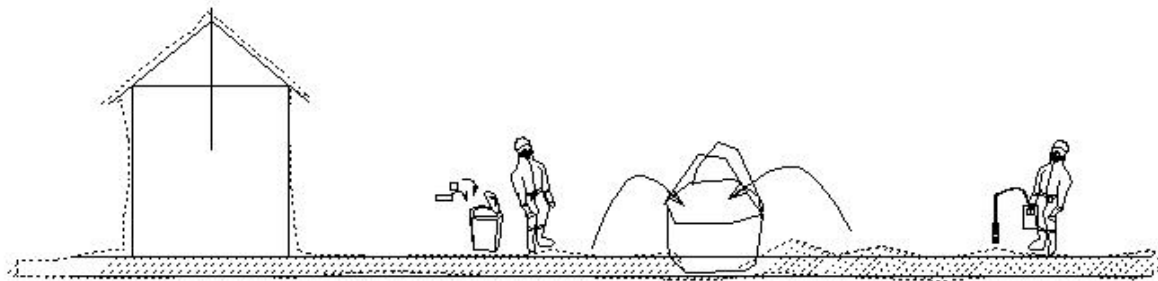
(S1291) Decontamination Ionization Law

Decontamination Ionization Law

Article 3・4 of the Decontamination Ionization Law

(Exposure limits for decontamination workers)

- ① The effective dose received by decontamination workers must not exceed 100 mSv per five years
- ② The effective dose received by decontamination workers must not exceed 50 mSv per year.
- ③ The dose received by female decontamination workers who have been diagnosed as pregnant
- ④ Effective dose from internal exposure: 1 mSv
- ⑤ Equivalent dose received on the abdominal surface: 2 mSv



Decontamination Ionization

(S1292) Decontamination Ionization Law

(S1292) Decontamination Ionization Law

Decontamination Ionization Law

Article 6、27 of the Decontamination Ionization Law

(Confirmation, recording, etc. of dose measurement results)

- ① Record the radiation exposure dose on a management form and keep it for 30 years.
- ② Notify the worker of the radiation exposure dose based on the records
- ③ In case of the worker leaves the job, a copy of the records must be provided.



(S1293) Decontamination Ionization Law

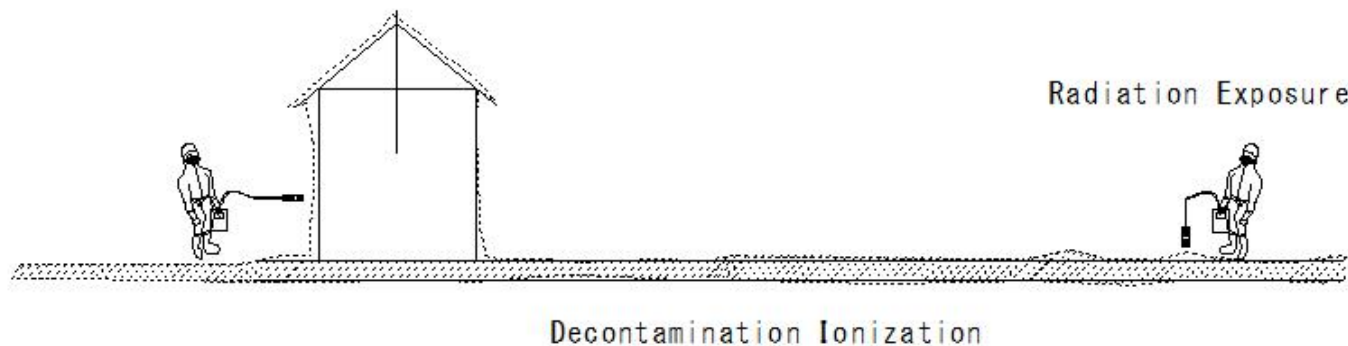
(S1293) Decontamination Ionization Law

Decontamination Ionization Law

Article 7 of the Decontamination Ionization Law

(Preliminary survey, etc.)

- ① Conditions at the site of decontamination work, etc.
- ② Average air dose rate at the site of decontamination work, etc.
- ③ Value of radioactivity concentration
- ④ Record the results.
- ⑤ Date, Method , and Results.



(S1294) Decontamination Ionization Law

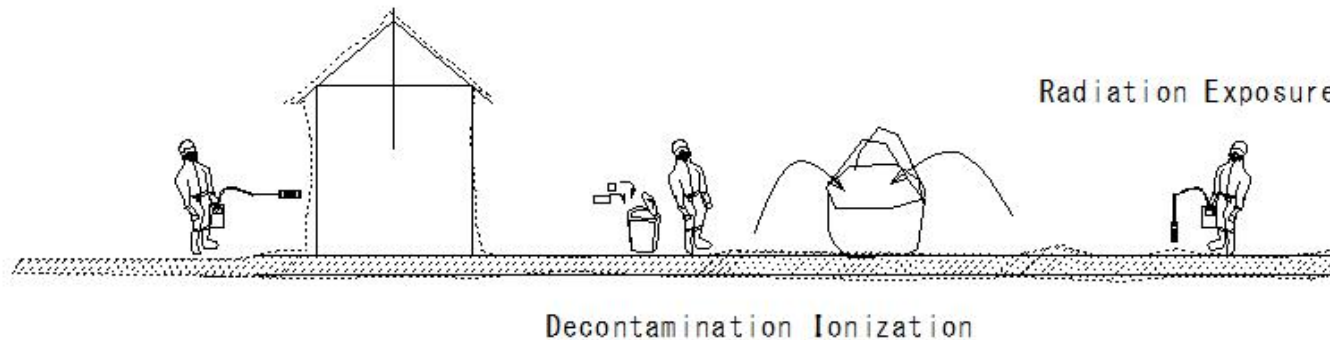
(S1294) Decontamination Ionization Law

Decontamination Ionization Law

Article 8 of the Decontamination Ionization Law

(Work plan)

- ① Location of decontamination work and method of decontamination work
- ② Method of measuring radiation exposure dose
- ③ Measures to reduce radiation exposure
- ④ Machinery and equipment used in decontamination work
- ⑤ Emergency measures in the event of a workplace accident
- ⑥ Inform relevant workers.



(S1295) Decontamination Ionization Law

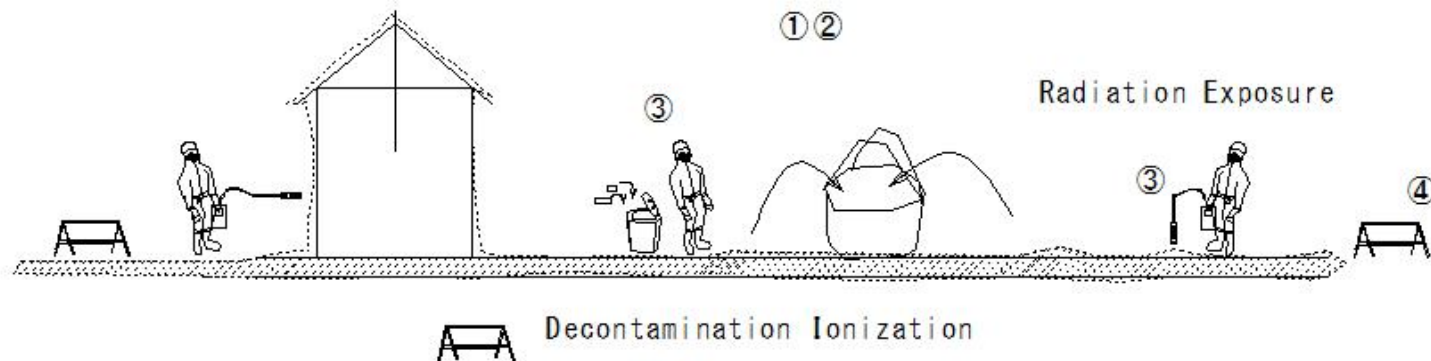
(S1295) Decontamination Ionization Law

Decontamination Ionization Law

Article 9 of the Decontamination Ionization Law

(Work Director)

- ① Procedures and layout.
- ② Check the function of machines, etc. and remove defective products.
- ③ Monitor the use of radiation measuring devices and protective equipment.
- ④ Prohibit entry to anyone other than authorized personnel.



(S1296) Decontamination Ionization Law

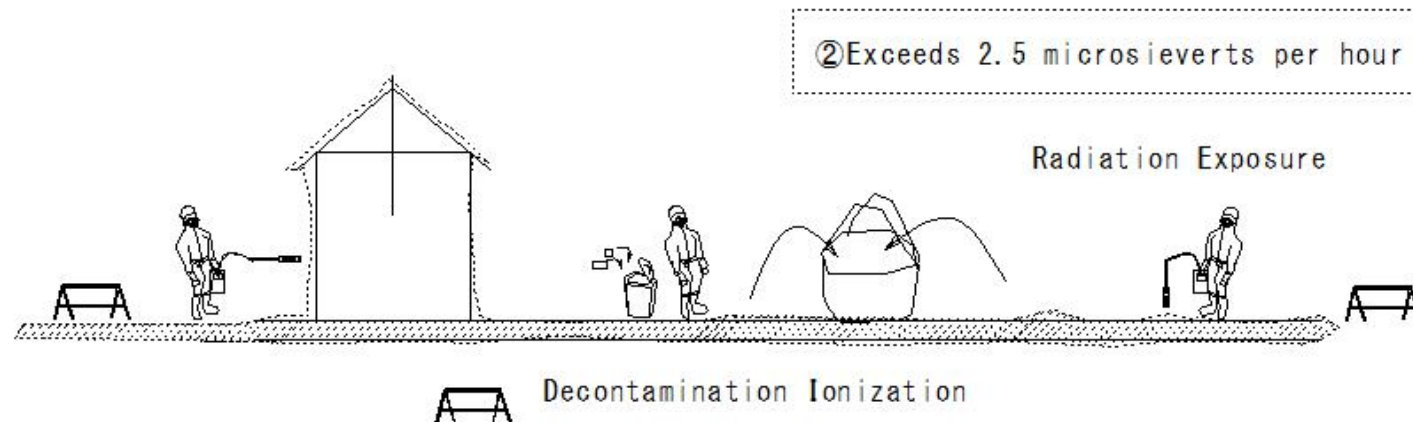
(S1296) Decontamination Ionization Law

Decontamination Ionization Law

Article 10 of the Decontamination Ionization Law

(Notification of work)

- ① Decontamination work (work handling specific contaminated soil, etc.)
- ② In case of the average air dose rate exceeds 2.5 microsieverts per hour
- ③ Work notification
- ④ Submit to the Chief of the Labor Standards Inspection Office.



(S1297) Decontamination Ionization Law

(S1297) Decontamination Ionization Law

Decontamination Ionization Law

Article 11 of the Decontamination Ionization Law

(Examination, etc.)

- ① A person who has received an effective dose exceeding the prescribed limit
- ② A person who has mistakenly inhaled or ingested radioactive material from the accident
- ③ A person whose wound is contaminated
- A person must be examined or treated by a doctor immediately

(Examination, etc.)

Exceeds 2.5 microsieverts per hour

Radiation Exposure



(S1298) Decontamination Ionization Law

(S1298) Decontamination Ionization Law

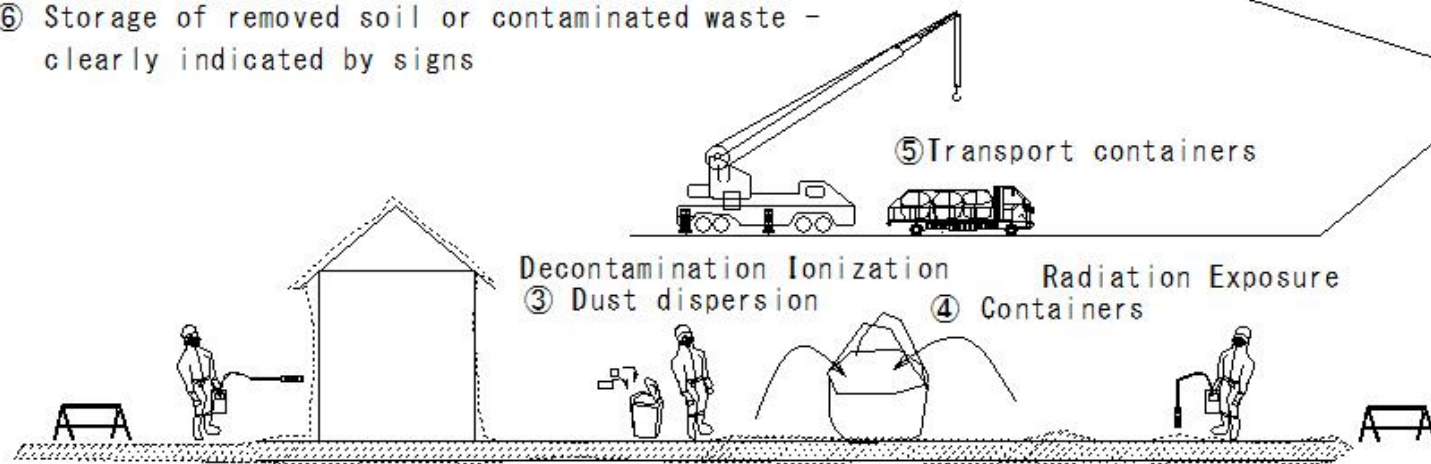
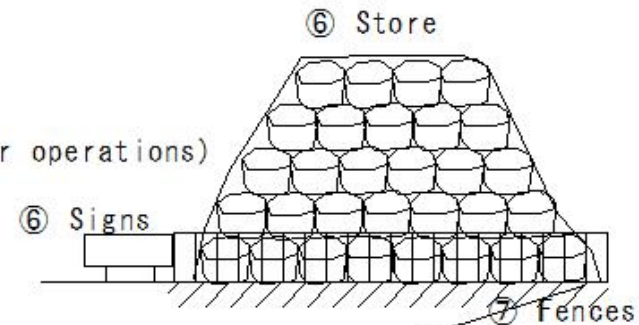
Decontamination Ionization Law

Article 12 • 13 of the Decontamination Ionization Law

(Measures to prevent dust dispersion)

(Use of containers when performing waste collection and other operations)

- ① Decontamination work, etc.
- ② Keep contaminated waste in a moist state
- ③ Measures to prevent dust dispersion
- ④ Use containers when storing contaminated waste
- ⑤ Operations related to the transportation of contaminated waste:
Transport containers using a dedicated loader
- ⑥ Storage of removed soil or contaminated waste -
clearly indicated by signs



(S1299) Decontamination Ionization Law

(S1299) Decontamination Ionization Law

Decontamination Ionization Law

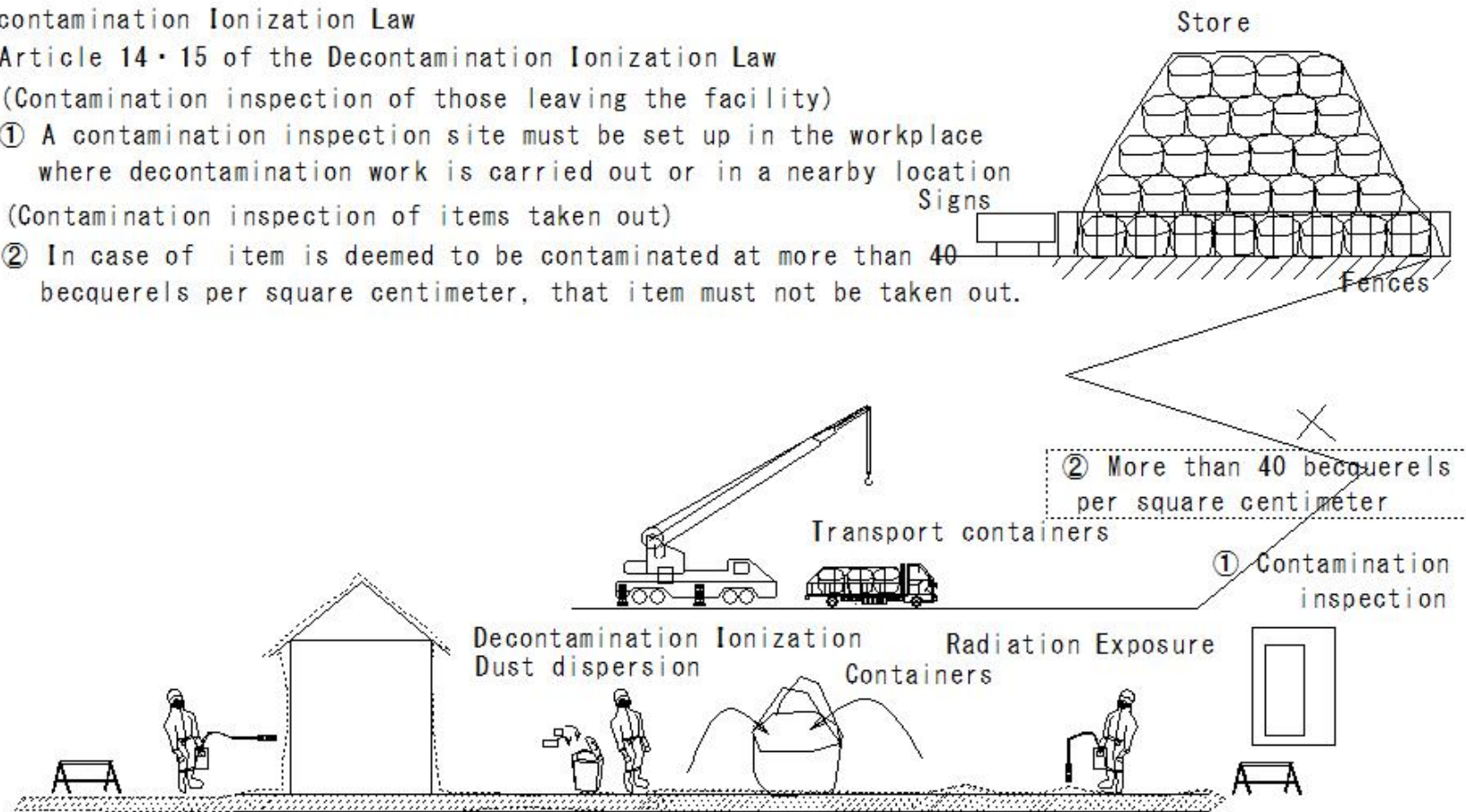
Article 14 • 15 of the Decontamination Ionization Law

(Contamination inspection of those leaving the facility)

- ① A contamination inspection site must be set up in the workplace where decontamination work is carried out or in a nearby location

(Contamination inspection of items taken out)

- ② In case of item is deemed to be contaminated at more than 40 becquerels per square centimeter, that item must not be taken out.



