

General Safety Guidelines (Overseas Edition)

These guidelines conform to the international standards: ISO (International Organization for Standardization)/ IEC (International Electrotechnical Commission), Japanese laws and regulations, and JIS, and will be revised on a continuous basis.

All Overseas Factories of Fujikura Group have a duty to follow not only the safety laws and regulations of each country but also these guidelines.

Fujikura Inherent Safety Promotion Team
2017/3/31

<How These Guidelines Came to Be>

In recent years, safety has become an increasingly important issue worldwide, and steps are being taken to put in place international standards.

Here at the Fujikura Group, our health and safety measures have so far been implemented by each branch location. However, we are not fully satisfied with the standards.

We have established these guidelines in an effort to promote inherent safety measures as well as to improve our health and safety to the required levels.

1.	Common Measures	
	1.1	Measures for Sharp Edges, Corners, and Protruding Objects
	1.2	Measures to Prevent Electric Shock
	1.3	Noise and Vibration Measures
	1.4	Radiation, Laser, and Electromagnetic Noise Measures
	1.5	Measures to Prevent Equipment Falling
	1.6	Safety Measures to Implement While Handling Tasks (e.g. machine maintenance, inspections, adjustments, cleaning), Signals When Starting up Machinery
	1.7	Measures for Flammable and Explosive Materials
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	2.2	Cable Haul-off Equipment (e.g. caterpillar, belt, and capstan types)
	2.3	Cable Stranding Machines, and Cable Taping Machines
	2.4	Cable Take Up Machines (portals, stand alone, under-roll, drum roll)

	2.5	Rotors (gears, chains, belts, line shafts, etc.)
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1. Common measures

1.1 Measures for Sharp Edges, Corners, and Protruding Objects

- (1) Install equipment that does not have any sharp edges, corners, or protruding objects to reduce worker hazards.
- (2) Implement hazard mitigation measures by using padding or rubber if any existing equipment has any hazardous parts.

Accompanying figure



Padding for L-shaped corners



Padding for pipes and round parts



Corner destined cushioning material

Relevant regulations

ISO12100 : 2010

Safety of machinery -- General principles for design

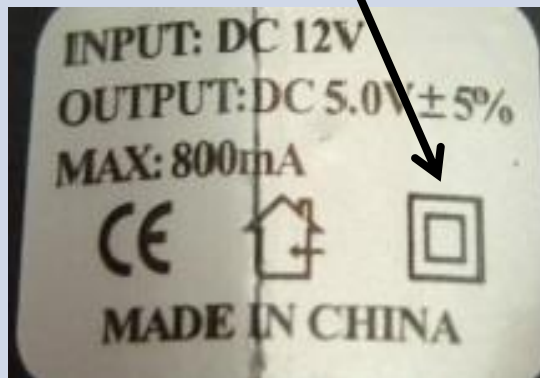
1. Common measures

1.2 Measures to Prevent Electric Shock

- (1) When using electrical equipment in damp areas, or when using mobile or portable electrical equipment, make sure that the equipment has a double insulation design. **Or**, be sure to set up and use an earth-leakage circuit breaker to prevent electric shock caused by electrical leakage.

Accompanying figure

Double insulated symbol



The rule of thumb to prevent electric shock is to make sure that the equipment does not come into contact with electricity.

The live parts must not be visible.

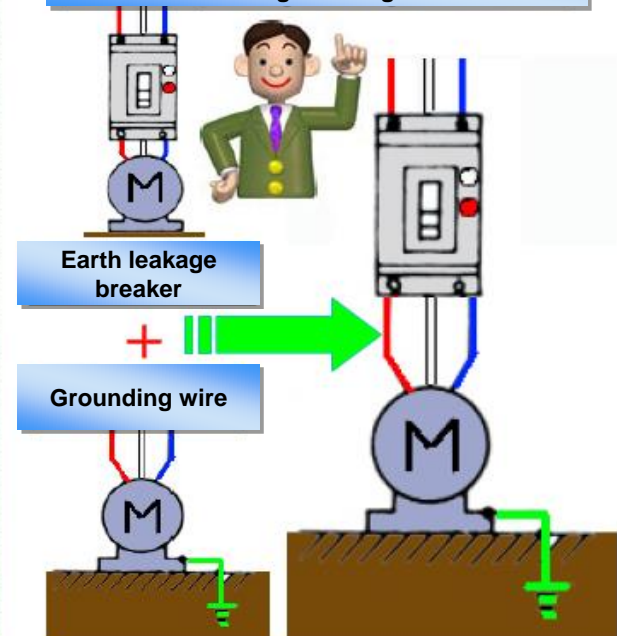
Do not place the equipment near any live parts.

Electrical power tools with a double insulation design



The insulated layer is the area outlined in red

The key factors are the earth leakage breaker and the grounding wire



1. Common measures

1.3 Noise and Vibration Measures

- (1) In order to ensure the health of workers, measures to reduce sources of outbreaks, provision of a suitable work environment with appropriate environmental measurements, and health checkups in line with laws and regulations.
 - (a) When handling vibratory tools which have the potential to cause adverse physical effects, investigate the hazards or danger level and take any other necessary measures.

In addition, workers who handle vibratory tools (other than chainsaws) must take safety training courses.
 - (b) Working environment measurements must be performed periodically (at least every 6 months) by working environment measurement experts or by measurement agencies. Records must be kept for 3 years.
 - (c) Must implement measures to reduce sources of outbreaks, transport route measures, and worker measures for each facility, piece of equipment, and work process.

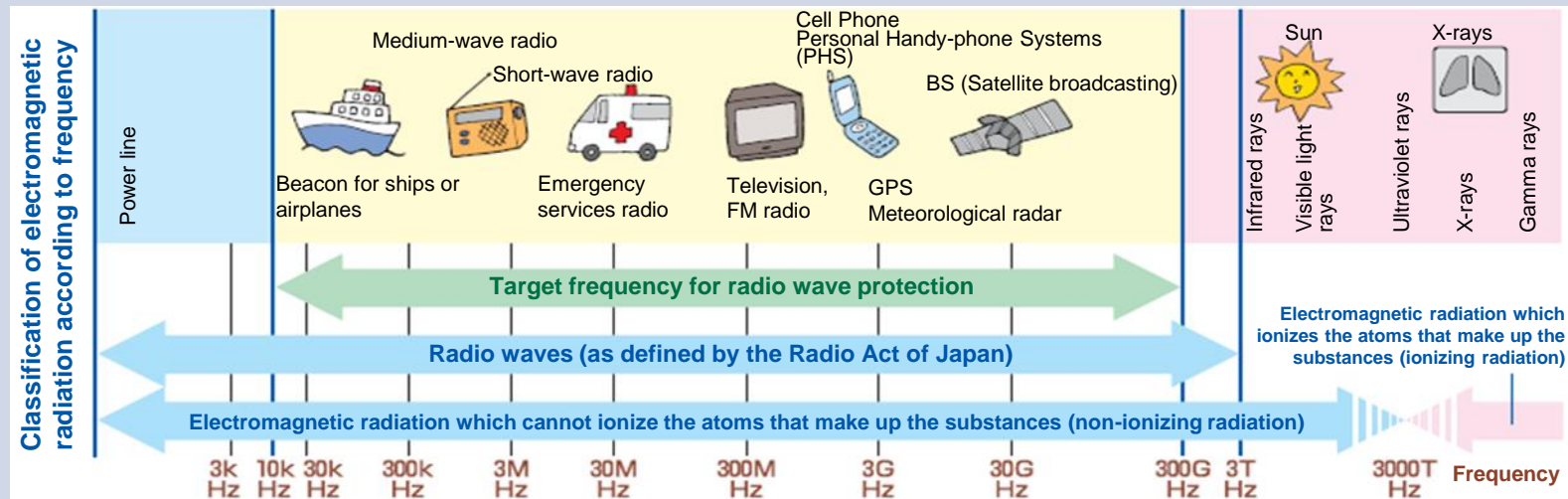
When implementing work environment improvement measures, the same methods for evaluating and assessing the measures must be used both before and after the implementation of the measures.

