



Safety and environmental protection

Flammable Storage Cabinets with enhanced fire performance for high risk areas



THE ADVANTAGES OF SAFETY STORAGE CABINETS WITH ENHANCED FIRE PERFORMANCE

The comparison of a double-wall steel cabinet with an EN Type 90 cabinet demonstrates impressive differences.



① Cabinet structure

EN TYPE 90 CABINET: Multiple layers of fire-proof calcium sulphate, encased in sheet steel.

STEEL CABINET: Two layers of sheet steel (18 gauge in most cases) with air in between.

② Fire test

EN TYPE 90 CABINET: The cabinet is fire tested for 90 minutes. Extended resistance against a temperature increase means more time for the personnel to evacuate

and for the fire fighters/rescue services to do their jobs safely.

STEEL CABINET: Cabinets are fire tested for only 10 minutes and have no formal fire rating.

③ Maximum permissible internal temperature increase

EN TYPE 90 CABINET: Max. 180°C (356 °F) during the entire duration of the fire test = 90 minutes.

STEEL CABINET: Max. 325 °F (approx. 163 °C) in the first 10 minutes of exposure to a fire.

④ Self-closing doors

EN TYPE 90 CABINET: Mandatory. If no door open arrest system is used the doors must close automatically from every position when released.

STEEL CABINET: Mandatory.

⑤ Self-latching doors

EN TYPE 90 CABINET: Mandatory. One-point latching sufficient. Calcium sulfate keeps structural integrity when heated.

STEEL CABINET: *Mandatory. Three-point latching required to hold the door in place when the metal starts bend in the fire.*

⑥ Door open arrest system

EN TYPE 90 CABINET: Optional. Built-in. Doors must close at approx. 122 °F maximum (50 °C).

STEEL CABINET: *Optional. To be inserted manually. Doors must close at 212 °F (100 °C) maximum.*

⑦ Bottom collecting sump

EN TYPE 90 CABINET: Mandatory. Capacity is relative to model size. It must be at least 10 % of the volume of all containers stored or a minimum of 110 % of the largest container. Whichever volume is greater. Sumps are removable for easy cleaning.

STEEL CABINET: *Mandatory. No capacities mentioned. Only minimum height specified, regardless of capacity. Higher risk of overflow. Sumps mostly built-in and cannot be easily cleaned.*

⑧ Perforated insert in the sump

EN TYPE 90 CABINET: Optional. Available for sumps and drawers. If sumps/drawers are used as a storage level, the stored containers may reduce the retention, which then could lead to an overflow when liquids are spilled. Perforated inserts keep the retention volume.

STEEL CABINET: *Not common.*

⑨ Fusible Links

EN TYPE 90 CABINET: Fusible links at door open arrest system, vent connections and drawers. A mechanical fusible link is a device consisting of two strips of metal soldered together with a fusible alloy that separates at a set temperature.

STEEL CABINET: *Fusible links only at door open arrest system (optional). Manual insertion by user.*

⑩ Insulation

EN TYPE 90 CABINET: Multiple layers of calcium sulfate dihydrate.

STEEL CABINET: *Air.*

⑪ Seals

EN TYPE 90 CABINET: All gaps and openings (including air channels for venting) are lined with intumescent materials. When exposed to high heat, these materials expand and seal the unit hermetically to avoid heat entering the cabinet.

STEEL CABINET: *None.*

⑫ Vent connections

EN TYPE 90 CABINET: Mandatory. Located on top of the unit - or at the rear (under counter units). Vent connections are self-closing in the event of a fire to prevent heat transfer.

STEEL CABINET: *Mandatory. Manual closing (bungs).*

⑬ Storage volume

EN TYPE 90 CABINET: Usable storage space for each shelf/drawer is stated instead of the total interior volume of the cabinet or the number of a certain type of safety can. Indicating the volume per shelf/drawer is a more practical approach especially for environments where different bottle and container sizes are used (e.g. laboratories).

STEEL CABINET: *In most cases the storage volume is stated in gallons based of the number of standard 5 gallon safety cans that can fit. Translating into other bottle and container sizes can be challenging.*

⑭ Third party testing

EN TYPE 90 CABINET: Mandatory. Only accredited testing labs can certify cabinets according to EN 14470-1.

STEEL CABINET: *Not mandatory. However, third party testing is quite common among manufacturers.*

⑮ Durability tests

EN TYPE 90 CABINET: Not mandatory. Manufacturers typically test according to EN 16122 (standard for non-domestic storage furniture). 40.000 wear-free opening and closing cycles are the minimum requirement for compliance. GS approval is another option, requiring at least 50.000 successful opening and closing cycles.

STEEL CABINET: *Not mandatory. Not common.*

Type 90 cabinets according to EN 14470-1 make it possible to further reduce the hazards beyond what would be provided by double walled steel cabinets and open up new design possibilities without compromising on fire safety.



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