(S1300) Decontamination Ionization Law

(S1300) Decontamination Ionization Law

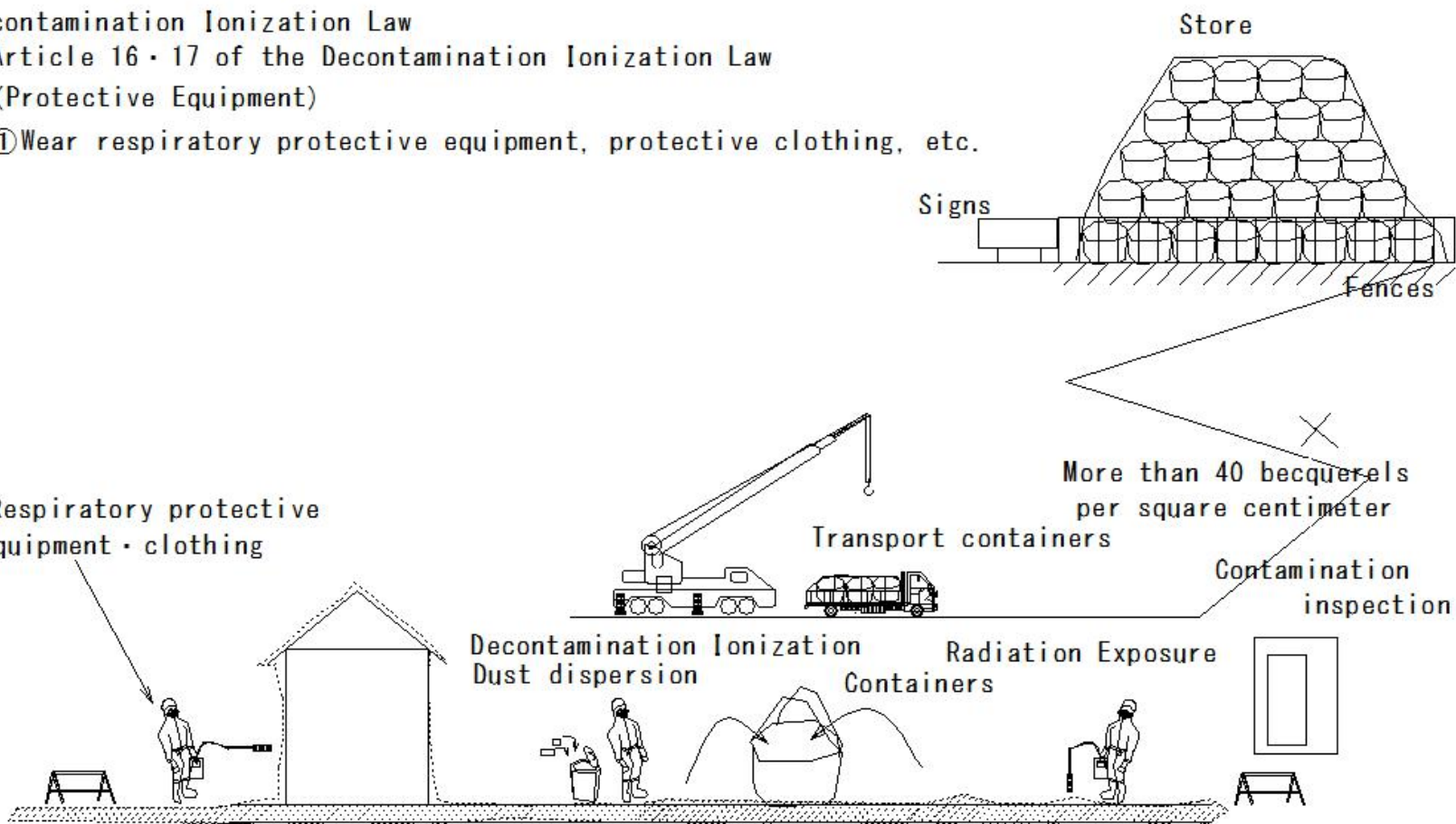
Decontamination Ionization Law

Article 16・17 of the Decontamination Ionization Law

(Protective Equipment)

①Wear respiratory protective equipment, protective clothing, etc.

①Respiratory protective equipment・clothing



(S1301) Decontamination Ionization Law

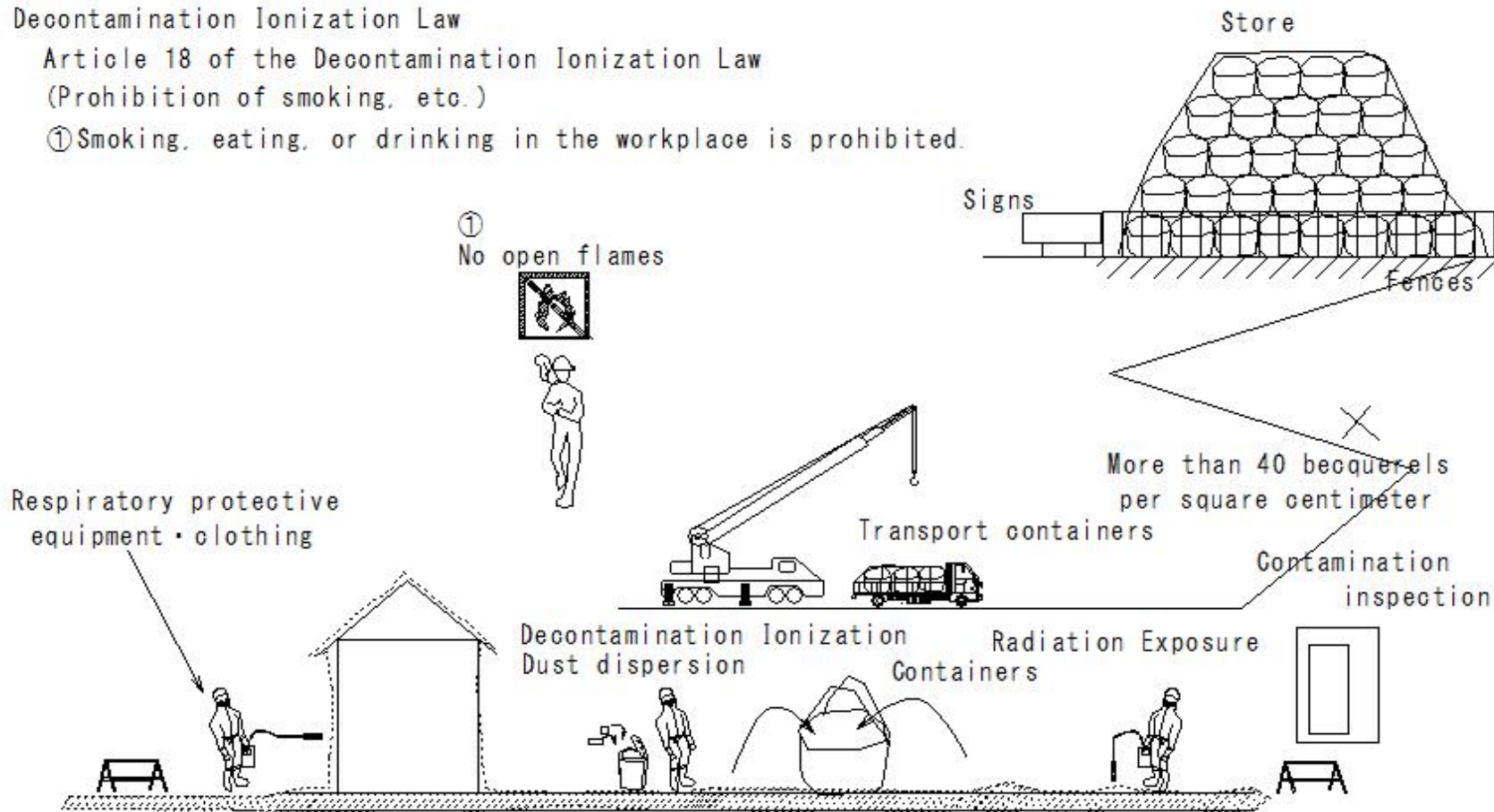
(S1301) Decontamination Ionization Law

Decontamination Ionization Law

Article 18 of the Decontamination Ionization Law

(Prohibition of smoking, etc.)

① Smoking, eating, or drinking in the workplace is prohibited.



(S1302) Decontamination Ionization Law

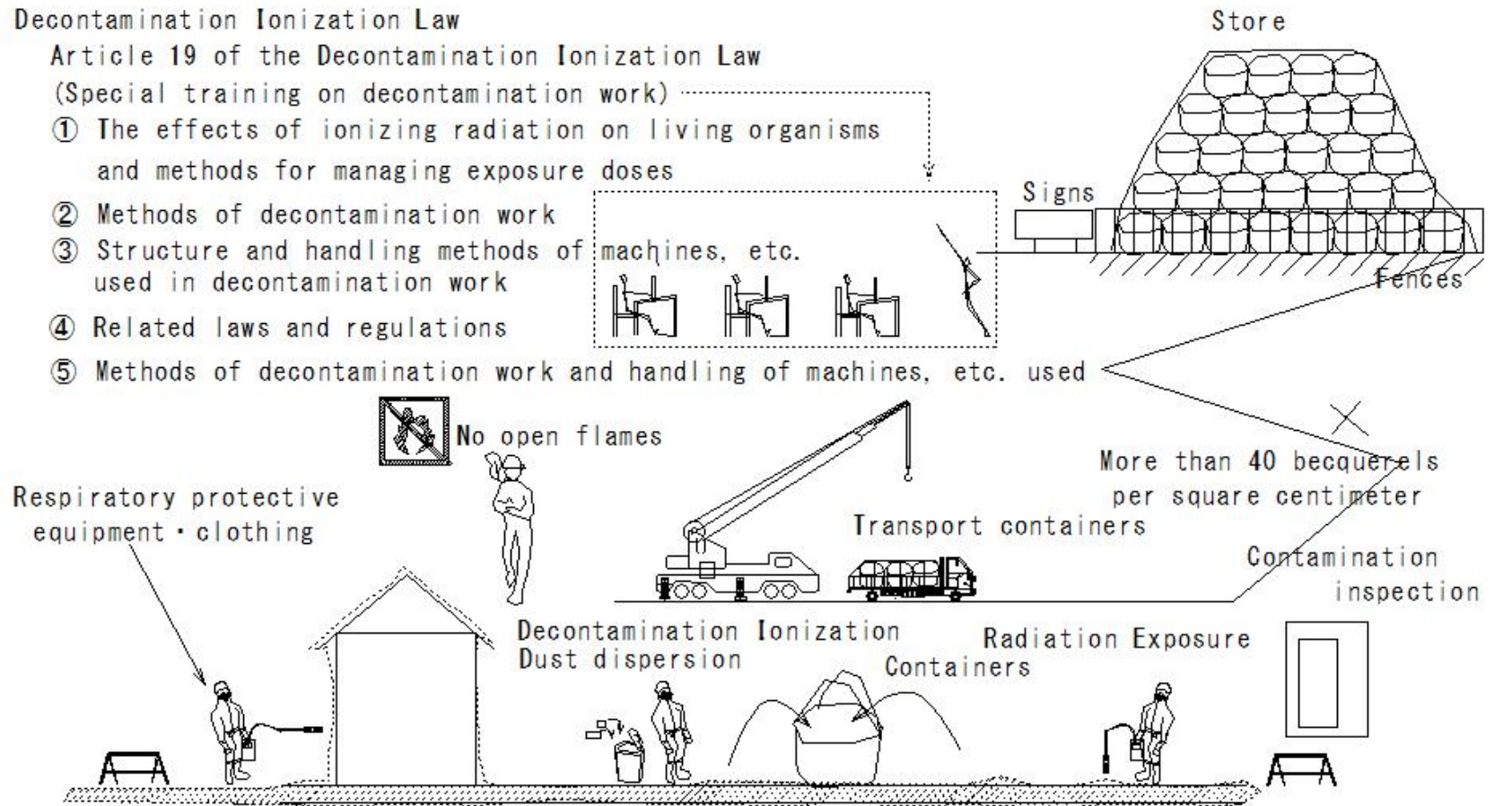
(S1302) Decontamination Ionization Law

Decontamination Ionization Law

Article 19 of the Decontamination Ionization Law

(Special training on decontamination work)

- ① The effects of ionizing radiation on living organisms and methods for managing exposure doses
- ② Methods of decontamination work
- ③ Structure and handling methods of machines, etc. used in decontamination work
- ④ Related laws and regulations
- ⑤ Methods of decontamination work and handling of machines, etc. used



(S1303) Decontamination Ionization Law

(S1303) Decontamination Ionization Law

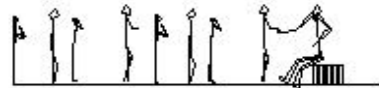
Decontamination Ionization Law

Article 20 of the Decontamination Ionization Law

(Medical Examination)

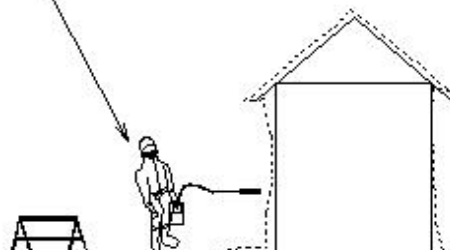
① A medical examination shall be conducted at the time of employment or transfer to the relevant work, and once every six months thereafter.

① (Medical Examination)



No open flames

Respiratory protective equipment • clothing



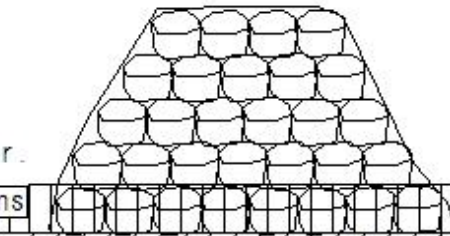
Decontamination Ionization
Dust dispersion



Radiation Exposure
Containers



Store

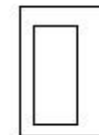


Signs

Fences

More than 40 becquerels
per square centimeter

Contamination
inspection



(S1304) Decontamination Ionization Law

(S1304) Decontamination Ionization Law

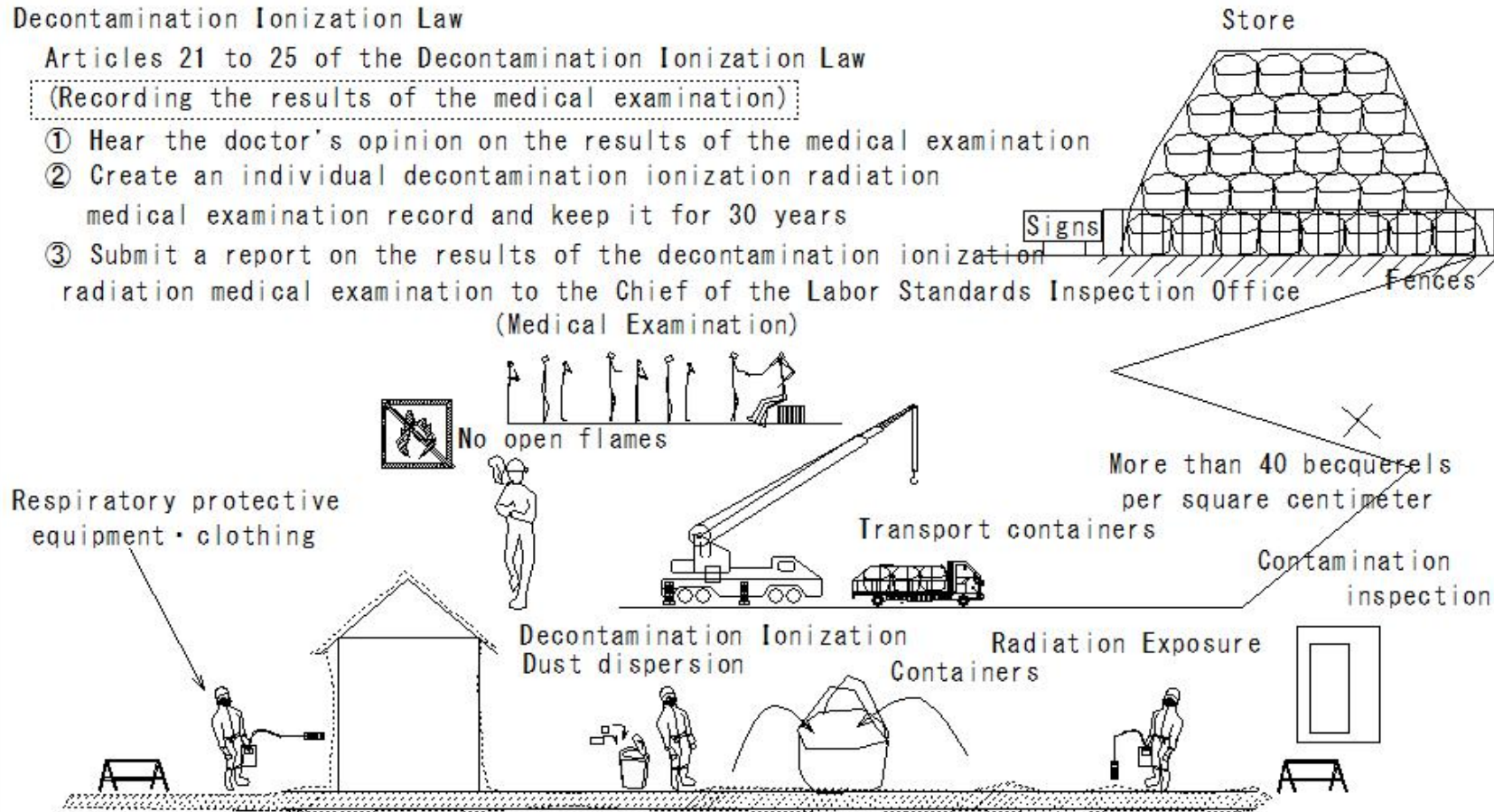
Decontamination Ionization Law

Articles 21 to 25 of the Decontamination Ionization Law

(Recording the results of the medical examination)

- ① Hear the doctor's opinion on the results of the medical examination
- ② Create an individual decontamination ionization radiation medical examination record and keep it for 30 years
- ③ Submit a report on the results of the decontamination ionization radiation medical examination to the Chief of the Labor Standards Inspection Office

(Medical Examination)



