

**DRAFT AMENDMENT  
FOR PUBLIC COMMENT**

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Draft Amendment No. 1 to

Singapore Standard SS 578:2019 – Code of practice for the use and maintenance of portable fire extinguishers

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**Code of practice for the use and maintenance of portable fire extinguishers**

**AMENDMENT NO. 1**

Month / Year

**1. Page 15, new clause 8.2.8.1 and 8.2.8.2**

*Insert the following new clause number 8.2.8.1, and new clause 8.2.8.2:*

**8.2.8 Special precautions**

**8.2.8.1 For Class C and D fires**

It is not desirable to encourage untrained personnel to tackle Class C and D fires. However, where there are competent private brigades or personnel competent in the use of gas appliances or handling combustible metals such as magnesium, special consideration should be given to the provision of extinguishers.

In the event of a gas leak becoming ignited, it should be extinguished only by closing the valve or plugging the leak. If, however, it is unsafe to approach the container, no attempt should be made to extinguish the flame in any other way.

Specially formulated powder extinguishers are available for fires involving combustible metals but special application systems and techniques may be needed. There are no quantitative parameters for rating Class D fires. The type of combustible metal and the area, depth and other characteristics of the fire that may be controlled and extinguished by particular extinguishers should be established from the manufacturer's literature.

The siting of extinguishers should be selected with the aid of the manufacturer's installation instructions. Fires involving metals can be complicated by the presence of flammable liquids such as cutting lubricants or by the metal itself melting. Several of the types of extinguishers mentioned in this Code may cause dangerous conditions when used on Class D fires.

Advice on these matters may be obtained from the relevant authorities, fire consultants or fire insurers and fire engineering companies.

**8.2.8.2 For photovoltaic (PV) solar panel fires**

It is not desirable to encourage untrained personnel to tackle fires involving solar panels. The solar panels must be de-energised during firefighting operations as it poses an electrical hazard to the fire fighter. The generation of electricity by the solar panels cannot be shut down so long as it is exposed to available day light or sunlight.

Such fires should be tackled by trained personnel competent in the use of suitable isolating/ coating mediums<sup>1</sup> to cover the solar panels to prevent day light or sunlight from reaching the solar panels thus shutting down the generation of electricity, making it safe for the firefighting operations. To ensure that the operation of solar panels are de-energised safely and efficiently when fires are involved for the safety of firefighters, such isolating/ coating mediums shall be provided in accordance to Code of Practice for Fire Precaution in Buildings and placed within the vicinity<sup>2</sup> of solar panel installations.

In general, the application of isolating/ coating medium should be performed sufficiently to de-energise the solar panels, in accordance with the recommended formula/methodology by the Original Equipment Manufacturer (OEM) or supplier. The fire can then be extinguished by the use of appropriate fire extinguishers (see 8.2.11).

NOTES –

- 1) Isolating/coating medium are typically non-flammable, fire-retardant, non-toxic and non-polluting. When applied, an isolating/coating layer will de-energise the solar panels and stop electrical generation from the coated panels.
- 2) Isolating/coating medium shall be provided at the entrances to the roof (e.g., exit staircases or access openings) or near to the areas where solar panel installations are with proper signages (e.g. near to buildings on land such as maintenance/control buildings, boat ramps for solar PV installed on water). At minimum, each solar PV array should be provided with sufficient isolating/coating medium to de-energise its affected string based on the recommended quantity (e.g., minimum number of canisters needed based on formula/methodology) by the OEM. By definition, a solar PV string comprises a set of solar panels installed in series.

**2. Page 25, 10.2.1 Frequency of inspection**

*Replace* 10.2.1 as follows:

The extinguishers shall be inspected monthly, manually or by electronic means, by the building owner or occupant or at more frequent intervals when any of the following circumstances exist:

- (i) High frequency of fires in the past;
- (ii) Severe hazards;
- (iii) Susceptibility to tampering, vandalism, or malicious mischief;
- (iv) Possibility or past history of theft of extinguishers;
- (v) Locations that make extinguishers susceptible to mechanical injury;
- (vi) Possibility of visible or physical obstructions;
- (vii) Exposure to abnormal temperatures or corrosive atmospheres;
- (viii) Characteristics of extinguishers such as susceptibility to leakage.

**3. Page 25, new clause 10.2.2.1 Inspection by means of electronic monitoring**

*Insert* new clause 10.2.2.1:

**10.2.2.1 Inspection by means of electronic monitoring**

- (a) Electronic monitoring can be considered to meet the requirements of the monthly physical inspection of the fire extinguisher.
- (b) The fire extinguisher electronic monitoring device should indicate all the inspection requirements stated in Clause 10.2.2 (a) to (g).
- (c) Where the monitoring device is not able to monitor some of the inspection procedures listed in 10.2.2 (a) to (g), the owner/occupier shall ensure that the shortfall in the inspection procedures as stated in 10.2.2 and at frequencies as stated in 10.2.1, are carried out at the annual maintenance of the fire extinguishers, provided the premises' inspection records of previous years indicates that:
  - (i) there is no evidence of vandalism, damage or theft of fire extinguishers.

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- (ii) the environment within the premises is not hazardous and there has been no evidence of corrosion on the installed fire extinguishers.
- (d) The electronic inspection shall be monitored at an indicator panel in a 24-hour manned location.
- (e) The connection to the electronic monitoring device shall be continuously supervised for integrity.
- (f) The power source for the electronic monitoring device shall be supervised for continuity of power.
- (g) The monitoring device and its indicator panel shall be tested for the purpose by a recognised testing laboratory.
- (h) The components of the monitoring device/system shall be tested and maintained in accordance with the manufacturer's maintenance manual.

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