



DESCRIPTION

The system consist of chilled and cold store modules that are built up to make complete, prefabricated units. Custom designed for each vessel and specially suited for installation onboard includes technical design, delivery of the prefabricated panels with all necessary accessories and supervision of installation. High quality of the chambers secures optimal thermal insulation and lower cooling capacity requirements. The cold stores are mainly built as complete module stores with four walls, ceiling and floor.

FEATURES AND BENEFITS

- polyurethane foam not affected by moisture and water condensation,
- ensure good thermal insulation in all panels, lower cooling capacity demand,
- design ensuring no thermal bridges,
- complying with class societies and flag authorities requirements,
- individual and flexible design,
- easy to install,
- no aging process,
- well documented,
- no maintenance,
- easy to wash - hygienic.

SYSTEM DESIGN

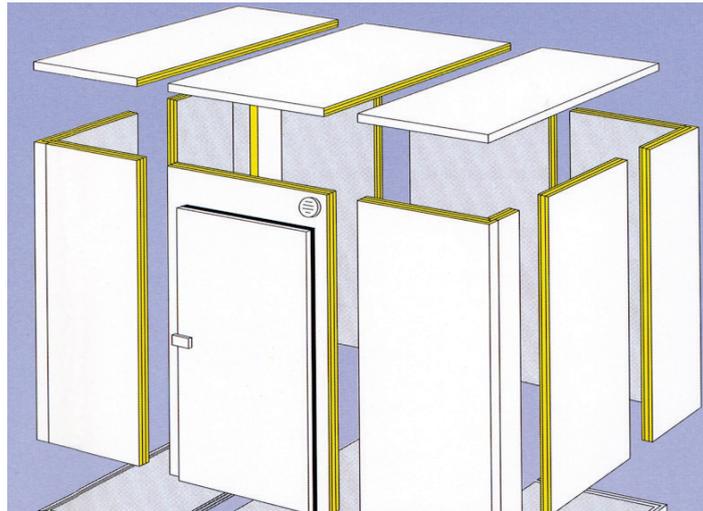
Panels are produced individually to fit exactly into the design, if required waterproof plywood of 12 mm is applied into the foam core to strengthen these places where heavy equipment is going to be installed (e.g. ceiling, where cooling units can be installed). Panel thickness of 80, 100mm is selected based on thermal conductivity factor k according to ISO-6946 and required temperatures in the room. 80mm is common for room with inside temperature above 0°C while cold rooms (up to -25°C) need 100mm in most cases.

The panels have got a core of polyurethane foam CFC- and HCFC-free. The panels have cladding of stainless steel inside and galvanized and lacquered steel outside and have concealed cam locks to lock panels together.

Cam locks closing only by quarter of revolution connect prefabricated panels together quickly and easily. This system is based on individual panel production, which means that cam locks can be located not only on sides of the panel but also on top and bottom end. This makes installation even easier because most of installation work can be done inside the room, with no need of big void space between panels and ships construction.

Doors are built the same way as panels, hinged on three hinges per door leaf. Doorframes are equipped with door heaters in freezing rooms. All doors, pre-mounted in wall panel, are equipped with locking device with inside safety release.

Pressure equalizing valve resists up to -40°C and it consists plastic materials pressed in cylindrical shape. It can be mounted both in vertical and horizontal position. They are suitable to refrigerating rooms of 2 up to 120m³. It is heated by 8W anti-mist electrical resistance at the tension of 220V.



PANELS DESIGN

The panels are designed for chilled and frozen stores. The panel sizes are designed to built provision stores of the different measures with the largest depth of 3150mm.

Wall panels are of sandwich design, built up by a core of CFC- and HCFC-free polyurethane foam with a cladding of steel sheet on both sides. The cladding inside the room is the stainless steel and outside the room galvanized and lacquered steel. Where shelves and cam locks are needed, there will be waterproof plywood conceal in the core of the panels in order to reinforce the filled into the mould where they expand and fasten to the cladding.

Ceiling panel is designed just the same way like wall panels. The fabrication of the panels starts by cutting and bending the steel sheet cladding into shape, the cladding are installed in a press creating a mould. Polyurethane is filled into the mould where it expands and fastens to the cladding.

Floor panel is of sandwich design, built up by a core of CFC- and HCFC-free polyurethane foam with a cladding of steel sheet on external surfaces and 12mm plywood on internal side of reinforce the panel. The floor insulation is reinforced further with an extra layer of 12mm plywood installed crosswise upon floor panels. The extra layer of plywood is fastened to floor panels with galvanized screws.

Doors are delivered installed in a wall panel. The door is of sandwich design, built up by a core of CFC- and HCFC-free polyurethane foam of DN 4102, part 512 A, B2 quality with cladding of steel sheets on both sides. The door's frame is built as a part of a wall panel. A heating cable is installed in the frame and the cable is connected to a junction box located in the frame.