(S1305) Decontamination Ionization Law

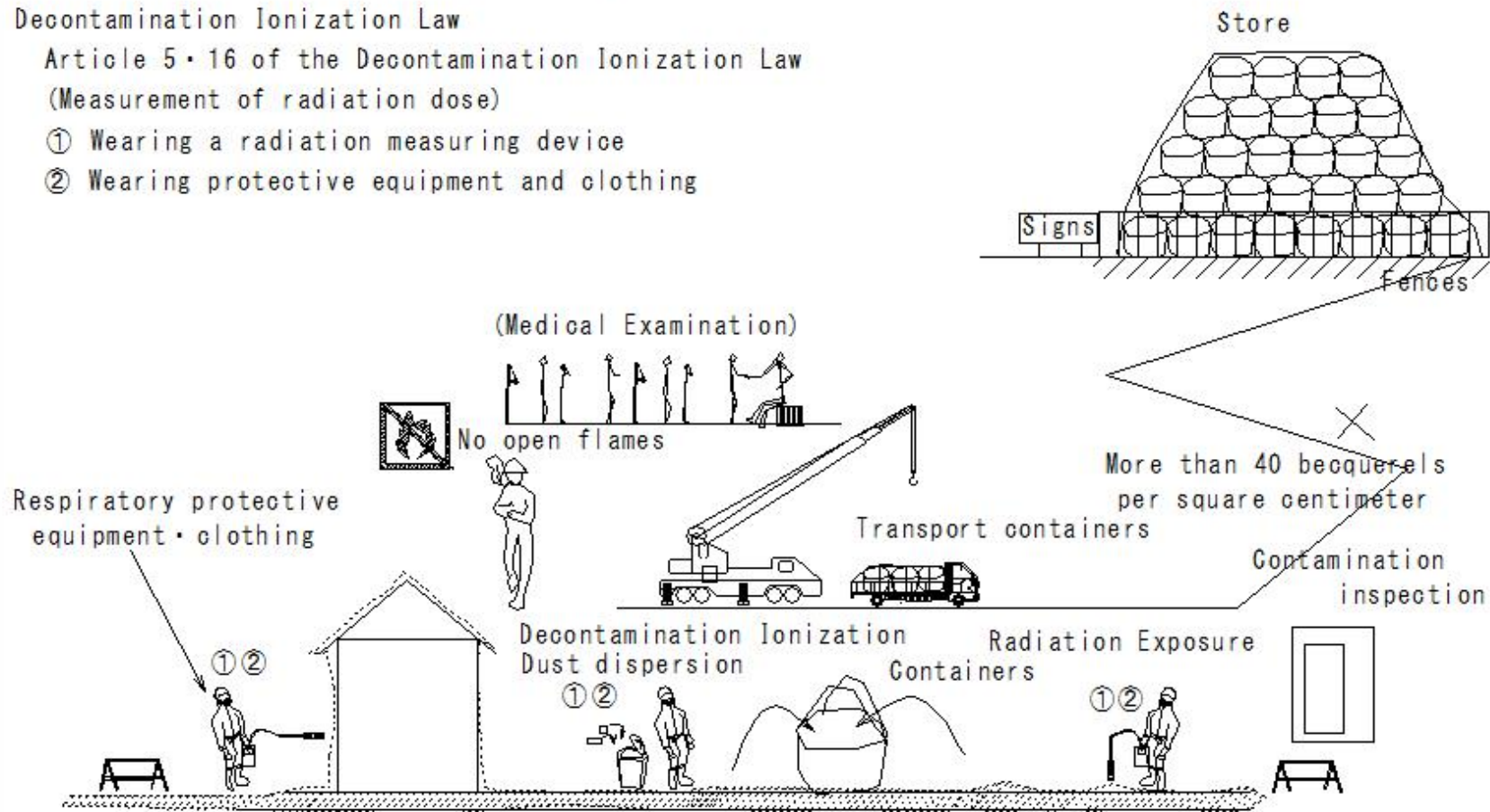
(S1305) Decontamination Ionization Law

Decontamination Ionization Law

Article 5・16 of the Decontamination Ionization Law

(Measurement of radiation dose)

- ① Wearing a radiation measuring device
- ② Wearing protective equipment and clothing



(S1306) Decontamination Ionization Law

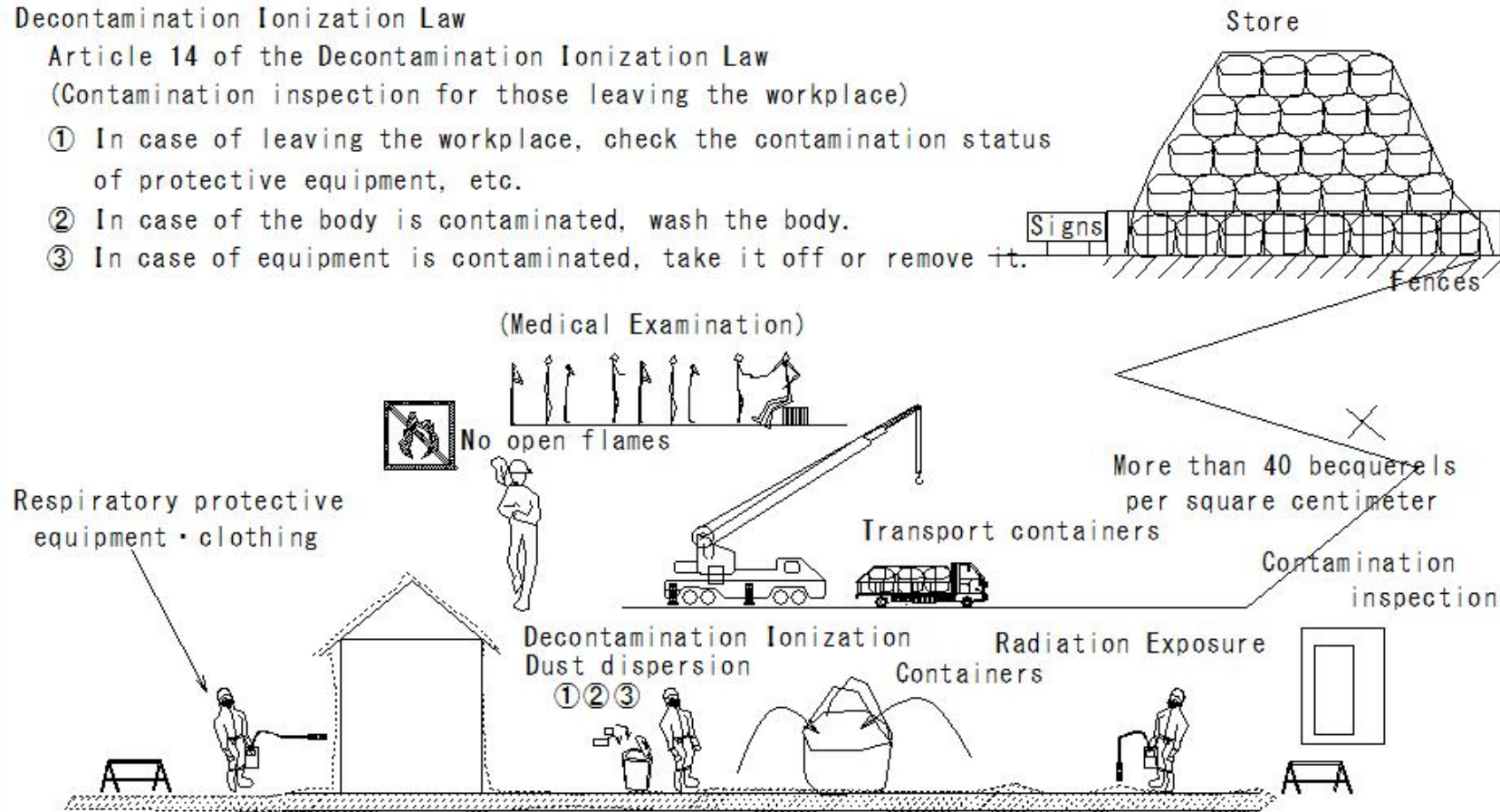
(S1306) Decontamination Ionization Law

Decontamination Ionization Law

Article 14 of the Decontamination Ionization Law

(Contamination inspection for those leaving the workplace)

- ① In case of leaving the workplace, check the contamination status of protective equipment, etc.
- ② In case of the body is contaminated, wash the body.
- ③ In case of equipment is contaminated, take it off or remove it.



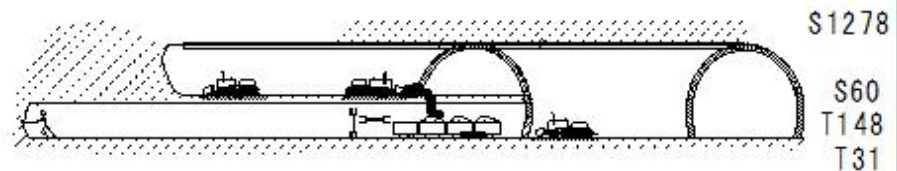
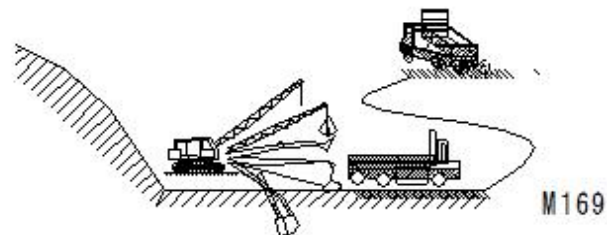
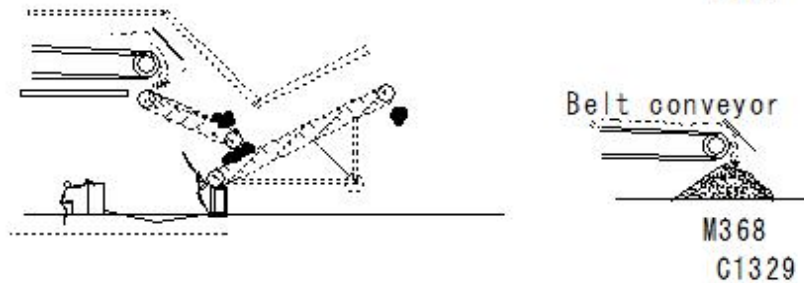
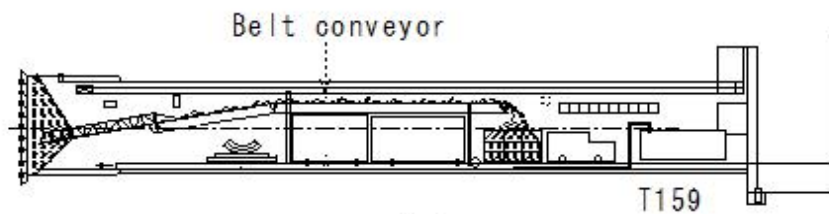
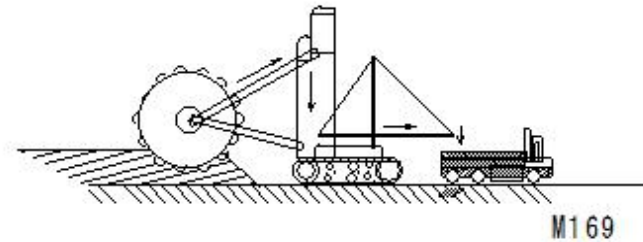
(S1307) Pneumoconiosis Act

(S1307) Pneumoconiosis Act

Pneumoconiosis Act

Article 2 of the Pneumoconiosis Act

- ① Pneumoconiosis: A disease characterized by fibroproliferative changes in the lungs due to inhalation of dust.



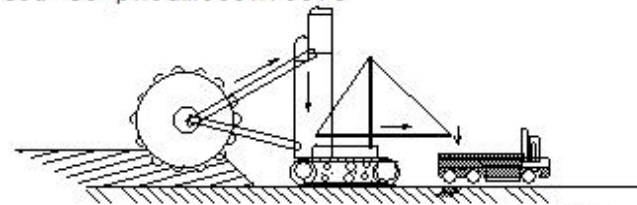
(S1308) Pneumoconiosis Act

(S1308) Pneumoconiosis Act

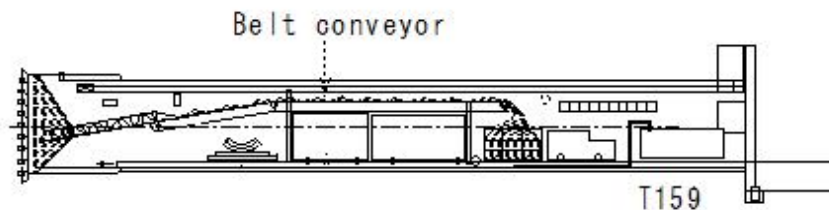
Pneumoconiosis Act

Article 2 of the Pneumoconiosis Act

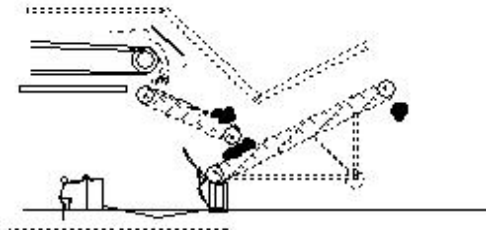
- ② Complications: Refers to pulmonary tuberculosis complicated with pneumoconiosis and other diseases that are recognized to be closely related to pneumoconiosis



M169



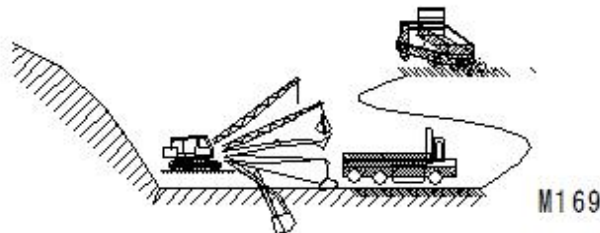
T159



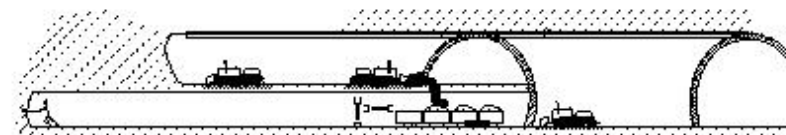
Belt conveyor

M368

C1329



M169



S1278

S60

T148

T31

(S1309) Pneumoconiosis Act

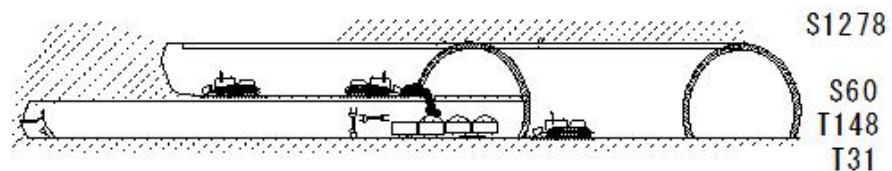
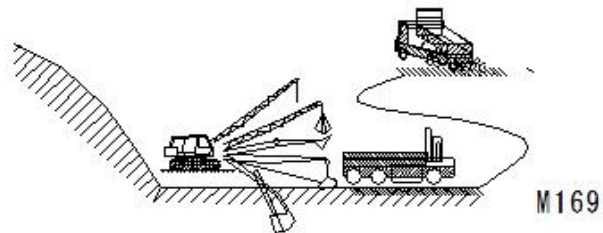
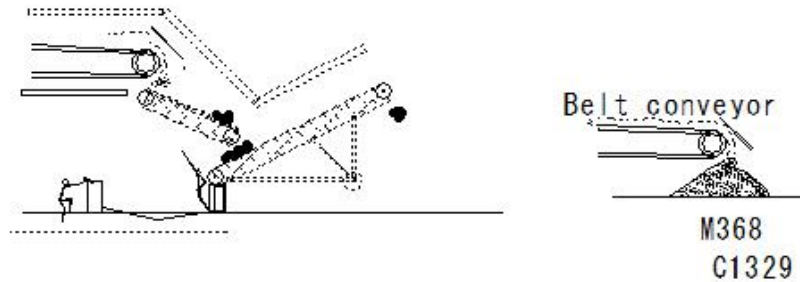
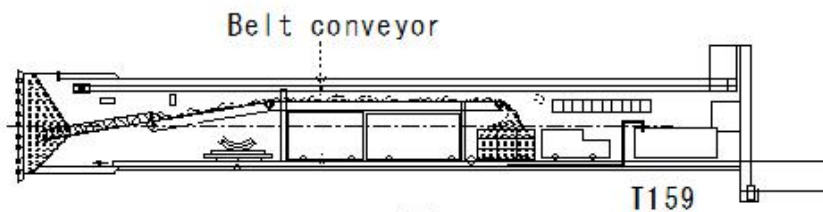
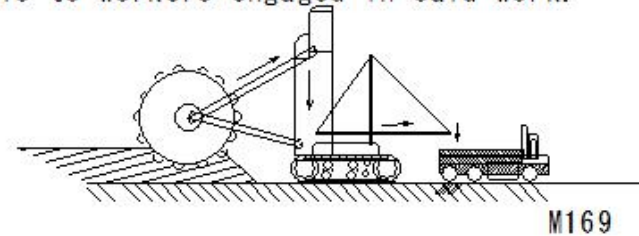
(S1309) Pneumoconiosis Act

Pneumoconiosis Act

Pneumoconiosis Act Article 2

③ Dust work:

Work that is deemed to be at risk of causing pneumoconiosis to workers engaged in said work.



(S1310) Pneumoconiosis Act

(S1310) Pneumoconiosis Act

Pneumoconiosis Act

①Pneumoconiosis Act Article 17: Records and X-rays related to pneumoconiosis health examinations must be kept for 7 years

②Pneumoconiosis Act Article 14: Notification of pneumoconiosis management classification

and matters that the person should pay attention to must be made

③Pneumoconiosis Act Article 16-2 (Order to submit X-rays, etc.)

④Pneumoconiosis Act Articles 7-8, 9, and 9-2

Article 7 (Employment health examination)

Article 8 (Regular health examination)

Article 9 (Non-regular health check-ups)

Article 9-2 (Health check-ups when leaving employment)

⑤Article 16 of the Pneumoconiosis Act (Application at any time)

⑥Article 11 of the Pneumoconiosis Act

(Obligation to undergo medical examination)

⑦Article 22-2 of the Pneumoconiosis Act (Training for work change)

⑧Article 14 of the Pneumoconiosis Act (Notification)

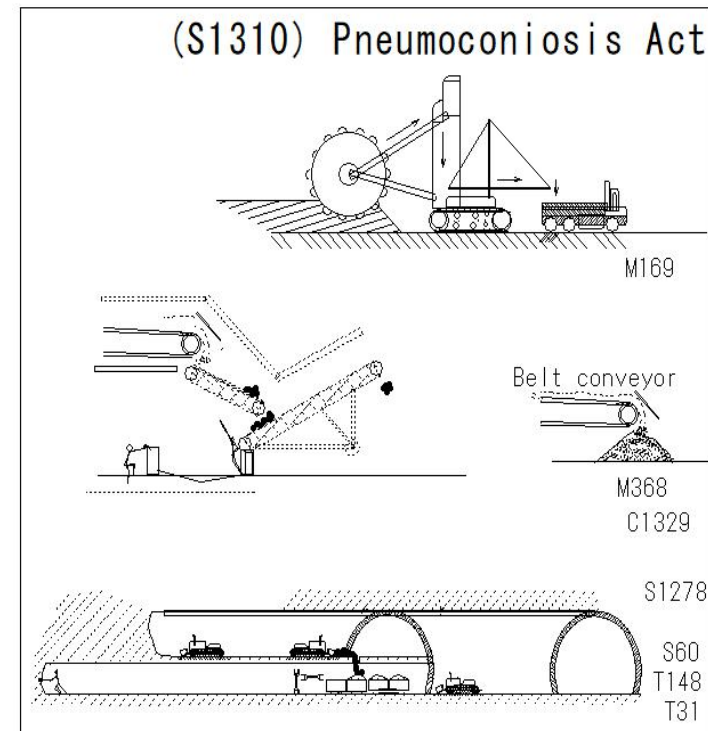
⑨Article 12 of the Pneumoconiosis Act

(Submission of X-rays, etc. by employers)

⑩Article 15 of the Pneumoconiosis Act (Application at any time)

⑪Article 13 of the Pneumoconiosis Act

(Procedures for determining pneumoconiosis management classification, etc.)