1. Common measures

1.4 Radiation, Laser, and Electromagnetic Noise Measures

- (1) There are two types of electromagnetic radiation: ionizing radiation and non-ionizing radiation.
 - (a) Ionizing radiation: Can harm genes in the body.
 - (b) Non-ionizing radiation: Can cause stimulatory as well as thermal effects. Leaked radio waves may cause other devices to malfunction.
- (2) Must implement safety measures that are appropriate for the type of electromagnetic radiation and also meet other regulations and indexes.

Accompanying figure



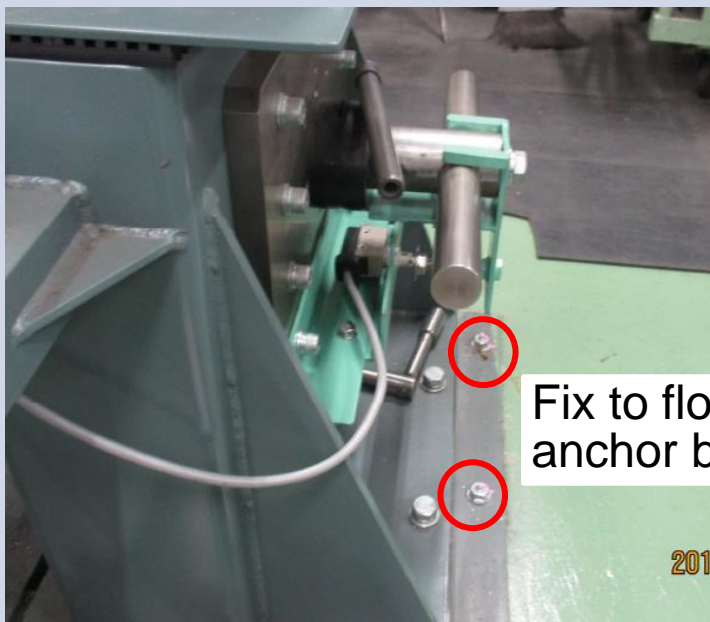
(Source: "Radio Waves and Safe Living" (Ministry of Internal Affairs and Communications))

1. Common measures

1.5 Measures to Prevent Equipment Falling

- (1) Equipment must be fixed to the floor as fall-prevention and movement prevention measures in the event of an earthquake.

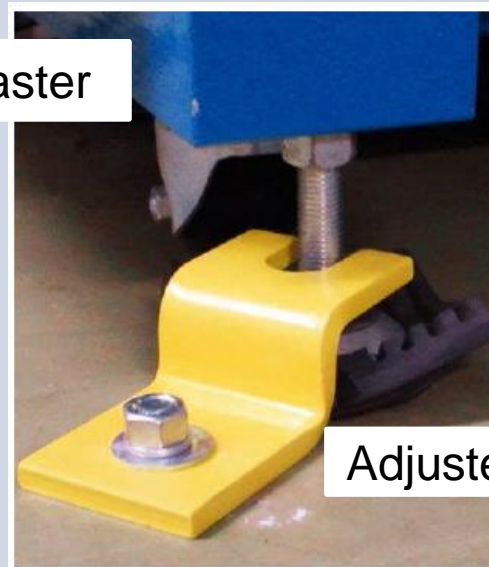
Accompanying figure



Fix to floor with anchor bolt

Large equipment must be fixed firmly to the floor with anchor bolts.

Caster



Adjuster

For small portable equipment, use metal fittings to prevent the adjusters from moving.

1. Common measures

1.6 Safety Measures to Implement While Handling Tasks (e.g. machine maintenance, inspections, adjustments, cleaning), Signals When Starting up Machinery

- (1) When carrying out the above tasks, implement measures to prevent the power from being turned on easily (e.g. cutting off the power, putting locks on the power supply unit and overseeing the locking system).
- (2) Establish designated signals for communicating the risk of danger to workers (such as operators and maintenance staff) when starting up machinery. The signals must be used by the designated person to inform workers.
- (3) Measures must be implemented for machinery with blind spots that fit the following descriptions.
 - (a) Multi-level machinery (e.g. CV (Cyclic Voltammetry) machine, VAD machine, spinning apparatus)
 - (b) Large machine and long length machine. (e.g. Stranding machines, extruding machines)

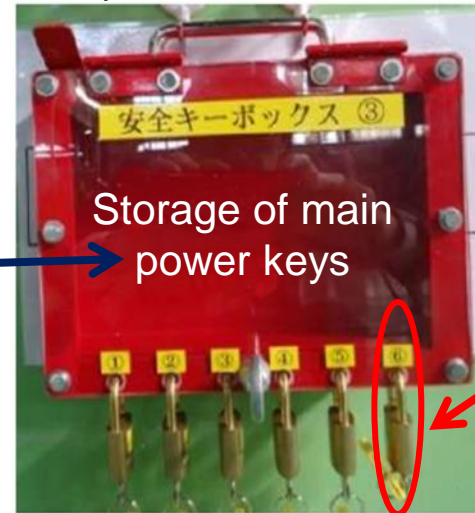
Accompanying figure

Measures to Prevent Machinery Power from Being Turned on Easily

Place key switch on
the main power unit



Each worker stores their
padlock in the box



Each worker
stores their
own keys

Place power keys in a storage box and each worker and personnel secure it with a padlock.
Set up a system in which each worker and personnel cannot access their main power key without opening the lock.

Relevant
regulations

(ISO14118:2000)

Machine safety: Preventing unexpected
startup

1. Common measures

1.7 Measures for Flammable and Explosive Materials

- (1) Hazardous materials defined in the Fire Service Act or the Industrial Safety and Health Act must be handled and managed according to laws and regulations in order to prevent fire as well as to reduce the damage caused by earthquakes and other disasters.
 - (a) Make sure that there is enough distance between the flammable or explosive material and the fire or explosion and set aside a vacant area (which is part of our property) in the vicinity of hazardous equipment (safety distance).
 - (b) Set up an oil fence in the outdoor tanks where hazardous materials are stored, and a liquid fence in the storage tank for flammable liquefied gas in order to prevent fire or explosion from occurring when they are leaked.
 - (c) Set up fire extinguishing equipment (that comply with the Fire Service Act) in areas with buildings and chemical and drying equipment, as well as other areas where hazardous and flammable oils are handled.
 - (d) In areas where flammable steam, gas, and dust are present, implement measures such as ensuring adequate air and ventilation, as well as removing dust to prevent fire.
 - (e) Electrical machinery and equipment handled in areas with a risk of explosion must have an explosion proof design that is suitable for the type of hazardous material.

2. Guards (Rotors and Moving Parts)

All Guard Sections

- (1) The guards must be painted yellow (2.5Y8/14 in the Munsell color system)

2.1 Cable Pay Off Machine

- (1) Set apart the Cable Pay Off Unit with a guard or provide enough safety distance from workers as well as zoning out work areas so that people other than workers would not intrude into the work areas, preventing them from contacting the pay-off stands by thoroughly calling for attention.
- (2) If there is a risk of an accident involving the drum (bobbin), parts falling out, or the scattering of broken materials, install a guard that covers the area around the pay-off stand, the entire pay-off stand and the drum (bobbin). If there are hazards in the upper level, make sure that the guard also covers that section.
- (3) Install interlocks, which enable continuous operation of the Cable Pay-off Machine only when the guard is closed.
- (4) Install interlocking guard with guard locking to prevent the guard from being opened while the machine is operating.
- (5) Design the machine so that only the inching operation (10 rpm or less) is enabled when the guard is opened, and it can stop within half a rotation during downtime.
- (6) Place the emergency stop button in an appropriate location.
- (7) Design the machine so that it will start up only when the speed setting is at zero.

