



Fire safety of a solid-fuel heating station

Safety regulations S925, effective as of 1 April 2020

1 Purpose

These safety regulations contain instructions on the fire safety of a solid-fuel heating station in the over 30 kW and under 1 MW range.

The planning, acquisition and installation of a solid-fuel heating station must comply with rescue and construction legislation as well as building regulations.

2 Obligation to comply with safety regulations

These safety regulations are part of the insurance contract. Both the policyholder and the insured must comply with the safety regulations and its provisions.

If the safety regulations are not complied with, the compensation may be reduced or completely denied in accordance with the Insurance Contracts Act. The policyholder must ensure that those responsible for work performance are familiar with the contents of these safety regulations.

3 Concepts

Heat distribution centre

An entity consisting of a boiler room and fuel storage and the equipment placed in these facilities.

Solid fuel

Biomass, such as wood chips, pellets, peat or grain, meant to be used as fuel.

Fuel storage

A space, tank or silo for storing fuel.

Fire extinguishing system

Set of equipment that automatically detects the spreading of a fire in the fuel supply system and puts it out by spraying extinguishing agent on the fuel supply system. In pellet feeders, it is possible to use a dry powder extinguishing system instead of a water extinguishing system.

Rotary feeder

A device in the fuel supply system that cuts off the direct connection between the boiler and fuel storage even while the fuel is being supplied.

Falling chute

Part of the 2-screw fuel supply system, in which the fuel falls from the discharge screw onto the stoker screw.

Tipping chute

Part of the pellet boiler fuel feeder device, which melts in case of a back fire and prevents the back fire from spreading along the feeder device.

4 Structures and placement of a solid-fuel heating station

Structural fire safety must be maintained through regular inspections and maintenance.

In structural fire safety, particular attention needs to be paid to the lead-throughs of the structural fire compartmentation elements to prevent the fire from spreading from one fire compartment to the next.

The necessary pipes, chases, channels, cables and flues may be led through the separating element (wall, ceiling, floor) provided that it does not significantly impair the fire compartmentation of the separating element.

A door in the separating element must have a fire resistance period that is at least half as long as the required resistance period of the separating element. A door in the exterior wall does not need to be fire-separating.

5 Safety systems

Automatic fuel feeder equipment must always be protected to prevent the spreading of a back fire. The protection needs to prevent a back fire from spreading both in solid fuel and as a gas fire. Solid-fuel feeder devices need to have at least two separate, independent safety systems. The safety systems must also be able to work during a power cut.

Fire extinguishing system

One safety system needs to be a fire extinguishing system that is connected to the feeder device.

Rotary feeder

The second safety system needs to be a rotary feeder, if the fuel is dust producing or a dry, finely grained and light substance (saw dust, shavings, peat etc.).

When using a single screw conveyor (combined discharge and stoker screw), the second safety system in addition to the fire extinguishing system needs to be either an approved, lidded fuel tank or an approved rotary feeder.

Fire alarm system

It is recommended that the solid-fuel heat distribution centre and its facilities be equipped with appropriate fire alarm systems and fire detectors, which will transmit the alarm to a continuously monitored space or the emergency response centre.

The temperature of the outer surface of a flue inside the building must not exceed +80 °C. The lead-through of the flue must be fire insulated from flammable building materials. The height and fit of the chimney must follow the boiler manufacturer's instructions and comply with fire and construction legislation.

The solid-fuel boiler, flue system and related equipment must be swept and inspected once a year.

6 Electrical appliances

Electrical equipment need to be appropriate for their operating environment. If the surface of the electrical appliance collects dust, the IP class of the electrical appliance needs to be chosen accordingly. In continuous use, the surface temperature of the electrical appliance needs to stay low enough as not to ignite the fuel or dust that may accumulate on the surface of the appliance.

In a space where the handling of fuel generates dust that together with the air may create an explosive dust-air mixture, the electrical and mechanical equipment need to be appropriate for potentially explosive atmospheres (ATEX).

7 First-aid extinguishing equipment

There needs to be at least one hand extinguisher of the type 43 A 233 BC immediately inside or outside the exterior door of the heat distribution centre room. The extinguisher must be frost-resistant and function within the temperature range -30°C...+60°C.

Inside the heat distribution centre building, there should also be a hose reel or an easily usable water hose that is continuously connected to the water mains. The water hose needs to be long enough to reach the fuel storage.

8 Service and maintenance

A chimney sweeper needs to inspect and sweep the boiler and the flues at least once a year in accordance with the sweeping regulation and record the sweeping work in the boiler room log.

The equipment and machinery of the heating station must be kept operational and both maintained and checked appropriately. When it comes to the common areas of the building and to the arrangements that serve the entire building, this is the responsibility of the owner, keeper or operator. The holder of a dwelling is responsible for the spaces in their possession.

All equipment and containers used for the mechanical or manual handling of ashes or the storage of ashes need to be sealed and made of non-flammable material. The safety distance to flammable materials needs to be sufficient to prevent them from catching fire.

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Domicile: Helsinki, main line of business: non-life insurance companies

Regulatory authority: Financial Supervisory Authority, finanssivalvonta.fi/en