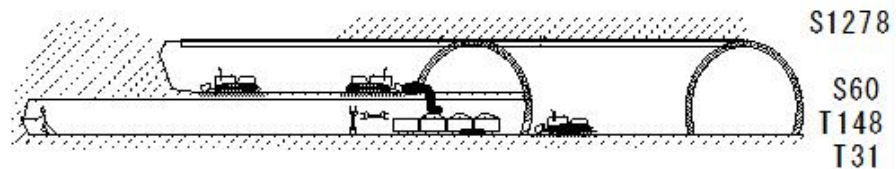
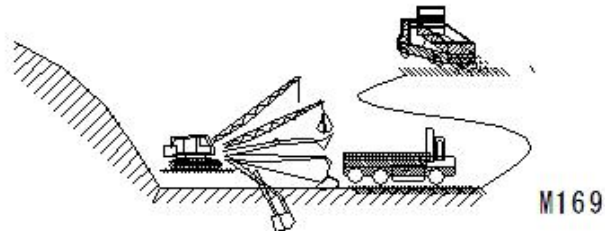
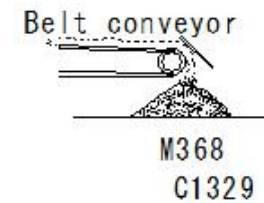
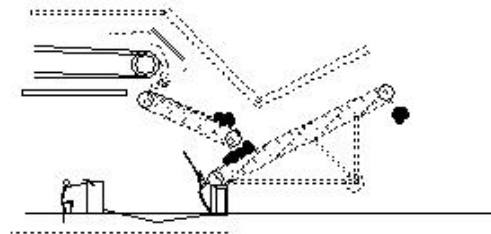
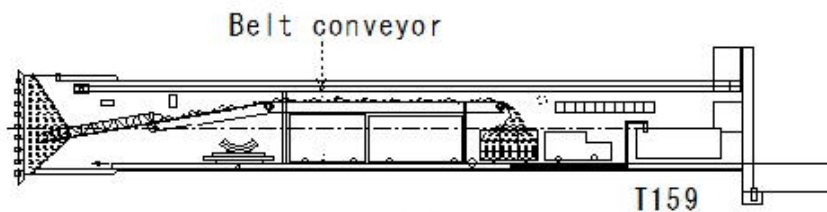
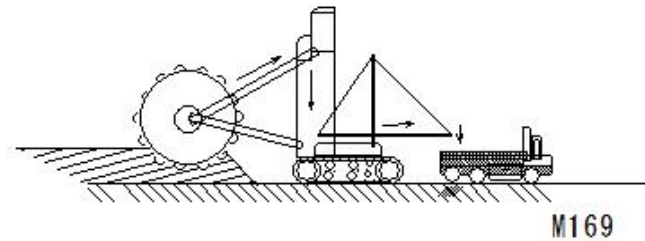


(S1311) Pneumoconiosis Act

(S1311) Pneumoconiosis Act

Pneumoconiosis Act

- ①Pneumoconiosis Act Article 20-3 (Measures to reduce exposure to dust)
- ②Pneumoconiosis Act Article 21 (Change of work)
- ③Pneumoconiosis Act Article 22 (Change of work allowance)
- ④Pneumoconiosis Act Article 23 (Medical treatment)

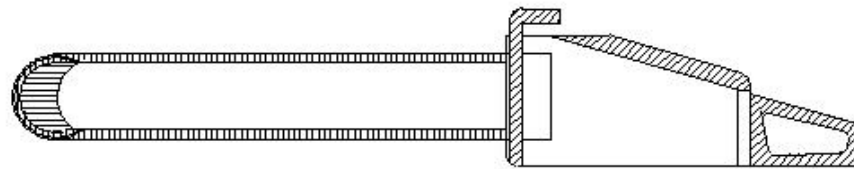
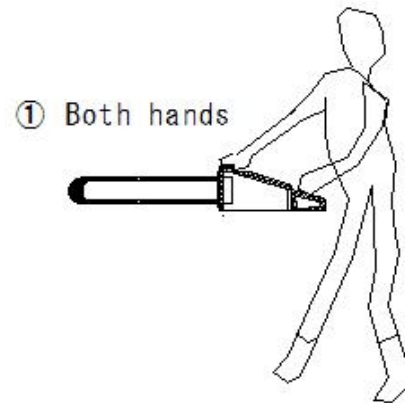


(S1312) Chainsaw

(S1312) Chainsaw

[Rules for safe use]

- ① Always hold the saw firmly with both hands when using it. Never use it with one hand.



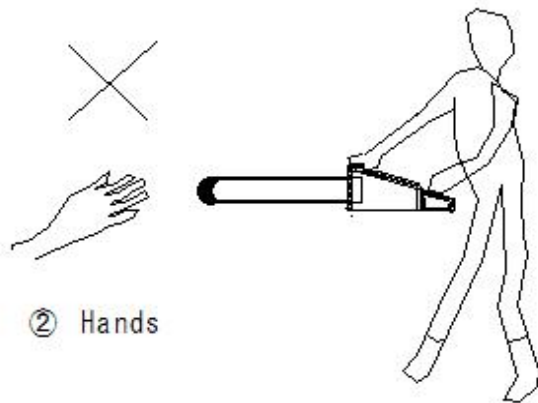
Chainsaw

(S1313) Chainsaw

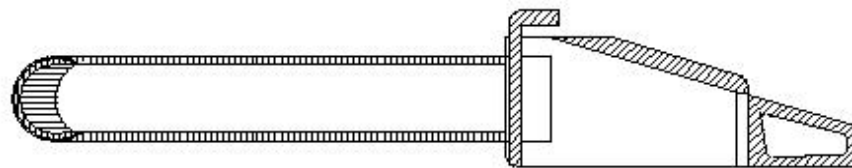
(S1313) Chainsaw

[Rules for safe use]

- ② Keep your hands, face, etc. away from the saw chain, guide bar, or rotating parts while using it.



② Hands



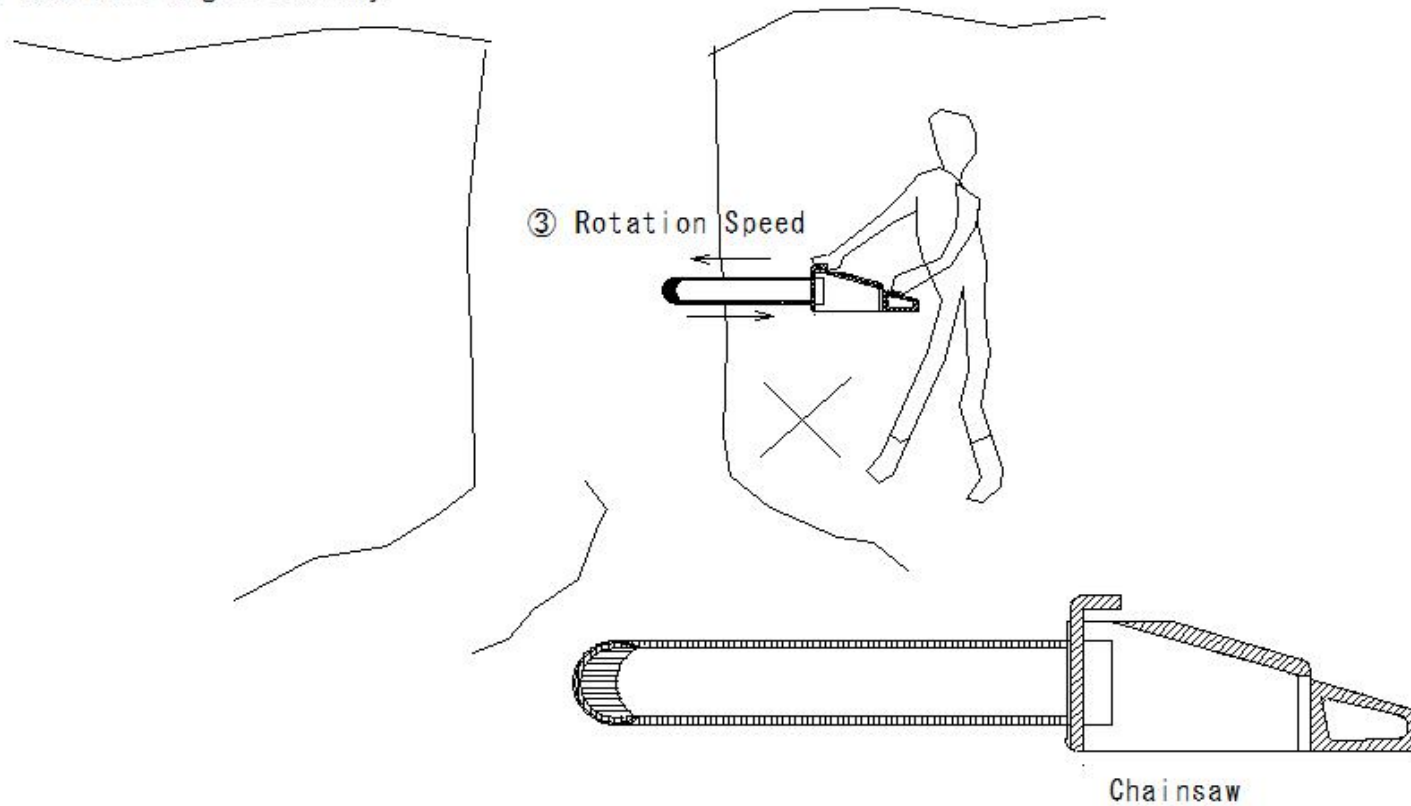
Chainsaw

(S1314) Chainsaw

(S1314) Chainsaw

[Rules for safe use]

- ③ Do not use the chainsaw in an unreasonable way that causes the rotation speed to decrease significantly.

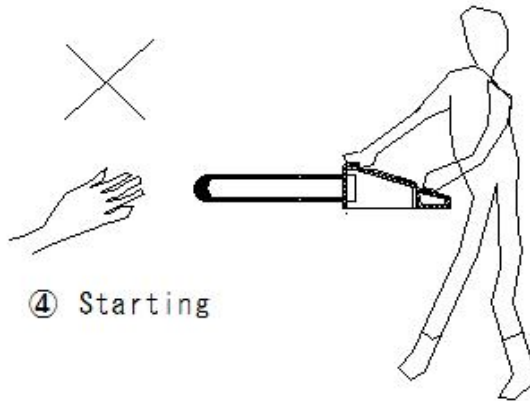


(S1315) Chainsaw

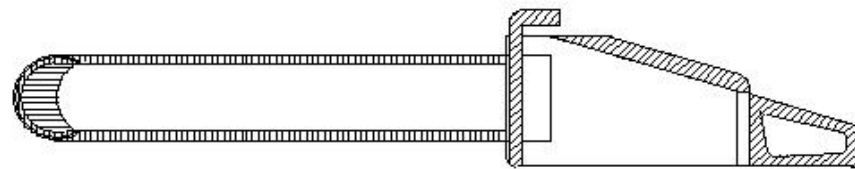
(S1315) Chainsaw

[Rules for safe use]

- ④ When starting the chainsaw, make sure you do not come into contact with the saw chain.



④ Starting



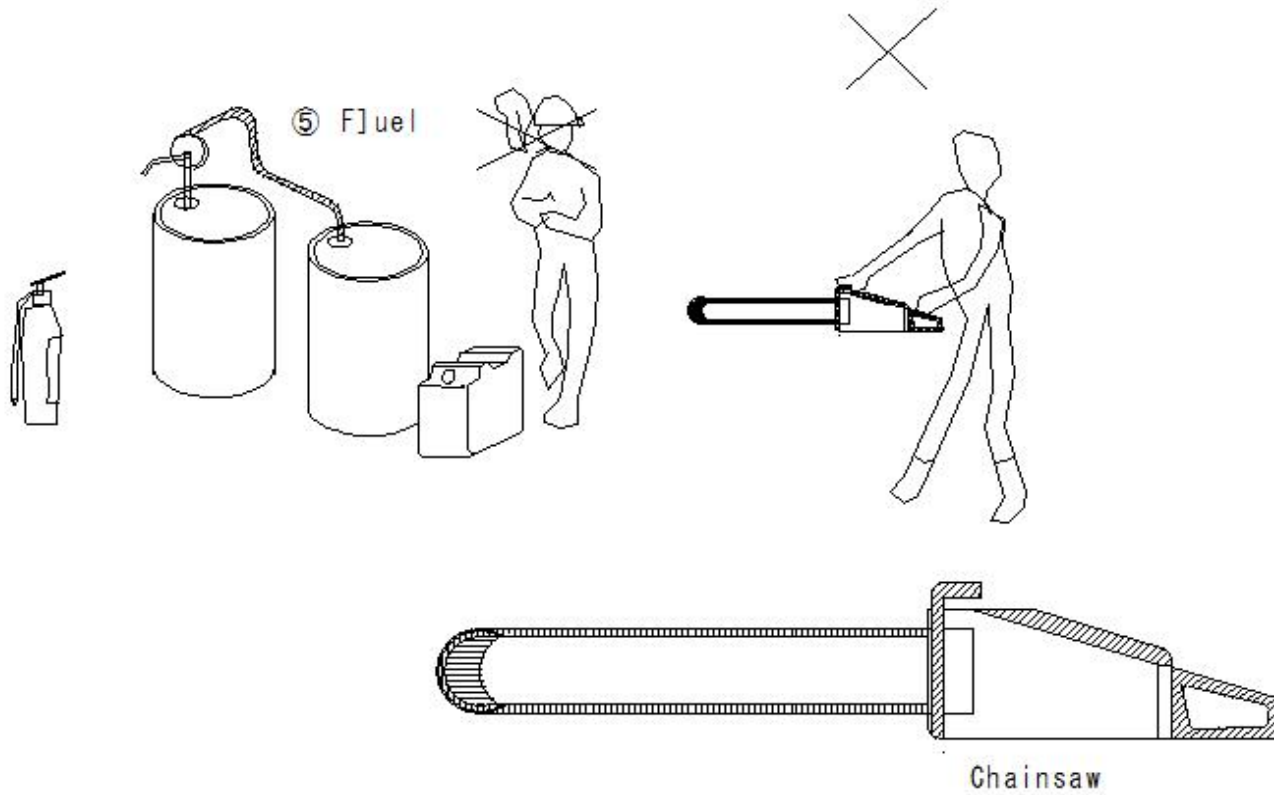
Chainsaw

(S1316) Chainsaw

(S1316) Chainsaw

[Rules for safe use]

- ⑤ Do not use near fuel or flammable materials.

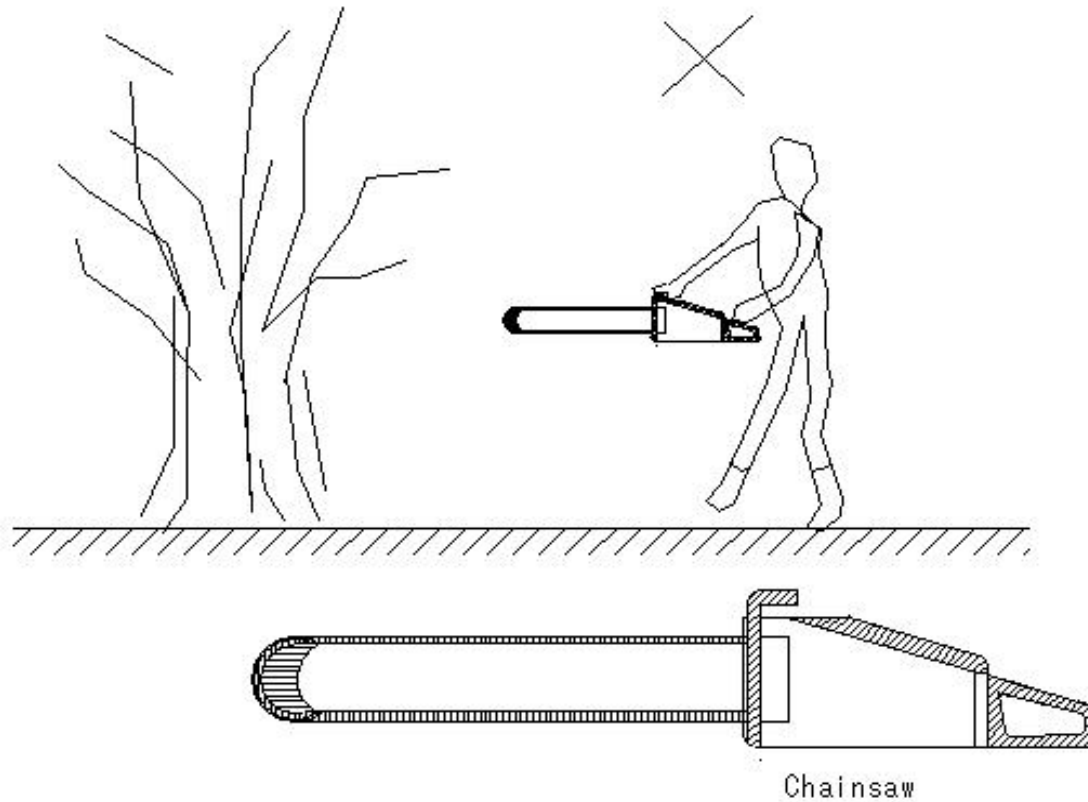


(S1317) Chainsaw

(S1317) Chainsaw

[Rules for safe use]

- ⑥ Do not force the chainsaw against a tree.