Continued on next page

Accompanying figure

Example of a guard of Cable Pay Off Machine/Unit



Example of scattering prevention



Example of a surrounding guard

2. Guards (Rotors and Moving Parts)

2.2 Cable Haul-off Equipment (e.g. caterpillar, belt, and capstan types)

- (1) Install a guard that covers up the entire equipment.
- (2) Install an interlock on the guard so that the haul-off machine can operate only when the guard is closed.
- (3) Install interlocking guard with guard locking to prevent the guard from being opened while the machine is operating.
- (4) Design the machine so that only the inching operation (5 m per min. or less) is enabled when the guard is open, and it stops within 1 second.
- (5) Install a guard both the entrance and the exit of cable.
- (6) Place the emergency stop button in an appropriate location.
- (7) Design the machine so that it will start up only when the speed setting is at zero.

Accompanying figure

Examples of a guard of Cable haul-off equipment



Cable Haul-off Machine



Belt-rap haul-off Machine



Rotating haul-off Machine



Double capstan Machine

2. Guards (Rotors and Moving Parts)

2.3 Cable Stranding Machines and Cable Taping Machines

- (1) Install a guard that covers the entire machine including the upper level.
- (2) Install an interlock on the guard so that Cable Stranding Machines and Cable Taping Machines can operate continuously only when the guard is closed.
- (3) Install interlocking guard with guard locking to prevent the guard from being opened while the machine is operating.
- (4) Design the machine so that only the inching operation (10 rpm or less) is enabled while the guard is open, and stops within half a rotation during downtime.
- (5) Install a guard both the entrance and the exit of cable as well as the dice of the Cable Stranding Machine.
- (6) Place the emergency stop button in an appropriate location.
- (7) Design the machines so that they start up only when the speed setting is at zero.

Accompanying figure



Cable Taping Machine

Examples of guard



Cable Stranding Machine



The dice of
Cable Stranding Machine

2. Guards (Rotors and Moving Parts)

2.4 Cable Take Up Machines (portal, stand alone, under-roll, drum roll)

- (1) Set apart the Cable Take Up Unit with a guard or provide enough safety distance from workers as well as zoning out work areas so that people other than workers would not intrude into the work areas, preventing them from contacting the pay-off stands by thoroughly calling for attention.
- (2) If there is a risk of an accident involving the drum (bobbin), parts falling out, or the scattering of broken materials, install a guard that covers the area around the winding machine, the entire winding machine, or the drum (bobbin). If there are hazards in the upper level, make sure that the guard also covers that section.
- (3) Set up a Sensor to detect a worker rolled up in a drum, in an appropriate location.
- (4) Install interlocks, which enable continuous operation of the Cable Take Up Machine only when the guard is closed.
- (5) Install interlocking guard with guard locking to prevent the guard from being opened while the machine is operating.
- (6) Design the machine so that only the inching operation (10 rpm or less) is enabled while the guard is open, and stops within half a rotation during downtime.
- (7) Place the emergency stop button in an appropriate position.
- (8) Design the machine so that it will start up only when the speed setting is at zero. However, for parasol winding machines, follow the “Parasol Winding Machine Safety Guidelines.” Continued on next page

Accompanying figure

Example of a guard of Cable Take Up Machine/Unit



Rotating type



Portal type



Optical Fiber Take Up Machine

2. Guards (Rotors and Moving Parts)

2.5 Rotors (Gears, chains, belts, line shafts, etc.)

- (1) Install guards for all exposed rotors.
- (2) The guard must cover the rear side as well as the area surrounding the axis.
- (3) Design the guards so that they can only be removed with a tool.
- (4) When installing a transparent observation window for checking the inside, consider the durability of the transparent observation window.

Accompanying figure

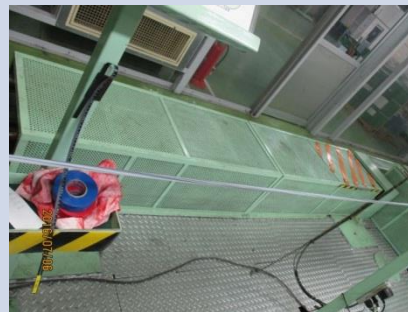
Examples of Guards



Belt guard



Chain guard



Line shaft guard



Coupling part guard

2. Guards (Rotors and Moving Parts)

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2.6 Moving Parts

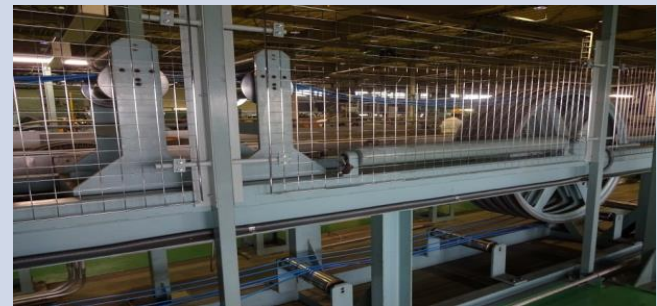
- (1) Set up a guard for all exposed moving parts.
- (2) Design the guards so that they can only be removed with a tool.
- (3) Install interlocks, which enable continuous operation of the Moving Parts only when the guard is closed.
- (4) Install interlocking guard with guard locking to prevent the guard from being opened while the machine is operating.
- (5) Place the emergency stop button in an appropriate location.

Accompanying figure



Guard for the moving part of a shaft

Examples of Guards



Guard for the moving part of an accumulator

2. Guards (Rotors and Moving Parts)

2.7 Industrial Robots

- (1) Surround industrial robots with a safety guard to create a safeguard between the robot and the workers to ensure safety.
- (2) If there is an opening or a door for human access, employ an intrusion detection sensor or a door switch.
- (3) Place a DO NOT ENTER sign on the safety guard.
- (4) Install interlocking guard with guard locking to prevent the guard from being opened while the machine is operating.

Accompanying figure



2. Guards (Rotors and Moving Parts)

2.8 Others (pulleys, rollers, path lines, etc.)

- (1) Place a guard along path lines where there is a potential for human contact which may result in an accident.
- (2) Cover the openings along the side of the pulleys with a guard.
- (3) Design the guards so that they can only be removed with a tool.
- (4) Install guards on the parts of rollers or pulleys where there is the risk of an accident.

Accompanying figure



Guards for path lines where there is a potential for contact with workers

Examples of Guards



Pulley opening guard



Roller guard

2. Guards (Rotors and Moving Parts)

Relevant regulations	ISO12100 : 2100	Safety of machinery -- General principles for design -- Risk assessment and risk reduction
	ISO14119 : 2013	Safety of machinery -- Interlocking devices associated with guards -- Principles for design and selection
	ISO13854 :1996	Machinery safety: Minimum amount of space required to prevent human body parts from being crushed.
	ISO14120 : 2015	Safety of machinery -- Guards -- General requirements for the design and construction of fixed and movable guards
	ISO13857 : 2008	Safety of machinery -- Safety distances to prevent hazard zones being reached by upper and lower limbs

3. Guards (Parts with high temperatures or extremely low temperatures)

- (1) When there is a risk of injury resulting from contact with the parts of a machine at high or low temperatures, set up a guard or add thermal insulation.
Moreover, the surface temperature needs to be roughly between -18 degrees and 80 degrees.
- (2) Be sure to abide by the below reference temperatures.
- (3) If the reference temperatures cannot be met, consider the use of warning labels or personal protective equipment.