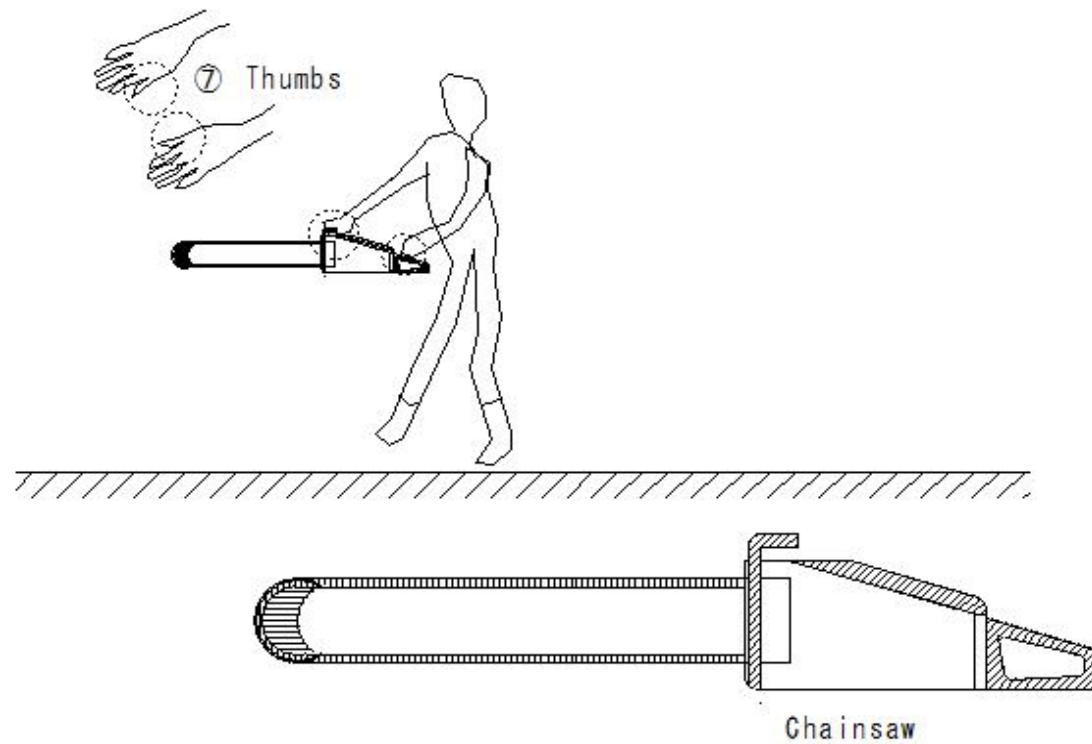


(S1318) Chainsaw

(S1318) Chainsaw

[Rules for safe use]

- ⑦ Hold the chainsaw securely by wrapping your thumbs around the front and rear handles.

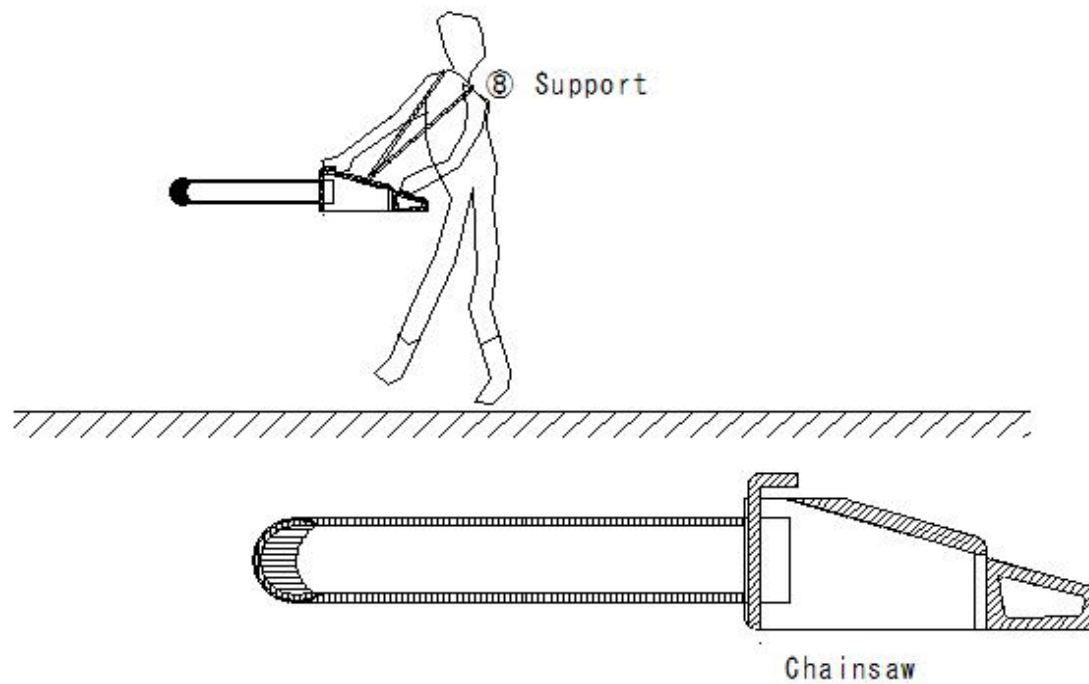


(S1319) Chainsaw

(S1319) Chainsaw

[Rules for safe use]

- ⑧ To reduce the strain on your body caused by vibration and weight, support the chainsaw with a part of your body or a log.

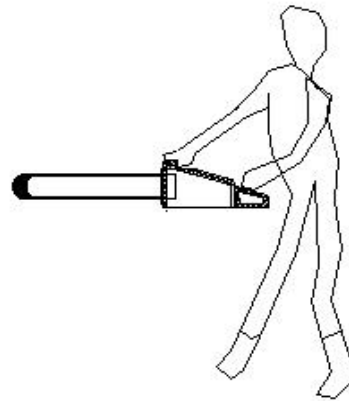


(S1320) Chainsaw

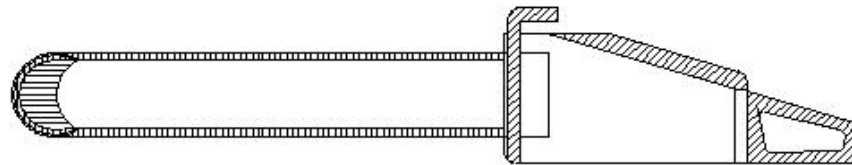
(S1320) Chainsaw

[Rules for safe use]

- ⑨ Hold the chainsaw firmly with both hands and do not use it with one hand.



⑨ Both Hands



Chainsaw

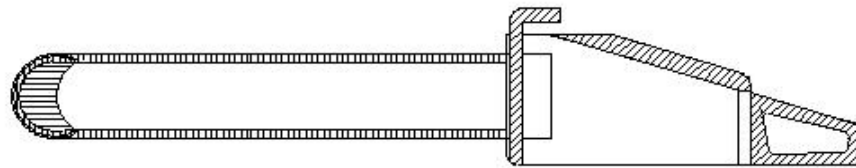
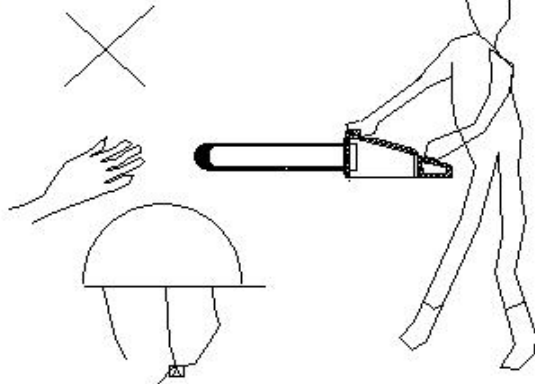
(S1321) Chainsaw

(S1321) Chainsaw

[Rules for safe use]

- ⑩ In case of using the chainsaw, do not bring your hands or face close to the saw chain, guide bar, or rotating parts.

⑩ Hands or Face



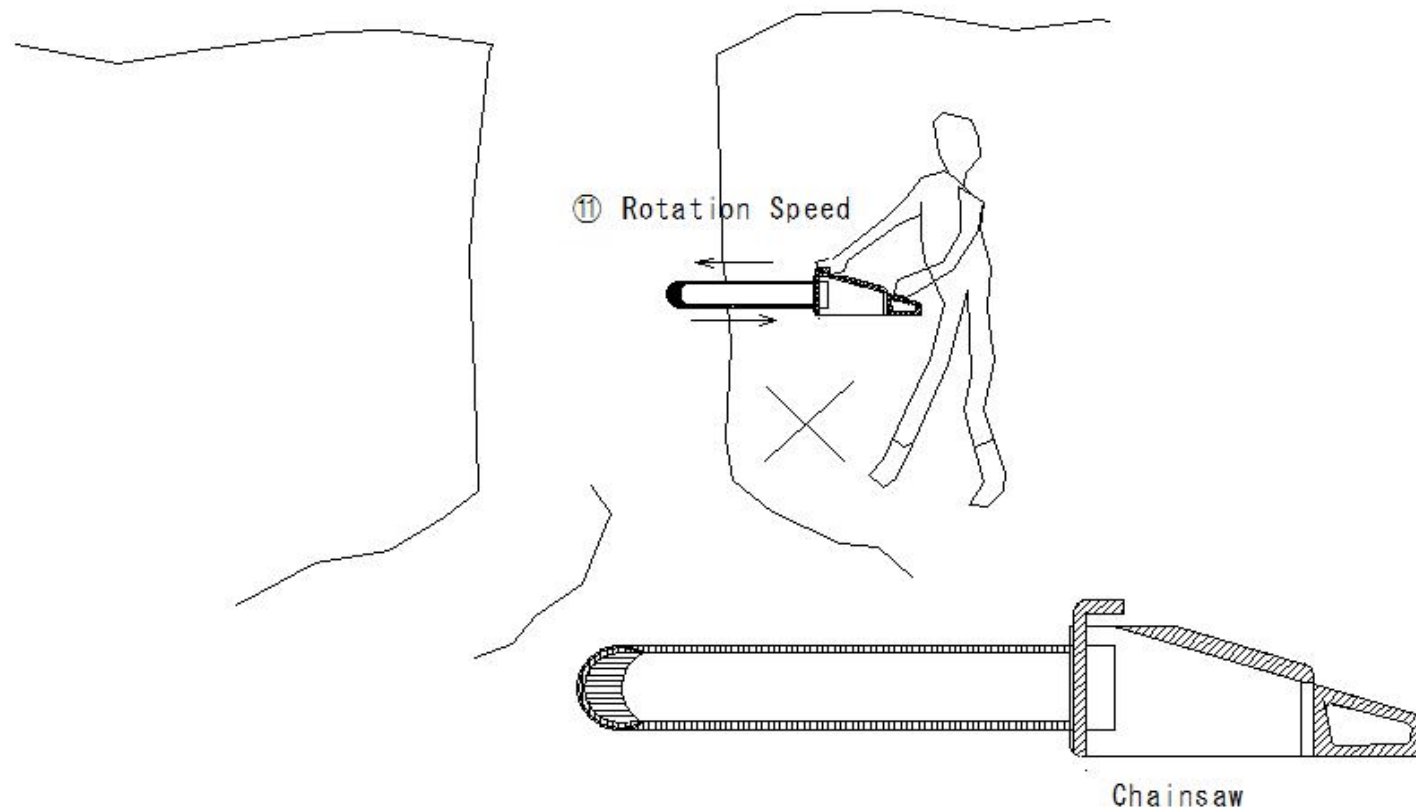
Chainsaw

(S1322) Chainsaw

(S1322) Chainsaw

[Rules for safe use]

- ⑪ Do not use the chainsaw in a way that significantly reduces its rotation speed.

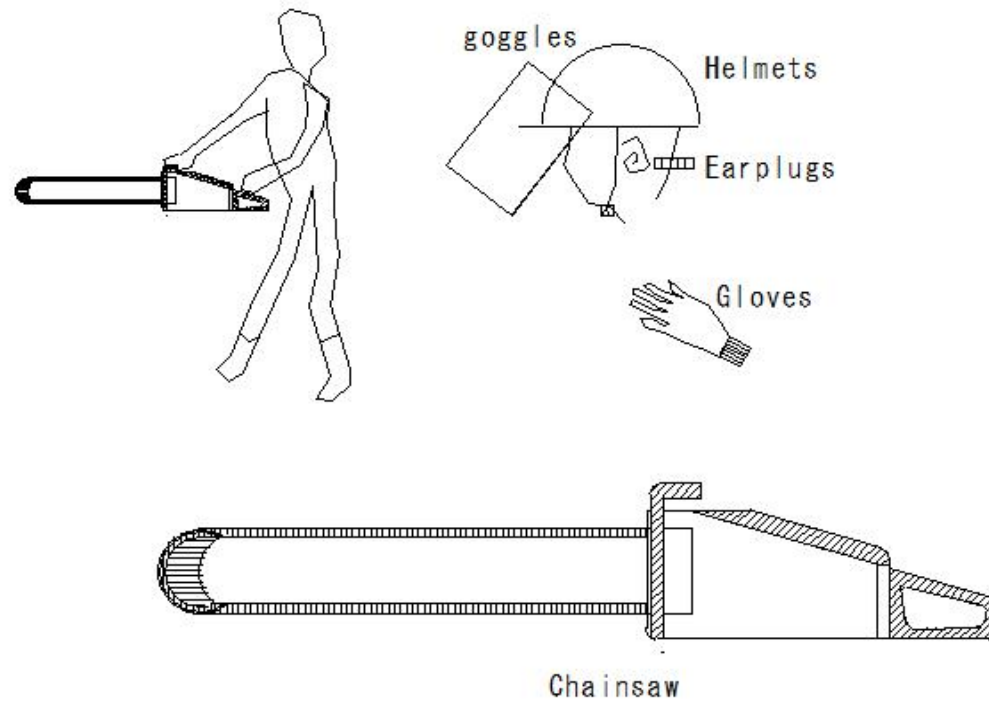


(S1323) Chainsaw

(S1323) Chainsaw

[Rules for safe use]

- ⑬ Wear protective gear such as anti-vibration gloves, earplugs, protective goggles, and protective helmets.

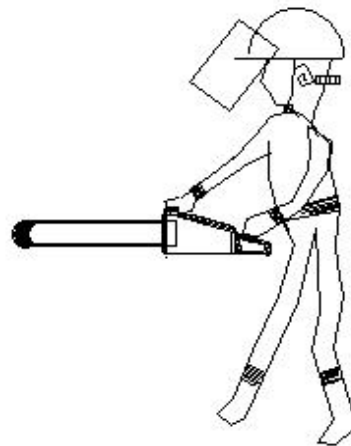


(S1324) Chainsaw

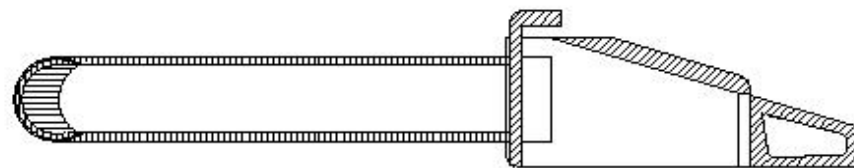
(S1324) Chainsaw

[Rules for safe use]

- ⑭ Wear light, warm clothing while working.



- ⑭ Light, warm clothing



Chainsaw

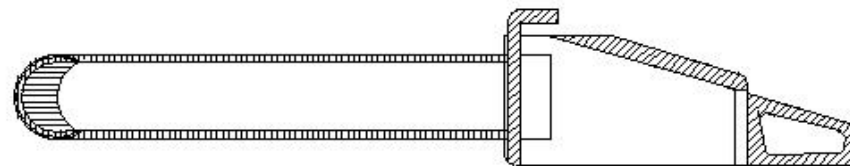
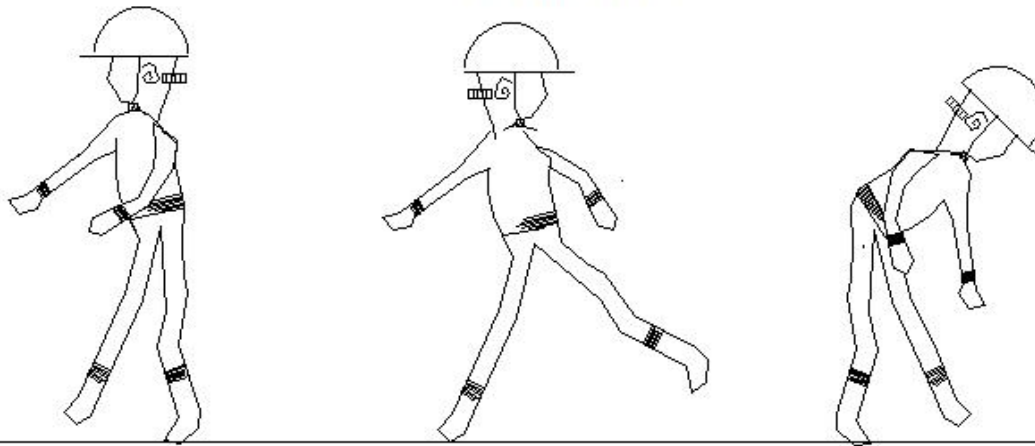
(S1325) Chainsaw

(S1325) Chainsaw

[Rules for safe use]

⑮ Do exercises and massages to relieve localized muscle fatigue and maintain physical health.

⑮ Exercises



Chainsaw

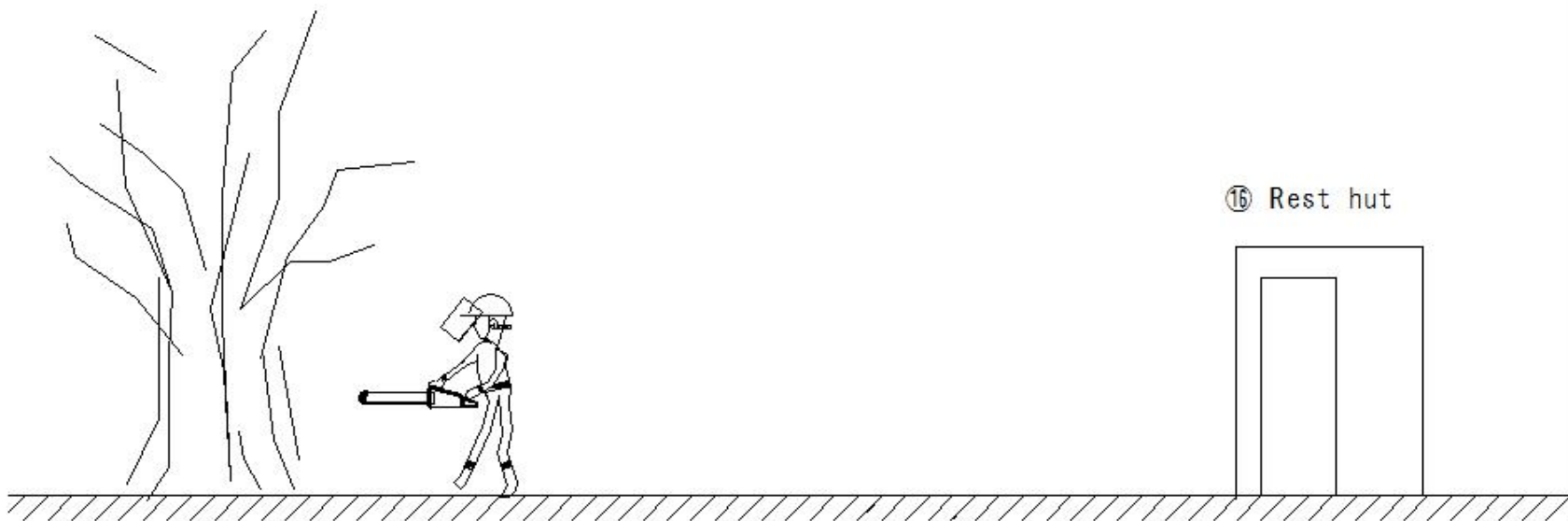
(S1326) Chainsaw

(S1326) Chainsaw

[Rules for safe use]

- ⑩ Install a rest hut with heating.

⑩ Rest hut



(S1327) Vibration Disorders

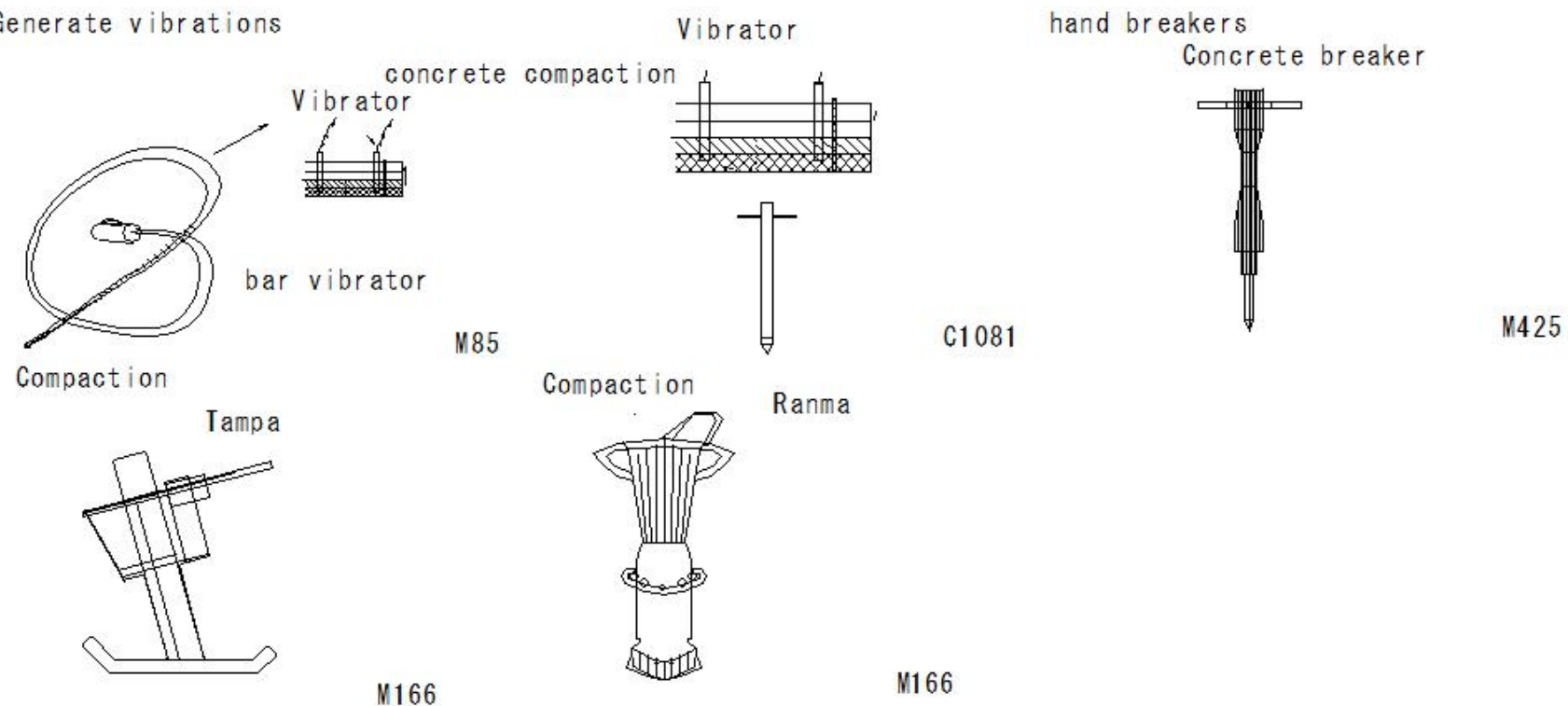
(S1327) Vibration Disorders

[Preventive measures against vibration disorders]

Working with vibrating tools

Learn about vibrating tools, vibration disorders and their prevention, relevant laws, etc.

Generate vibrations



(S1328) Vibration Disorders

(S1328) Vibration Disorders

Work involving the use of vibrating tools

[Industries for workers who handle vibrating tools]

Construction and civil engineering

Demolition work

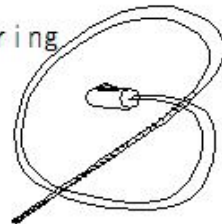
Landscaping work

Pipework work

Machinery and equipment manufacturing

Maintenance service industry

Generate vibrations



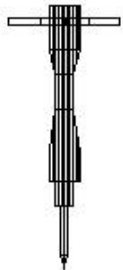
bar vibrator
M85



C1081

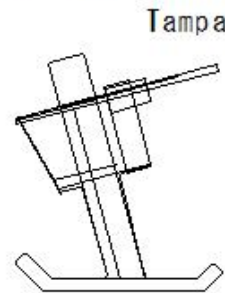
hand breakers

Concrete breaker



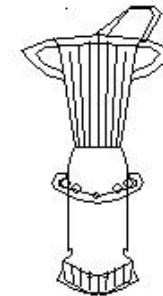
M425

Compaction



M166

Compaction



Ranma

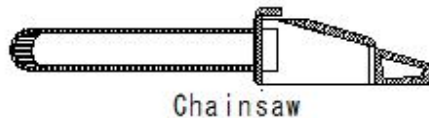
M166

(S1329) Vibration Disorders

(S1329) Vibration Disorders

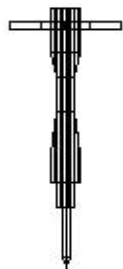
Work involving the use of vibrating tools

- ① Electric hammers and drills
- ② Hand breakers
- ③ Impact wrenches
- ④ Concrete vibrators
- ⑤ Concrete breakers
- ⑥ Felling trees
- ⑦ Breaking concrete



Chainsaw

hand breakers
Concrete breaker



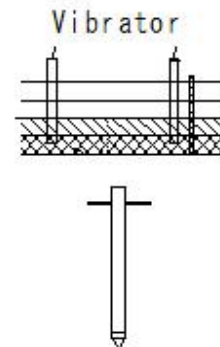
M425

Generate vibrations



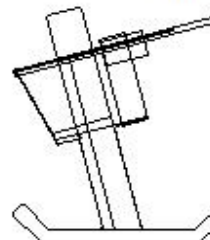
bar vibrator
M85

concrete compaction



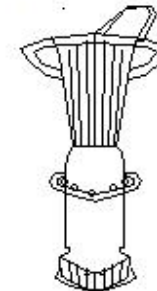
G1081

Compaction
Tampa



M166

Compaction
Ranma



M166

(S1330) Vibration Disorders

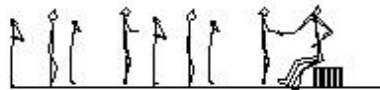
(S1330) Vibration Disorders

Work involving the use of vibrating tools

[Preventive measures for vibration disorders]

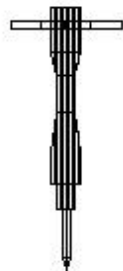
- ① Properly inspect vibrating tools and manage work hours concrete compaction
- ② Get regular health checks
- ③ Use tools that are as light as possible and produce as little vibration and noise as possible
- ④ Regularly inspect and maintain tools according to the times and methods specified in the instruction manual

② (Medical Examination)



hand breakers

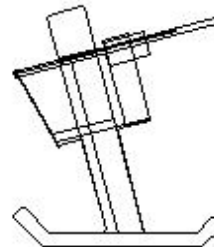
Concrete breaker



M425

Compaction

Tampa



M166

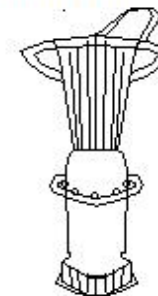
Generate vibrations

bar vibrator

M85

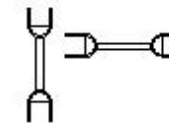
Compaction

Ranma

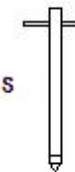
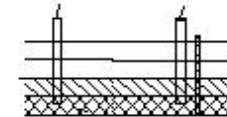


M166

④ Inspect



Vibrator



C1081

(S1331) Noise Disorders

(S1331) Noise Disorders

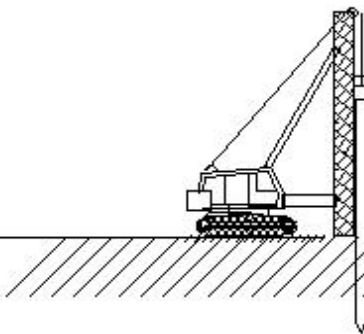
Guidelines for preventing noise disorders

Noisy work (construction-related)

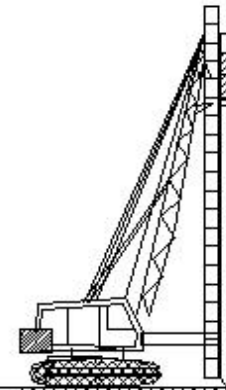
Noise from construction work is regulated by the Noise Regulation Act, the Vibration Regulation Act.
[Noise Regulation Act]

- ① Work that generates significant noise is subject to regulation.
- ② The standard noise level at the site boundary is between 80 decibels and 85 decibels for construction and demolition work.
- ③ Work hours are 7:00 a.m. and 7:00 p.m.
- ④ Maximum work hours are 10 hours per day
- ⑤ Maximum work period is 6 consecutive days

② 80 decibels and 85 decibels



- ③ 7:00 a.m. and 7:00 p.m.
- ④ 10 hours per day
- ⑤ 6 consecutive days



② 80 decibels and 85 decibels

M68

M236
F30

(S1332) Noise Disorders

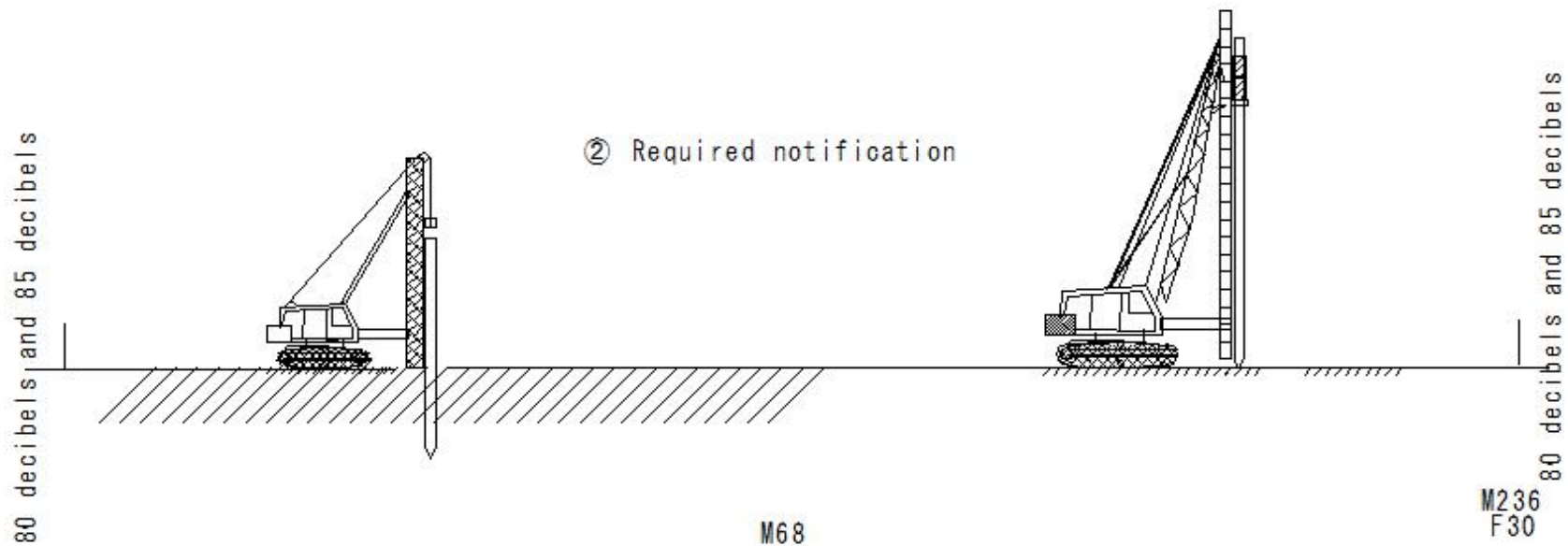
(S1332) Noise Disorders

Guidelines for preventing noise disorders

Noisy work (construction-related)

[Vibration Regulation Law]

- ① Regulates vibrations generated by construction work that falls under specific construction work
- ② In case of carrying out specific construction work within a designated area, a required notification must be submitted in advance (at least 7 days before the start of work)



(S1333) Noise Disorders

(S1333) Noise Disorders

Guidelines for preventing noise disorders

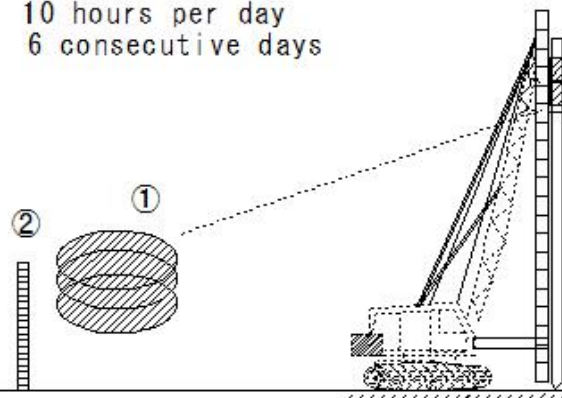
Noisy work (construction-related)

[Examples of noise countermeasures]

- ① Attach soundproofing panels, silencers (engine mufflers), etc. to work machines that use pile drivers, pile extractors, and pile driving and extracting machines.
- ② Install soundproofing walls at work sites where rock drills are used.
- ③ Attach soundproofing panels to work machines that use air compressors, enclose the machines in sheds, or change the location of the machines.

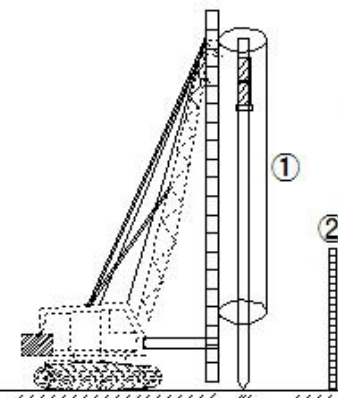
- ③ 7:00 a.m. and 7:00 p.m.
10 hours per day
6 consecutive days

80 decibels and 85 decibels



M68

Diesel hammer



F100

80 decibels and 85 decibels

(S1334) Noise Disorders

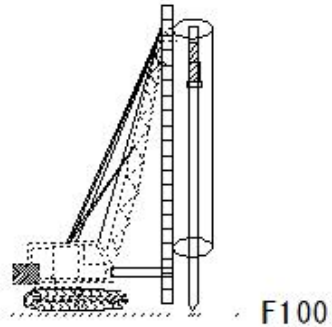
(S1334) Noise Disorders

Guidelines for preventing noise disorders

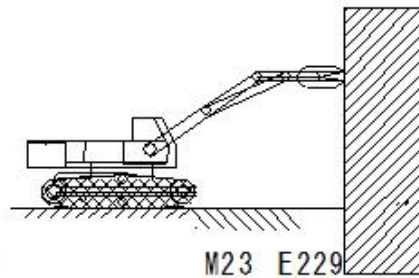
Noisy work (construction-related)

- ① Pile drivers ② Rock drills ③ Air compressors ④ Concrete plants ⑤ asphalt plants
⑥ Backhoes ⑦ Tractor shovels ⑧ Bulldozers

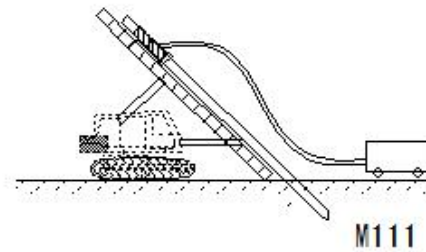
① Pile drivers



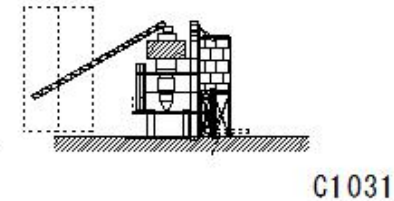
② Rock drills



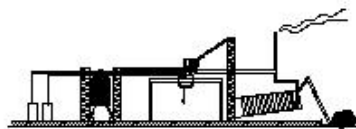
③ Air compressors



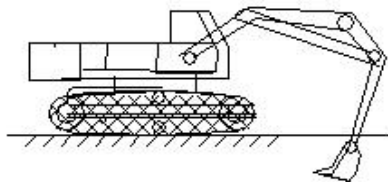
④ Concrete plants



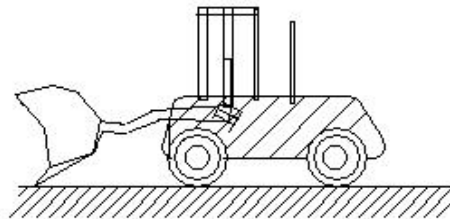
⑤ asphalt plants



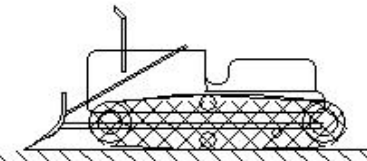
⑥ Backhoes



⑦ Tractor shovels



⑧ Bulldozers



(S1335) Noise Disorders

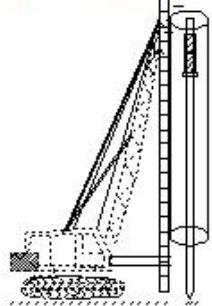
(S1335) Noise Disorders

Guidelines for preventing noise disorders

Noisy work (construction-related) Industrial Safety and Health Act, Article 88, Paragraph 3

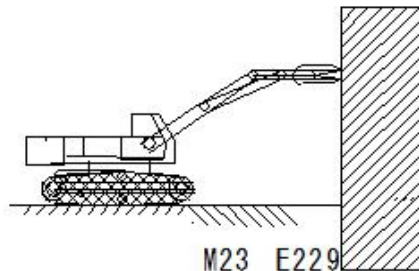
- ① Installation, relocation, or change to the main structural parts of certain buildings, machines.
- ② In case of starting construction work of a certain scale or type, the plan contents must be notified in advance
- ③ to the Chief of the competent Labor Standards Inspection Office.