Accompanying figure

Temperature limits for equipment which may come into contact with parts of the body (JIS C 60364-4-42 Table 42A)		
Parts workers can touch	Surface material	Maximum temperature °C
Parts workers hold in their hand(s) and operate	Metal	55
	Nonmetal	65
Parts workers do not hold in their hands but touch intentionally	Metal	70
	Nonmetal	80
Parts workers do not need to touch during normal use	Metal	80
	Nonmetal	90

Relevant
regulations

IEC60364-4-42 :
2010

Low-voltage electrical installations - Part 4-42: Protection for safety - Protection against thermal effects

4. Prevention of Falling Hazards

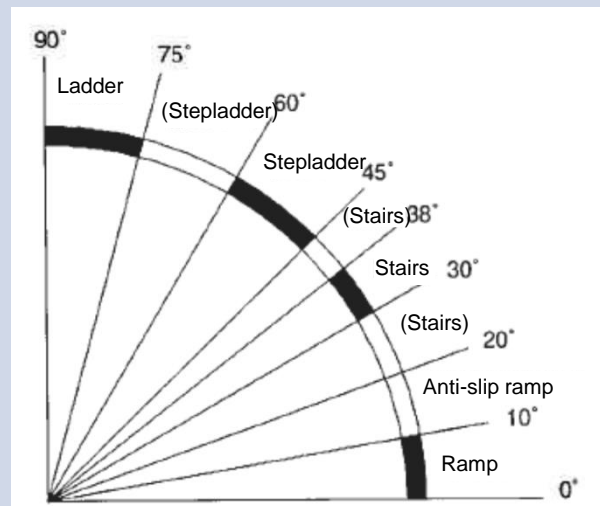
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4.1 Choice of fixed means and general requirements of access (Permanent means of access to machinery)

- (1) When working in places with a height or depth of over 1.5 m, set up facilities that enable elevating safely.
- (2) The elevating facilities shall be elevating machines, ramps, and stairs. Ladders and stepladders may be used only if setting up the above facilities is difficult.
- (3) Set up the elevating facilities according to the recommended angle of inclination.

Accompanying figure

Elevating facilities and
their angle of inclination
From ISO14122
(Black indicates the
recommended angle of
inclination)



Elevating facility	Recommended angle of inclination
Ramp	0° ~ 10°
Stairs	30° ~ 38°
Stepladder	45° ~ 60°
Ladder	75° ~ 90°

Relevant
regulations

ISO14122-1 :
2016

Safety of machinery -- Permanent means of access to
machinery -- Part 1: Choice of fixed means and general
requirements of access

4. Prevention of Falling Hazards

4.2 Working Platform (Permanent means of access to machinery)

- (1) An Working Platform is a level area that has been elevated from the rest of the work area in order to handle a task.
- (2) When working at a height of 2 m above the ground or higher, set up a working flooring. If that is difficult, implement measures such as setting up a protective net and wearing a safety belt.
- (3) In places that are at least 500 mm off the ground or higher which have a risk of falling hazards (e.g. the edges of walkways and working platforms, openings), set up a guard-rail.
- (4) If setting up a guard-rail is difficult, or if there is a need to remove it, implement hazard-preventative measures such as setting up a protective net or having workers wear safety belts.
- (5) Do not allow workers to perform tasks in locations 2 m off the ground or higher if any danger is anticipated due to bad weather such as strong winds (with wind speed of 10 m/s or higher), heavy rain, and heavy snow.
- (6) When working at a height of 2 m above the ground or higher, make sure that there is adequate lighting at all times.
- (7) Set up an working platform so that the work position height is between 500 mm and 1,700 mm above the flooring/ground.
- (8) Make sure that the clearance above the working platform is at least 2,100 mm above the floor/ground.

Continued on next page

Relevant
regulations

ISO14122-2:2016

Safety of machinery -- Permanent means
of access to machinery -- Part 2: Working
platforms and walkways

4. Prevention of Falling Hazards

4.3 Stairs and Guard-Rail (Permanent means of access to machinery)

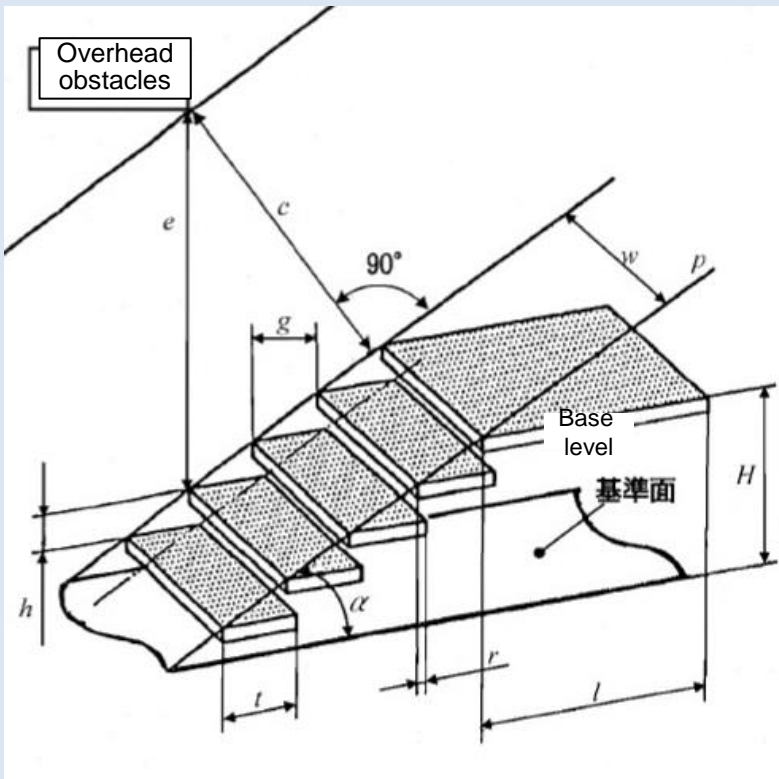
- (1) Guard-Rails are placed along stairs, working platforms, or walkways and are designed to prevent unexpected falls and workers going near dangerous areas.
- (2) For information on what to do when there is a need to keep a distance from the source of the hazard, refer to the section on Guards.
- (3) For stair dimensions, comply with the accompanying figure.
- (4) For the guard-rail dimensions, follow the accompanying figure.
- (5) Stairs must have handrails. Place the handrails on both sides of stairs when the stair width is at 1,200 mm or wider.
- (6) Place guard-rails along those stairs with a height of 500 mm or higher.
- (7) Dimensions for the handrails and guard-rails for the stairs must follow the accompanying figure.
- (8) The handrails for the guard fences must be yellow or have yellow and black stripes.

Moreover, the yellow paint must be 2.5Y8/14 in the Munsell color system.