① Pile drivers



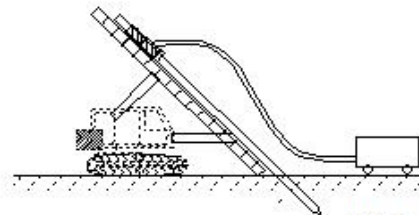
F100

② Rock drills



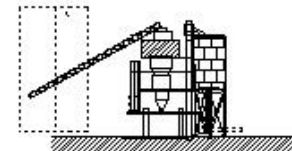
M23 E229

③ Air compressors



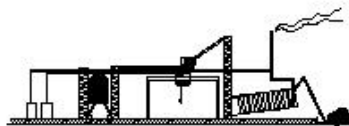
M111

④ Concrete plants



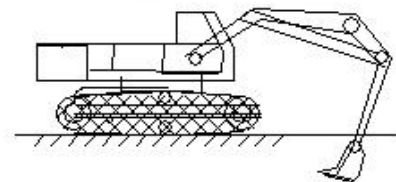
C1031

⑤ asphalt plants



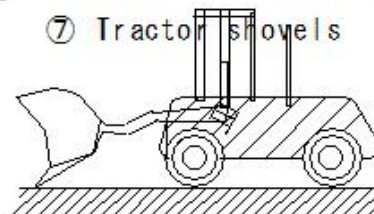
M80

⑥ Backhoes



M1

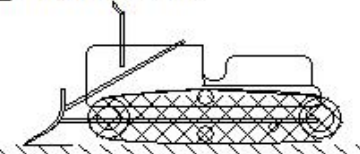
⑦ Tractor shovels



M392

E292

⑧ Bulldozers



M14

(S1336) Noise Disorders

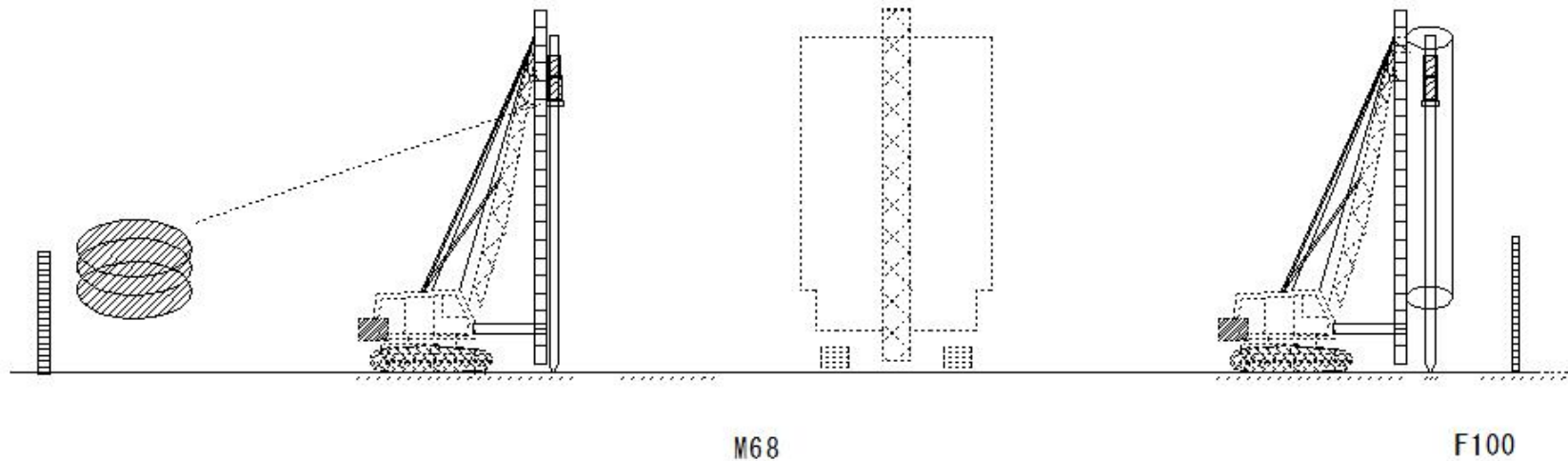
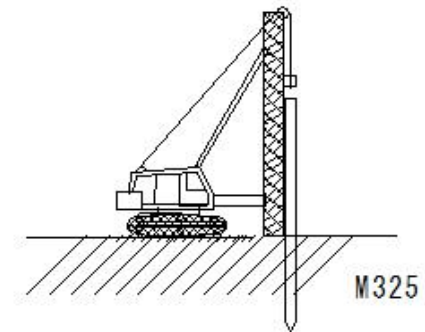
(S1336) Noise Disorders

Guidelines for preventing noise disorders

Outline of the **Noise Regulation Act**

Article 2, paragraph 3 of the **Noise Regulation Act**

① Pile drivers



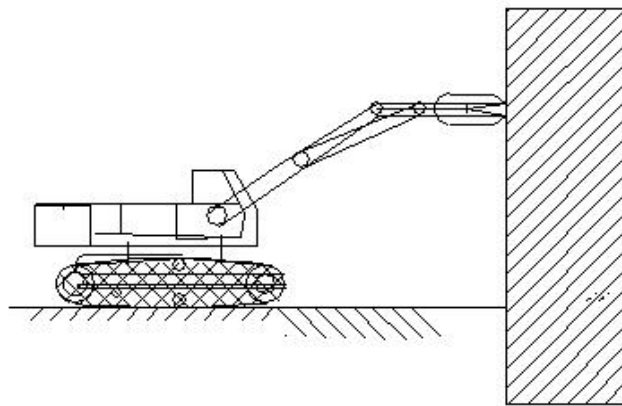
(S1337) Noise Disorders

(S1337) Noise Disorders

Guidelines for preventing noise disorders

Outline of the Noise Regulation Act

② Rock drills



M23

E229

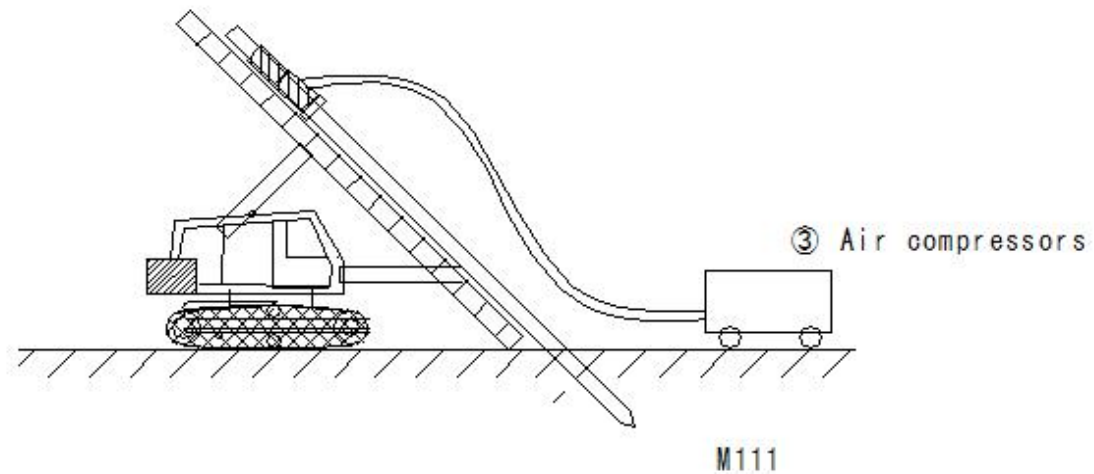
(S1338) Noise Disorders

(S1338) Noise Disorders

Guidelines for preventing noise disorders

Outline of the Noise Regulation Act

Article 2. Paragraph 3 of the Noise Regulation Law



(S1339) Noise Disorders

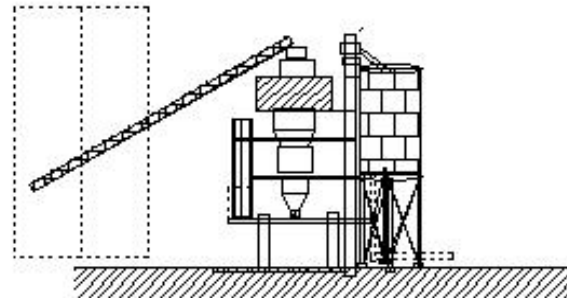
(S1339) Noise Disorders

Guidelines for preventing noise disorders

Outline of the Noise Regulation Act

Article 2, paragraph 3 of the Noise Regulation Law

④ Concrete plants



C1031

(S1340) Noise Disorders

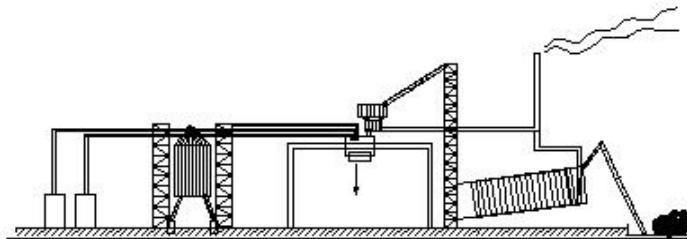
(S1340) Noise Disorders

Guidelines for preventing noise disorders

Outline of the **Noise Regulation Act**

Article 2, paragraph 3 of the **Noise Regulation Law**

⑤ asphalt plants



M80

(S1341) Noise Disorders

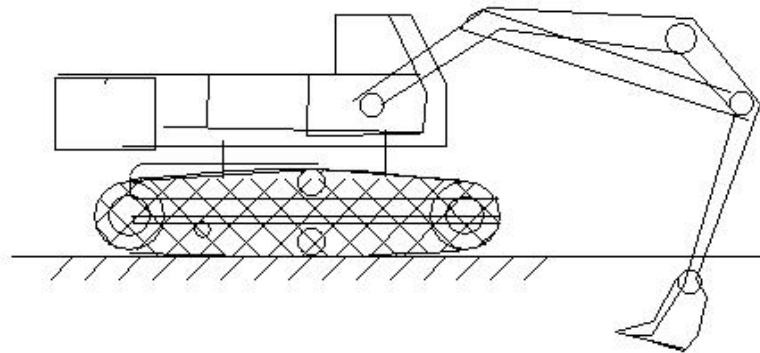
(S1341) Noise Disorders

Guidelines for preventing noise disorders

Outline of the **Noise Regulation Act**

Article 2, paragraph 3 of the **Noise Regulation Law**

⑥ Backhoes



M1

(S1342) Noise Disorders

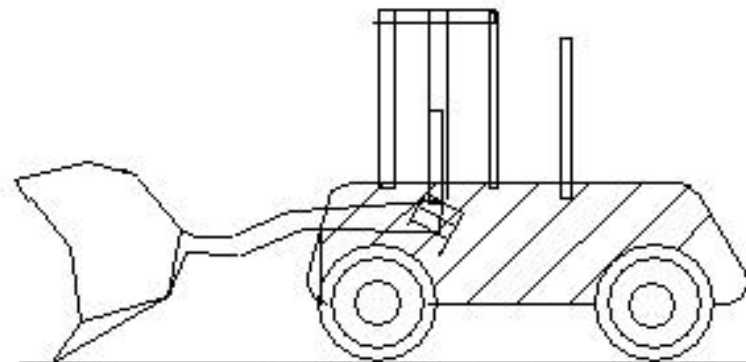
(S1342) Noise Disorders

Guidelines for preventing noise disorders

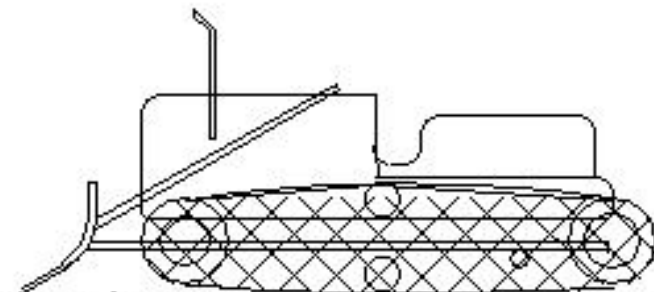
Outline of the Noise Regulation Act

Article 2, paragraph 3 of the Noise Regulation Law

⑦ Tractor shovels



⑧ Bulldozers



M392
E292

M14

(S1343) Noise Disorders

(S1343) Noise Disorders

Guidelines for preventing noise disorders

Outline of the Noise Regulation Act

Classification of areas

Type 1 area Areas that require the preservation of quiet in order to preserve a good residential environment

Type 1 : Good residential environment



(S1344) Noise Disorders

(S1344) Noise Disorders

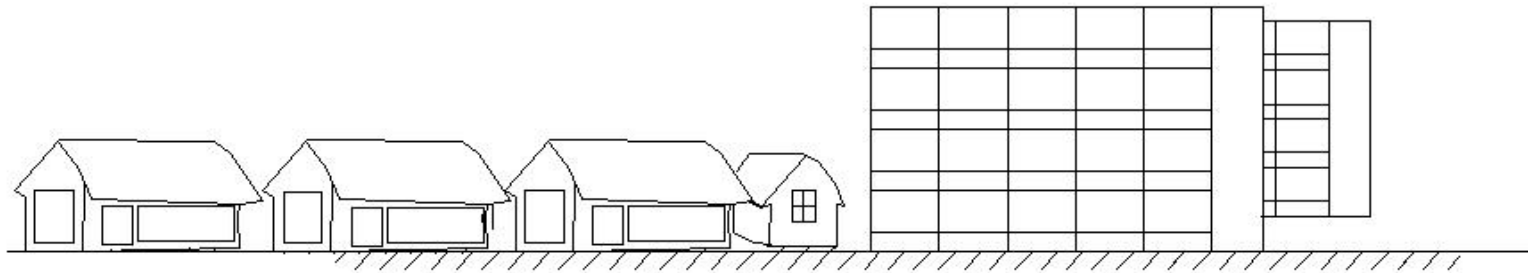
Guidelines for preventing noise disorders

Outline of the **Noise Regulation Act**

Classification of areas

Type 2 area Areas that require the preservation of quiet because they are used for residential purposes

Type 2 Quiet : Residential



(S1345) Noise Disorders

(S1345) Noise Disorders

Guidelines for preventing noise disorders

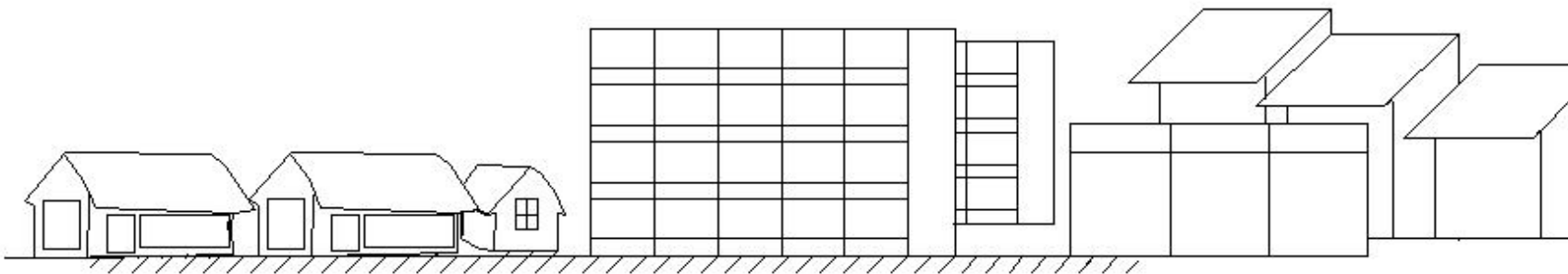
Outline of the Noise Regulation Act

Classification of areas

Three types of areas

- ① Areas used for commercial, industrial, etc. purposes in addition to residential use
- ② Areas where noise generation needs to be prevented in order to protect the living environment of residents

Commercial, Industrial, Residential



(S1346) Noise Disorders

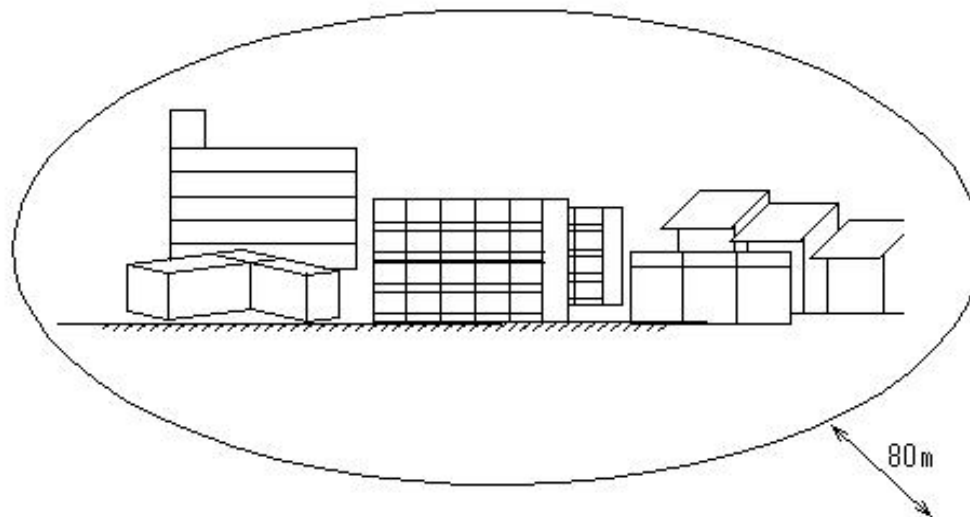
(S1346) Noise Disorders

Guidelines for preventing noise disorders

Outline of the Noise Regulation Act

Classification of areas

Within an 80m area around schools, hospitals, nurseries, libraries, and special nursing homes



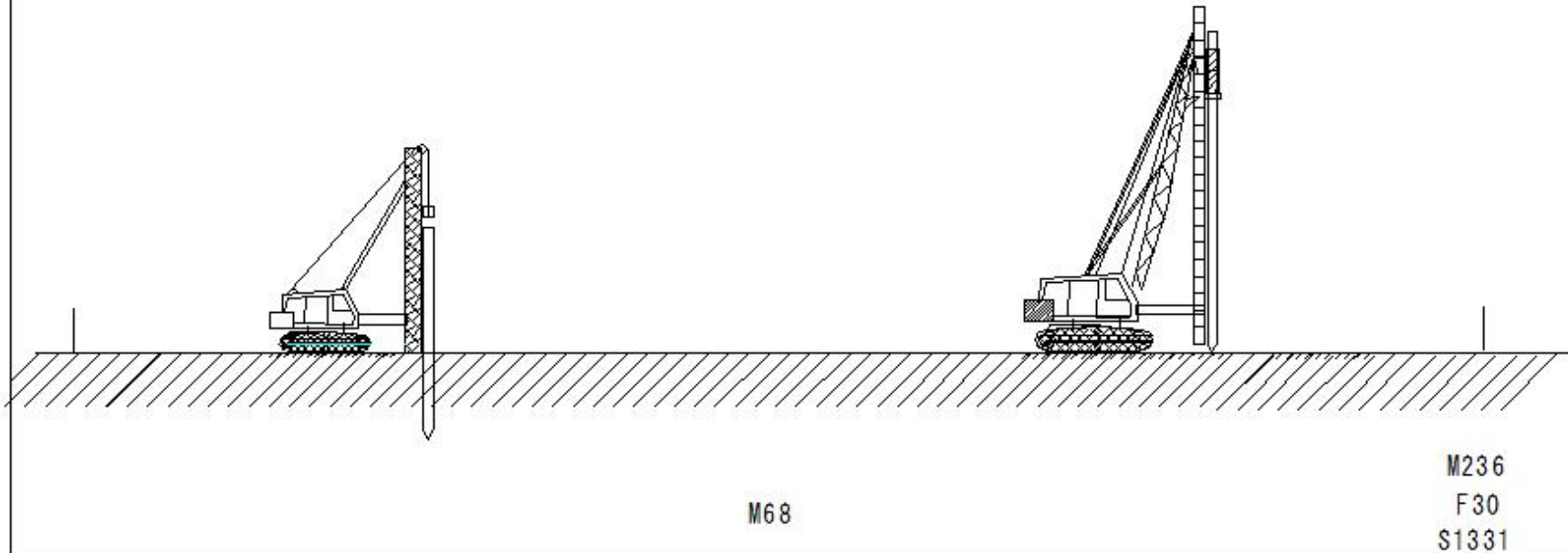
(S1347) Vibration Regulation

(S1347) Vibration Regulation

Vibration Regulation Law

Specific construction work

- ① Work that generates significant vibrations among construction work
- ② Pile drivers
- ③ Prior notification to the mayor of the city, town or village



(S1348) Vibration Regulation

(S1348) Vibration Regulation

Vibration Regulation Law

Specific construction work

○Vibration Regulation Law

○Noise Regulation Law

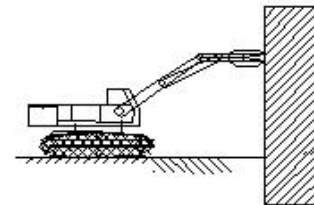
①Pile driver

②Rock drilling

③Notify the mayor of the city or town in advance

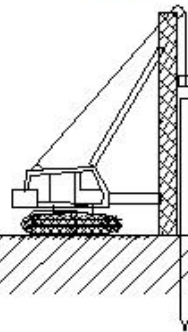
④Keep vibration (75dB) and noise (85dB) at the site boundary

② Rock drills

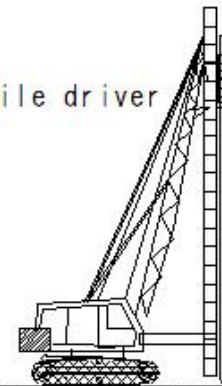


M23
E229
S1337

①Pile driver



①Pile driver



M236
F30
S1331

④Vibration (75dB) 、 Noise (85dB)

M68

④Vibration (75dB) 、 Noise (85dB)

(S1349) Vibration Regulation

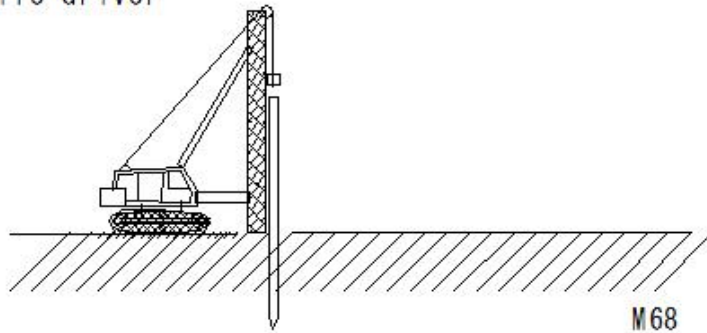
(S1349) Vibration Regulation

Vibration Regulation Law

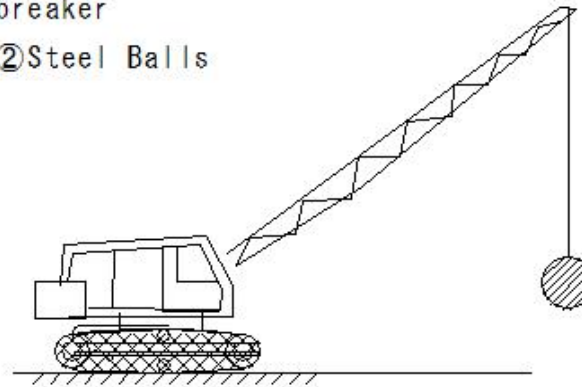
Specific construction work

- ① Work using a pile driver ② Work using steel balls to destroy buildings and other structures
③ Work using a pavement breaker ④ Work using a breaker

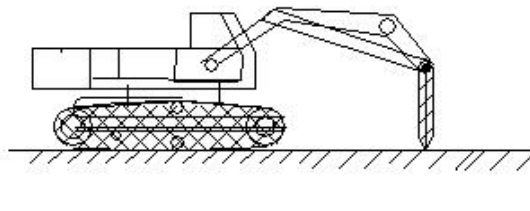
① Pile driver



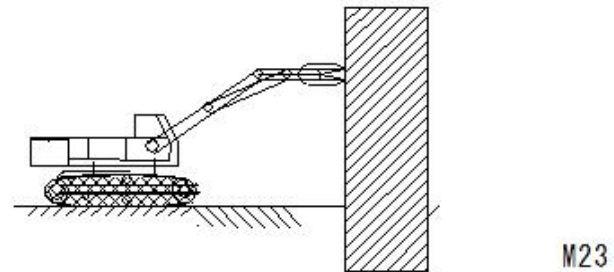
② Steel Balls



③ Pavement breaker



④ Breaker



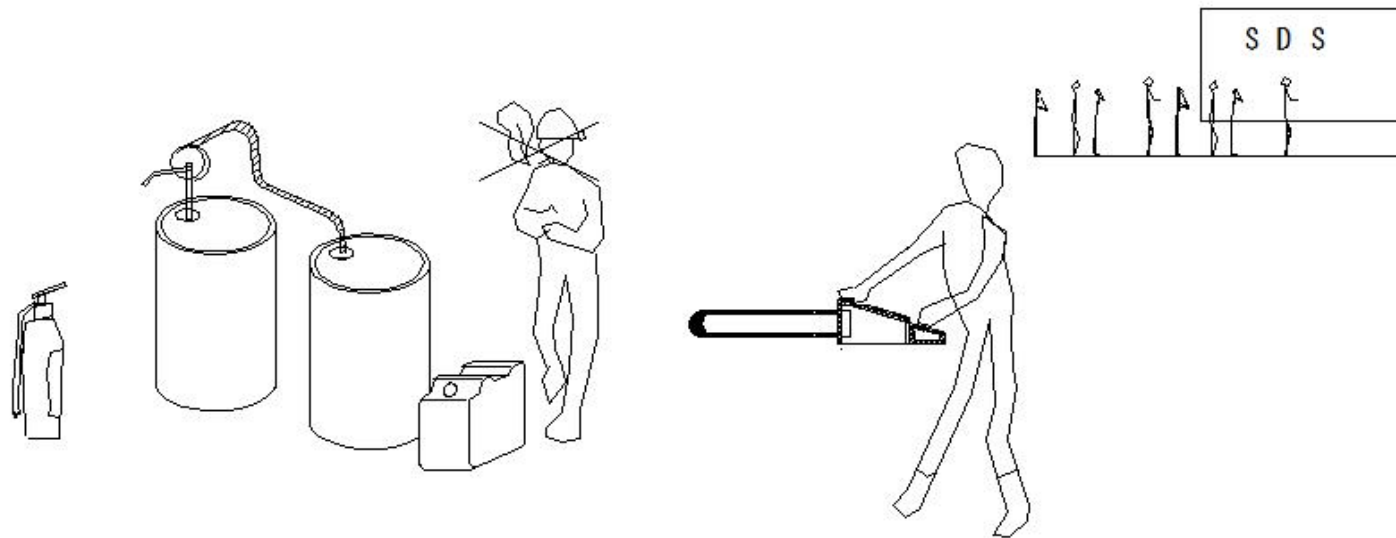
(S1350) Hazardous chemical substances

(S1350) Hazardous chemical substances

Displaying the dangers and harmfulness of hazardous chemicals and machines

Hazardous chemicals are chemicals that pose danger or toxicity, such as explosion, ignition, carcinogenicity, acute toxicity, or harm to the aquatic environment.

The SDS includes information such as the chemical name, product name, supplier, hazards, safety measures, and emergency procedures.



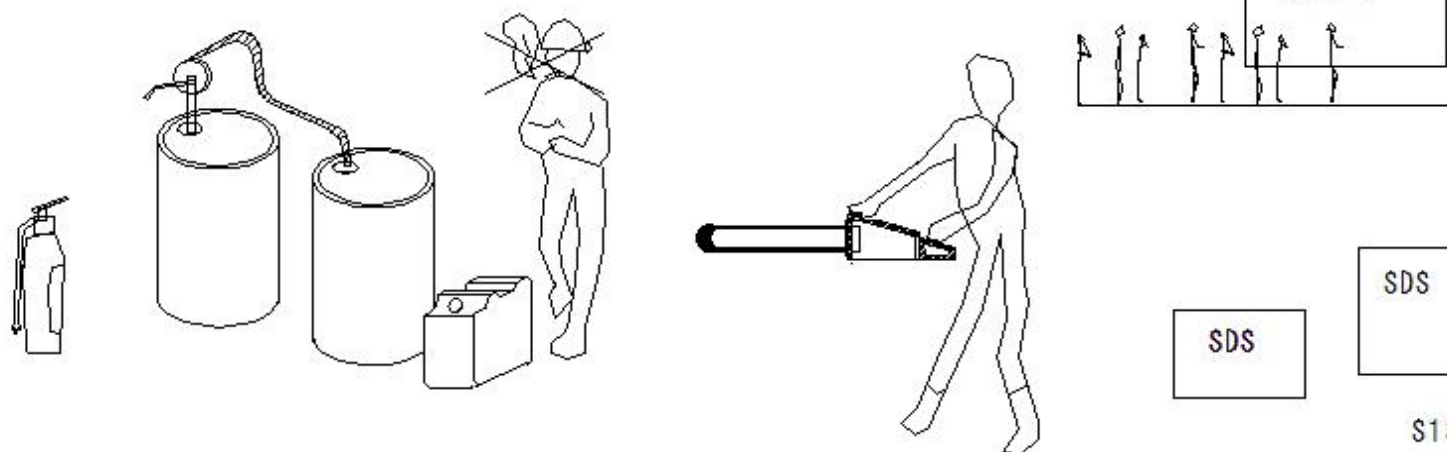
(S1351) Hazardous chemical substances

(S1351) Hazardous chemical substances

Displaying the dangers and harmfulness of hazardous chemicals and machines

[Information on hazardous chemicals]

- ① Hazardous information on chemicals is written on labels affixed or printed on containers and external packaging.
- ② Information on how to safely handle chemicals is written on safety data sheets (SDS).
- ③ The SDS contains information on the chemical name, product name, supplier, hazards, safety measures, emergency response, etc.
- ④ Article 57 of the Industrial Safety and Health Act requires that containers and packaging that contain hazardous substances must display the name, ingredients, effects on the human body, storage or handling precautions, etc.



S1316

(S1352) Hazardous chemical substances

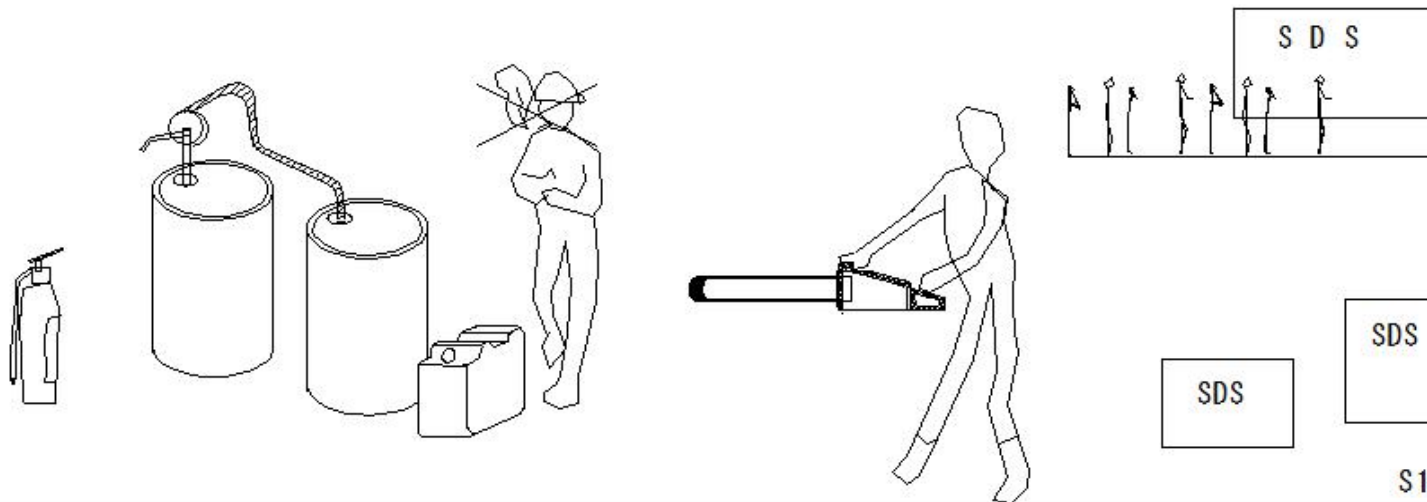
(S1352) Hazardous chemical substances

Displaying the dangers and harmfulness of hazardous chemicals and machines

[Survey on hazardous chemicals]

- ① Conducting a survey on the dangers or harmfulness of chemicals that may cause danger or health damage

① Survey



S1316

(S1353) Health Examinations

(S1353) Health Examinations

Types and timing of health examinations

Specific work

① Health examinations for workers dispatched overseas

In case of workers are to be dispatched overseas for more than six months and workers who have been dispatched overseas for more than six months

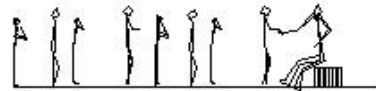
② Stool examinations for school lunch workers

Workers engaged in school lunch work in a cafeteria or kitchen attached to the business

③ Special health examinations for workers engaged in hazardous work, etc.

Workers who are regularly engaged in hazardous work such as dusty work or work involving organic solvents

(Medical Examination)



(S1354) Health Examinations

Types and timing of health examinations

Specific work

- ① Work involving handling a large amount of high-temperature objects and work in extremely hot places
- ② Work involving handling a large amount of low-temperature objects and work in extremely cold places
- ③ Work involving exposure to radium radiation, X-rays, and other harmful radiation
- ④ Work in places where dust or powder such as soil, stones, and animal hair is scattered significantly
- ⑤ Work under abnormal atmospheric pressure
- ⑥ Work that subjects the body to strong vibrations through the use of rock drills, tackling machines, etc.
- ⑦ Heavy work, such as handling heavy objects
- ⑧ Work in places where intense noise is generated, such as boiler manufacturing
- ⑨ Work in mines
- ⑩ Work that includes night work
- ⑪ Work involving the use of mercury, arsenic, yellow phosphorus, hydrofluoric acid, hydrochloric acid, nitric acid, sulfuric acid, caustic alkali, carbonic acid, or other similar harmful substances
- ⑫ Work in a place that emits gas, steam, or dust containing lead, mercury, chromium, arsenic, yellow phosphorus, hydrogen fluoride, chlorine, hydrochloric acid, nitric acid, sulfurous acid, sulfuric acid, carbon monoxide, carbon disulfide, hydrocyanic acid, benzene, aniline, or other similar harmful substances
- ⑬ Contamination by pathogens Work that is highly likely to

(S1355) Health Examinations

Types and timing of health checkups

Performed regularly.

Specific health checkup items

Items

Contents of the test

Examination, etc.

① Visual examination, palpation, auscultation, etc. are performed.

Interview

② We ask about your current health condition and lifestyle habits (drinking, smoking, etc.) and use this information as a guide for the examination.

Physical measurements

③ Height, weight, and waist circumference are measured, and BMI, an index of obesity, is also calculated.

Blood pressure

④ Blood pressure is measured to check the condition of the circulatory system.

Blood lipid test

⑤ Triglycerides, HDL cholesterol, and LDL cholesterol, which are causes of arteriosclerosis, are measured.

Liver function test

⑥ Liver cell enzymes are measured to check the condition of liver function, etc.

(S1356) Health Examinations

Types and timing of health checkups

Performed regularly.

Specific health checkup items

Items

Contents of the test

Blood glucose test ⑦ Fasting blood glucose or HbA1c and random blood glucose are measured to check for diabetes, etc.

(In case of blood glucose is measured at random, at least 3.5 hours must have passed since the start of a meal)

Urine test ⑧ The condition of the kidneys and urinary tract, as well as diabetes, etc. are checked.

Detailed health checkup items

Performed at the doctor's discretion based on the results of blood glucose, lipid, blood pressure and obesity checks, and on suspected anemia

Electrocardiogram ⑨ Heart-related diseases such as arrhythmia and angina are checked.

Fundus examination ⑩ A fundus camera is used to photograph the retina through the pupil and examine the blood vessels in the fundus. This allows us to learn about eye diseases caused by diabetes and the state of arteriosclerosis.

Anemia test ⑪ The number of red blood cells and hemoglobin in the blood are measured to check for

Serum creatinine test blood diseases such as anemia.

(including evaluation of renal function by eGFR)

Estimated glomerular filtration rate (eGFR) is calculated from serum creatinine, age and gender to evaluate the state of renal function.