Relevant regulations	ISO14122-1:2016	Safety of machinery -- Permanent means of access to machinery -- Part 1: Choice of fixed means and general requirements of access
	ISO14122-3:2016	Safety of machinery -- Permanent means of access to machinery -- Part 3: Stairs, stepladders and guard-rails

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Accompanying illustrations

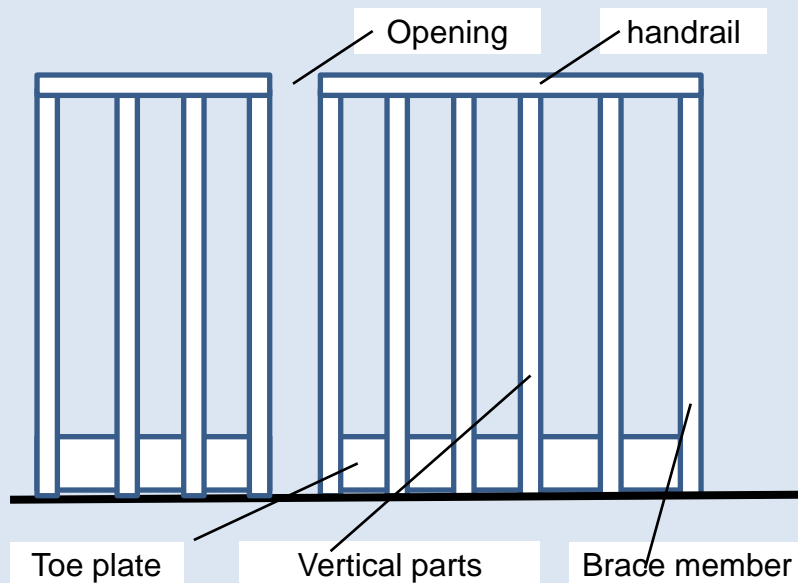


Stair Dimensions

	Dimension name	Standard [Units: mm]
α	Angle of pitch	Set at recommended angle of 30° to 38°.
H	Climbing height	Maximum: 4,000 (ideal height: 3,000 or less); in case more than 4,000, must have a landing area.
w	Stair width	600 or longer (ideal width: 800; width must be 1,000 if there are multiple workers or if used at the same time)
l	Length of landing area	Must be 800 or longer, or longer than the stair width.
c	Clearance	Must be 1,900 or more.
e	Overhead clearance	Must be 2,300 or more.
g	Horizontal travel distance (going)	Must satisfy the following: $600 \leq g + 2h \leq 660$ Top step must be the same height as the landing.
h	Rise height	Rise height must be uniform. However, the bottom step can be reduced by 15%.
r	Overlap	Must be at least 10.

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Accompanying figure

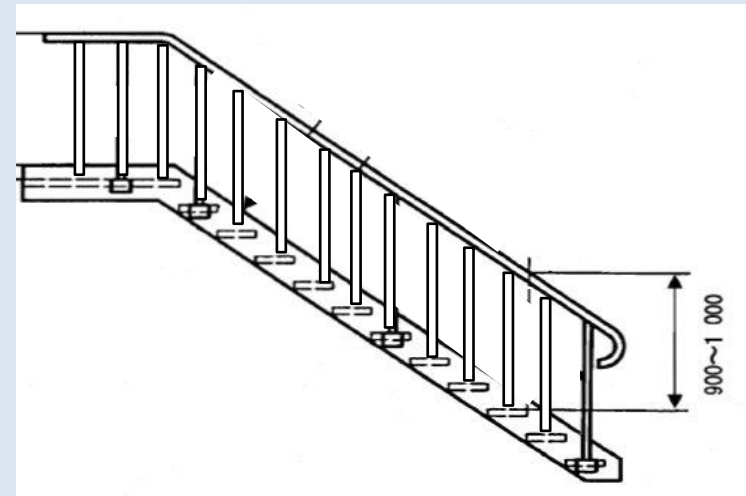


Guard-Rail Dimensions

- (1) Height: at least 1,100 mm
- (2) Space between vertical parts: 180 mm or less
- (3) Toe plate width: at least 100 mm
- (4) Space between toe plate and floor:
Maximum of 10 mm
- (5) Width of any openings between guard-rails must be 75 to 120 mm.
- (6) The knee rails type (stipulated in ISO/JIS) must not be used. However, this is permitted if it is not possible to step on the knee rails and if the spaces between the cross pieces are small enough.

Dimensions for the Handrails and Guard-Rails Set up Alongside Stairs

- (1) Height: 900 to 1,000 mm
- (2) Space between vertical parts : Maximum of 180 mm
- (3) The knee rails type (stipulated in ISO/JIS) must not be used. However, this is permitted if it is not possible to step on the knee rails and if the spaces between the cross pieces are small enough.



4. Prevention of Falling Hazards

4.4 Fixed Ladders (Permanent means of access to machinery)

- (1) Be sure to wear a helmet when going up or down a ladder in any location 2 m above the ground or higher.
- (2) The rungs of the ladder must be equally spaced and there must be a sufficient amount of space between the rungs and the wall.
- (3) The top of the ladder must be capable of extending at least 600 mm. However, if there is a need to connect the ladder to a guard fence, the ladder must protrude at least 1,100 mm.
- (4) As for the ladder height of ladders, comply with the following:
The climb height must no higher than 10 m if there is no rest platform and no higher than 6 m if there is a rest platform.
- (5) If the ladder height of the ladder exceeds 3 m, set up a fall protection (such as a safety cage).
- (6) The lower end of the fall protection (safety cage) must be 2.2 m to 3 m from the starting point (ground).
- (7) Place a door at the opening of the guard –rails of arrival level, The door must open easily, not open outwards, and close automatically (through the use of a spring or similar instrument).
- (8) The brace member of the ladder and the handrail for the guard-rails (located at the arrival point) must be joined together.
- (9) The distance between the brace members must be 400 mm to 600 mm and the distances between the cross pieces must be equal at 225 mm to 300 mm.
- (10) The top rung must be the same height as the walking surface at the arrival level. If the distance between the top rung is greater than 75 mm, extend the floor area from the arrival level side.
- (11) Only one worker may use the ladder at a time.
- (12) Do not raise or lower the ladder while having things in hand.

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Relevant regulations	ISO14122-4:2016	Safety of machinery -- Permanent means of access to machinery -- Part 4: Fixed ladders
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4. Prevention of Falling Hazards

4.5 Ramps (Permanent means of access to machinery)

- (1) Install the ramps with an angle of 10 degrees or less, which is the recommended angle of inclination.
- (2) When using a handcart, the angle of inclination must be 3 degrees or less, and 7 degrees or less when using a forklift.
- (3) Implement slip resistant on the surface if necessary.

Relevant regulations	ISO14122-1 : 2016	Safety of machinery -- Permanent means of access to machinery -- Part 1: Choice of fixed means and general requirements of access
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4. Prevention of Falling Hazards

4.6 Portable Ladders

- (1) Be sure to wear a helmet when going up and down a ladder with a height of 2 m or higher.
- (2) The ladder must be sturdy and may not have any significant damage or corrosion.
- (3) The width must be at least 300 mm.
- (4) Implement ladder displacement measures such as installing slip prevention devices, having another worker hold the ladder, and clamping the upper part of the ladder to a structure.
- (5) The distance between the rungs must be equal (between 180 mm and 350 mm).
- (6) The ladder must be set up at an angle of 75 degrees, and when climbing up to an upper floor, the top edge of the ladder must extend at least 600 mm higher than the upper floor.
- (7) Do not lean out from the ladder.
- (8) Do not push or pull on the wall or objects forcefully from the ladder.
- (9) Do not climb up and down the ladder while carrying objects that will cause you to lose your balance.
- (10) Do not use the ladder in slippery areas.

Continued on next page

Accompanying figure

How to Use Ladders Safely

Safe Use



- ☒ Please be extra careful when climbing ladders, as they tend to topple from side to side.
- ☒ When leaning the ladder against a roof, the best point for the ladder to touch the building is the 2nd or 3rd rung from the top.
- ☒ Lean the ladder against the structure at an angle of roughly 75 degrees. An adult must act as a spotter and hold the ladder.
- ☒ When stepping off the ladder onto the roof, or vice versa, the ladder will not be stable. The spotter must hold the ladder firmly to ensure that it is stable.

× Dangerous use



Do not lean out from the ladder.



Do not climb up and down the ladder while carrying objects that will cause you to lose your balance.



Be aware of the angle when leaning the ladder against a building or object.



Do not push or pull on the wall or objects forcefully from the ladder.



Do not use ladders in slippery areas.

(Source: "How to Use Ladders Safely" Hasegawa Kogyo Co., Ltd.)

Continued on next page

4. Prevention of Falling Hazards

4.7 Stepladders

- (1) The stepladder must be sturdy and free of significant damage or corrosion.
- (2) The angle between the legs and a level surface must be 75 degrees or less.
When using a folding stepladder, use metal fittings to ensure that the proper angle is maintained between the legs and the level surface.
- (3) The tread surface must have an area that is large enough to handle the task safely.
- (4) The distance between the rungs must be between 180 mm and 350 mm and the distances must be equal.
- (5) Do not sit or stand on the top step.
- (6) Do not straddle the stepladder.
- (7) Do not lean out from the stepladder.
- (8) Do not work while looking up.
- (9) Do not use the rear side of the ladder.
- (10) Make sure that the spreader has been securely fastened.

Accompanying figure

How to Use a Stepladder Safely

Safe Use



✗ Dangerous use



At Fujikura,
extending the
ladder is prohibited.



Do not stand on
the top step.



Do not straddle
the stepladder.



Do not sit on
the top step.



Do not lean out
from the
stepladder.

☒ Please be extra careful when climbing ladders, as they tend to topple from side to side.

☒ Make sure that the spreader has been securely fastened.

☒ When working from the stepladder, stand on the 3rd rung (including the top step) from the top or lower (2nd rung for ladders 210 cm in length or shorter), and lean your body on the top step and rung. Make sure that the ladder is stable while you work.



Do not work
while looking up.



Do not use the rear
side of the ladder.



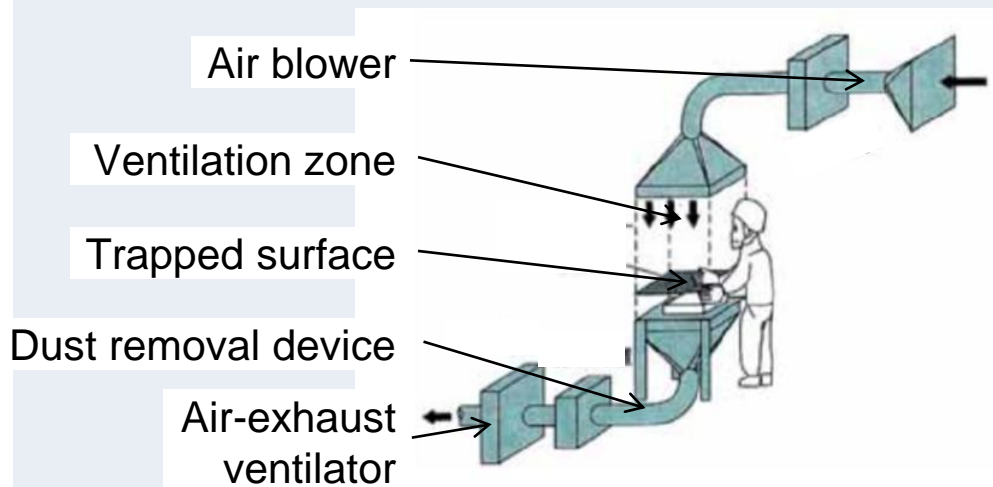
Do not use the ladder without
fastening the spreader
securely.

(Source: "How to Use Stepladders Safely" Hasegawa Kogyo Co., Ltd.)

5. Measures for Organic Solvents, Hazardous Chemical Substances, and Dust

- (1) Managing employee health and maintaining safe working conditions requires the following:
 - (a) Complying with the law to carry out appropriate work procedures as well as providing facilities and protective equipment
 - (b) Conducting health check-ups
 - (c) Conducting working environment measurements when required, and keeping and managing records appropriately.

Accompanying figure



[Examples of local ventilation equipment]
Open push-pull ventilation system

Consider the optimum configuration for the exhaust opening as well as where to install it according to the organic solvents, fumes, dust, type of exhaust and weight, in order to control the wind speed.

(Source: Compiled based on "Dust Control Measures in Arc Welding Tasks," Ministry of Health, Labour and Welfare)

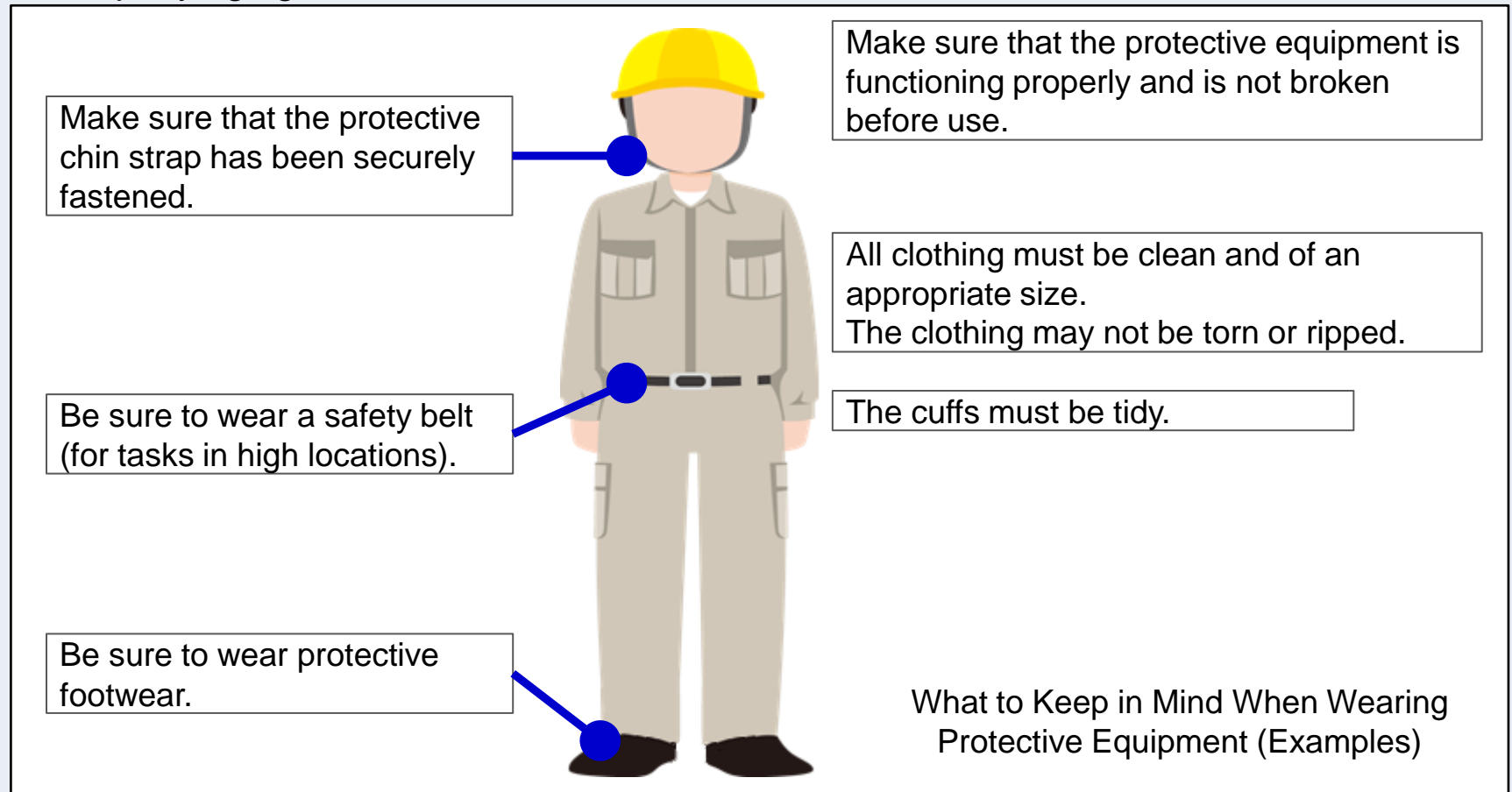
6. High Pressure Gas and Pressure Vessels

- (1) In order to prevent accidents caused by high pressure gas, it must be handled properly by complying with regulations pertaining to its manufacture, storage, conveyance, and other handling issues, as well as consumption.
 - (a) As for pressure vessels, the required applications must be submitted according to the specifications. In addition, performance inspections and vessel inspections must be conducted.
 - (b) If necessary, appoint certified operation chiefs, safety supervisors, safety engineering managers, or safety attendants.
 - (c) For Type 1 pressure vessels, a self inspection must be conducted monthly, and the records must be preserved for 3 years.
 - (d) Those who wish to renew their Type 1 pressure vessel inspection certificate must receive a performance inspection.
 - (e) Vessels that were unable to be renewed within the stipulated time frame must pass a reinspection and the certificate must be restamped.

7. Protective Equipment

- (1) Each factory must establish policies for wearing protective equipment according to the required tasks. These policies must cover the applicable tasks, where they are to be worn, and the type of equipment. Workers are to be instructed on how to put on the equipment. In addition, the equipment must be inspected before working.

Accompanying figure



7. Protective Equipment

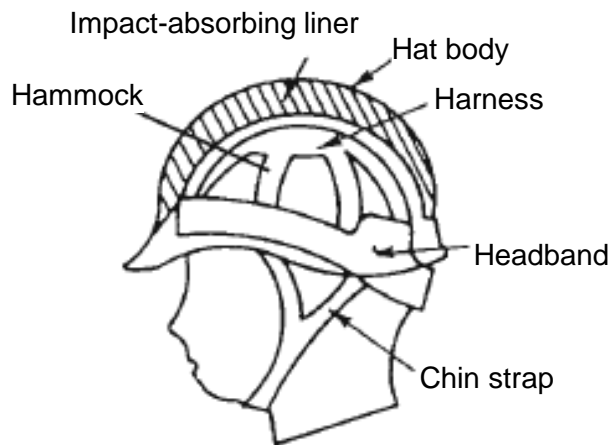
7.1 Protective Headwear (helmets)

- (1) Must have a “Roken” label (Occupational Safety and Health Regulations) and must be suitable for the task.

There are 3 types of helmets: those designed for flying and falling objects, those designed for protection when falling, and those designed for protection from electricity (electric shock prevention).

Accompanying figure

Names of Protective Headwear Parts



労 (平 24 ・ 04) 検
(1)TH-2483 (2)TH-2484 (3)TF-596
製造者名 ○○株式会社
製造年月 H26. 8月
(1)飛来・落下物用 (2)墜落時保護用 (3)電気用 7,000V以下
材質:ABS樹脂 品名:○○○○

Label: Roken
Equipment that meets the standards for protective headwear Note

Note: Notice No. 66, Department of Labor (1975)

Material

Category	Material
Hat body	Plastic or metal
Hammock and headband (interior)	Plastic, synthetic fiber, or cotton
Chin strap	Plastic, synthetic fiber, cotton, or leather
Impact-absorbing liner	Styrofoam, or material that is equally or more impact resistant.

7. Protective Equipment

7.2 Safety Belts

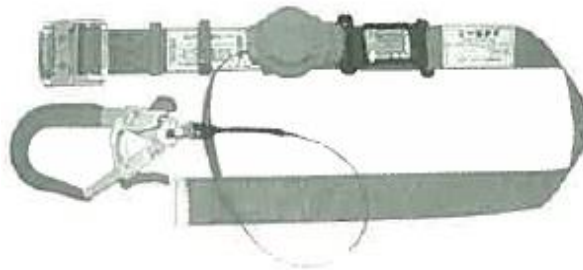
(1) In order to prevent falling accidents, the safety belt must meet safety belt standards and must be of a type that is suitable for the task.

Accompanying figure

- Names of Safety Belt Parts

Reference photograph:

Torso safety belt (designed for single-line suspension)
Used when attaching a single rope line to the belt



Grip (Rorip)



- How to Use a Safety Belt



Securely fasten the belt around your waist.



Attach the hook to a location higher than waist-height.

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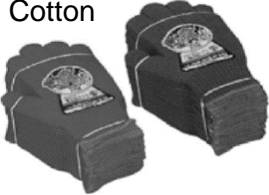

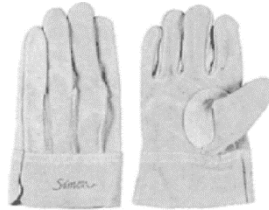






(Source: Safety Regulations Digest 6th Edition, Rodo Press)

7. Protective Equipment

7.3 Protective Gloves

(1) Gloves must be appropriate for the task.

Accompanying figure

General and heavy work	Tasks that involve handling oils, organic solvents, and cement	Chipping work	Tasks that involve handling blade tools	Welding, firearms, electrical work	Tasks that involve handling rotating tools
<p>Cotton</p>   <p>Leather</p> 	<p>Synthetic resin, rubber</p> 	<p>Vibration absorption</p>  <p>Designed to prevent vibration disorders (Impairs blood circulation) Labor Standards Bureau Notification No. 710</p>	<p>Preventing cut wounds</p> 	<p>Leather</p>  <p>For electrical work</p> 	 <p>Gloves must not be used for tasks that involve the use of rotating blade tools (drill presses, draw machines, etc.) Article 111, Ordinance on Industrial Safety and Hygiene</p>

7. Protective Equipment

7.4 Safety Glasses (eye protective equipment)

(1) Safety glasses must be suitable for the task.

Accompanying figure

Eye Protective Equipment	Environment and Conditions for Use
Safety Glasses	Tasks and places that produce or have the potential to produce floating dust or chemical droplets, or cause objects to fly about.
Light shielding Safety Glasses	Places or tasks that produce harmful rays that harm the eyes such as ultraviolet radiation, powerful visible light, and infrared radiation.
Laser Safety Glasses	Places that diffuse and reflect laser radiation or tasks and places that have the potential to be exposed to laser radiation directly. Note: Make sure that the applicable wavelength has the appropriate optical density.

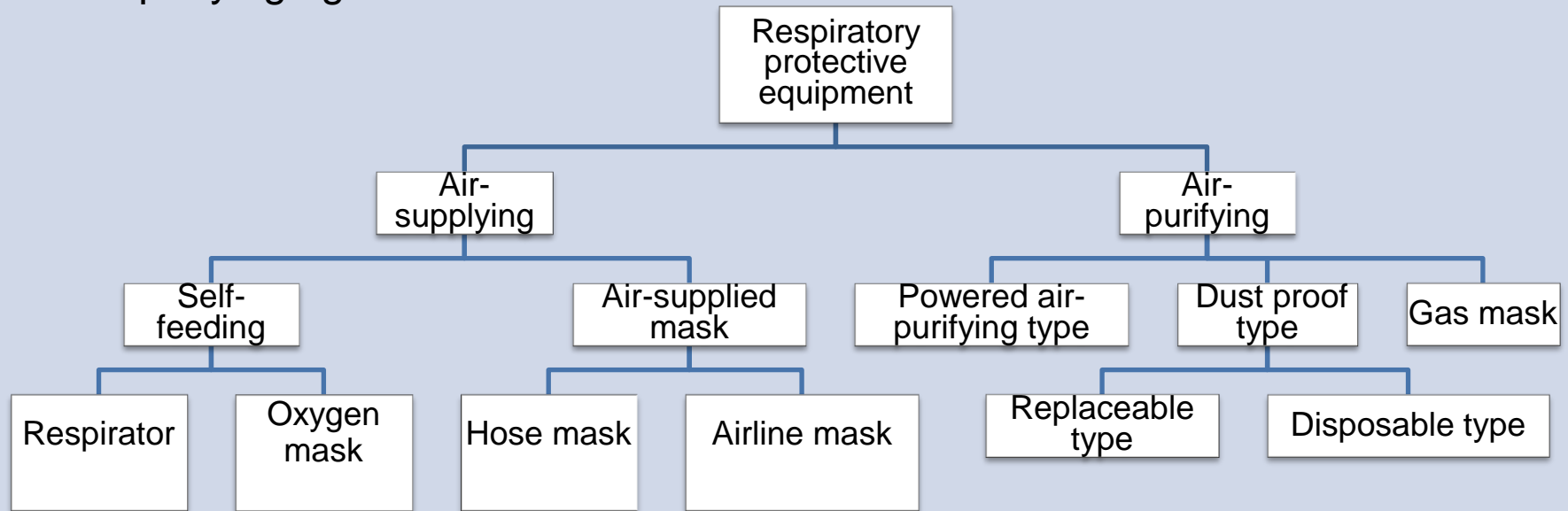
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7. Protective Equipment

7.5 Masks

(1) For tasks required by law, masks must be used that meet the legal requirements.

Accompanying figure



7. Protective Equipment

7.6 Protective Footwear

- (1) Protective Footwear refers to slip resistant shoes that protect the toes with reinforced toe caps. Make sure to use ones that meet JIS standards.
- (2) Make sure to use antistatic shoes if there is any risk of a static accident.

Accompanying figure

● Basic types of general safety shoes



● Example types of antistatic shoes



Task Category	Protective footwear (Code)
Heavy work (Impact resistant) (Pressure resistant)	Type H (100J) (15 kN)
Ordinary work (Impact resistant) (Pressure resistant)	Type S (70J) (10 kN)
Light work (Impact resistant) (Pressure resistant)	Type L (30J) (4.5 kN)

8. Safety Passageways

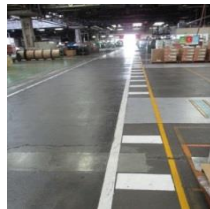
8.1 Passageways and Work Areas

- (1) Clearly mark safety routes and work areas with white lines.
- (2) Be sure to clearly mark stop lines, pedestrian stop lines and work areas.

Accompanying figure



Passageway markings



Pedestrian
passageway



Product storage area markings

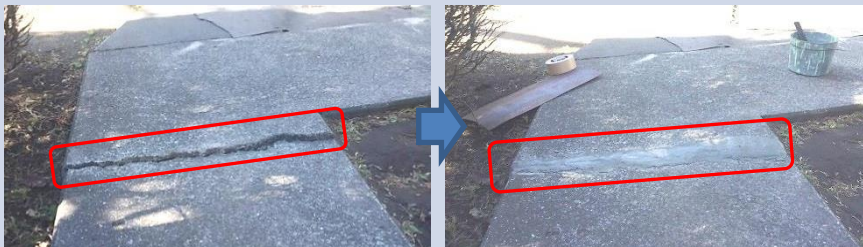
Object	What the Signs and Displays Mean
Road signs	Use signs and displays based on the Road Traffic Act if required.
Indoor and outdoor passageways	Draw white lines 50 to 150 mm in width. Use paint or plastic adhesive tape.
Storage areas	Draw yellow lines around storage areas 50 to 100 mm in width. Use paint or plastic adhesive tape.
Areas where storage is not permitted	Draw white lines around the areas 50 to 100 mm in width. Mark the inside with white (diagonal) striped lines.

8. Safety Passageways

8.2 Floors

(1) Keep the floors in a safe condition in order to eliminate the risk of tripping and slipping.

Accompanying figure



Example of floor unevenness maintenance



Example of a puddle



Example of passageway renovation



Example of an unnecessary anchor bolt

9. Storage Racks

9.1 Tool Storage Areas

- (1) Designate storage areas for tools used for certain tasks, organize and arrange them to be easily picked, and store them.
 - (a) When storing tools, be sure not to expose any sharp blade parts.
 - (b) Arrange the tools so that the side of the handle is in front so that the tools are easy to retrieve and store, and create a storage system that prevents the tools falling out easily. (Arrange special work stands)
- (2) Implement measures to keep shelves from tipping over or falling.

Accompanying figure



Example of tool organization



Example of fall prevention measures



Arrangement of a special work stand

9. Storage Shelves

9.2 Materials and Supplies

- (1) For the shelves, implement tip-resistant measures as well as measures to prevent the stored items from flying about.
- (2) Set up stoppage devices to keep drums from rolling and ensure there is an adequate amount of space between the rolls so that the workers do not crush their hands.
- (3) Workers may not carry out any tasks on the storage shelves while getting on said shelves.

Accompanying figure



Example of drum placement and stoppage devices

10. Conveyance Tasks

10.1 Heavy Load Conveyance (forklifts, reach forklifts)

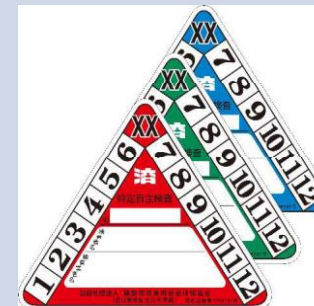
- (1) Only those who have completed the appropriate skills training courses (1 ton or more) and special education courses (less than 1 ton) may handle the relevant machinery.
- (2) Conduct periodic inspections: must conduct annual inspections (special self inspections), monthly inspections (periodic self inspections) as well as inspections before the start of a project.
- (3) Draw up a working plan for operation.

Accompanying figure

Example of a special self inspection



Inspection Certificate for
work site



Certificate for
Inspection Agencies

10. Conveyance Tasks

10.3 Manual Conveyance

- (1) Loads handled by men using manual labor alone should approximately be around the figures listed below
 - Intermittent tasks: less than 30 kg
 - Continuous tasks: less than 20 kg
 - (Loads handled by women shall be 60% of the loads for men.)
- (2) If the load exceeds the above weights, the task must be handled by 2 people or more.

11. Lifting and Lowering Devices (elevators, lifts)

- (1) In order to ensure safety, equipment that meets technical standards which comply with regulations must be adopted and maintained, appropriately and thoroughly.
- (2) In order to ensure safety, annual periodic inspections (Building Standards Act), performance inspections, or monthly self inspections must be conducted. In addition, records must be kept for 3 years.

Accompanying figure



Periodic Inspection
Completion Certificate



Performance Inspection
Completion Certificate

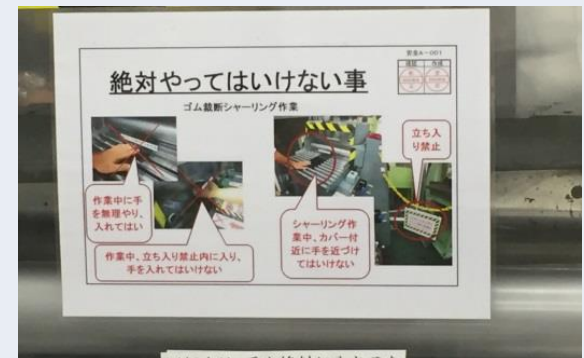
12.Others (Ensuring the dissemination of the information of health and safety activity)

- (1) Post the content of our corporate health and safety policies in appropriate locations and in an appropriate size in order to disseminate our policies to company members.
- (2) Notices refer to the following:
 - (a) The “Fujikura Group Health and Safety Basic Policy” and “Message from the President of Fujikura”
 - (b) The “Health and Safety Activities Annual Plan” and “Safety Slogans”
 - (c) “What Corporate Members Should Never Do,” “Rules and Etiquette,” and other necessary matters

Accompanying figure



Sample bulletin board



Display in an appropriate location