TECHNICAL SPECIFICATION

Thermal conductivity factor k according to ISO-6946

Panel thickness [mm]	k [W/m ² K]
80	0.26
100	0.21

Outside materials

- **stainless steel** (AISI 304): thickness: 0.6mm; surface treatment: 2B
- **galvanised steel sheet, 275g/m²** (S280GD): thickness: 0.6mm; surface treatment: epoxy primed or polyester coated white; colour: white RAL 9002
- **plastisol** (200): thickness: 0.55mm; colour: white

Inside materials

- **polyurethane** (PUREX WG 2031 E B2; 890/SP/08 or 884/SP/08): density: approximately 42 kg/m; thickness: 80/100mm
- **plywood**: thickness: 2x12mm

DIMENSIONS

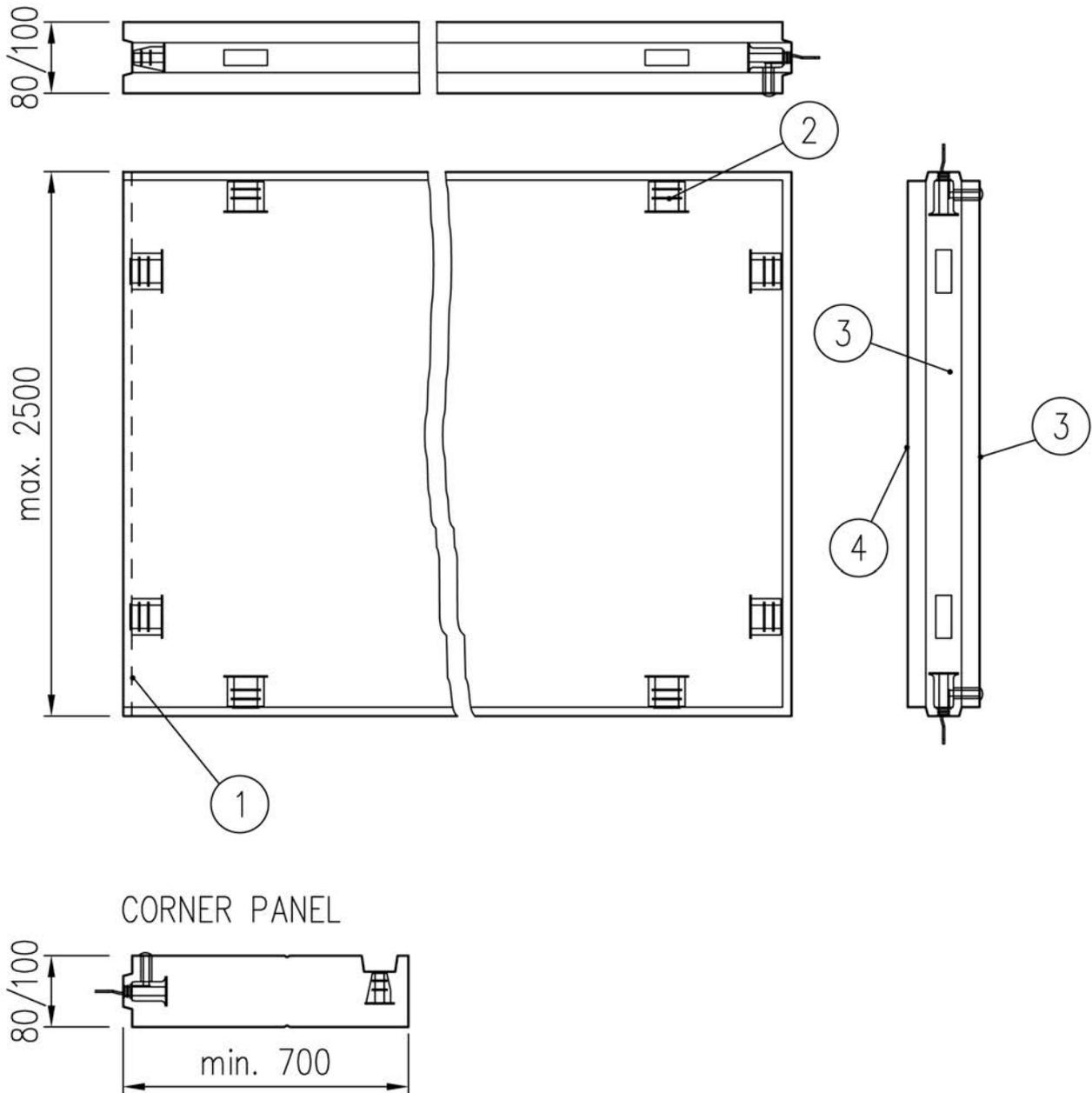
Description:

- 1 – plywood
- 2 – cam lock
- 3 – PU
- 4 – steel (SS/GS/SSP)
- 5 – ceramic tile
- 6 – grooved steel plate
- 7 – cement
- 8 – joint binder

Wall panel

Cladding material combinations: GS/SSP, GS/P200, SSP/SSP, P200/P200

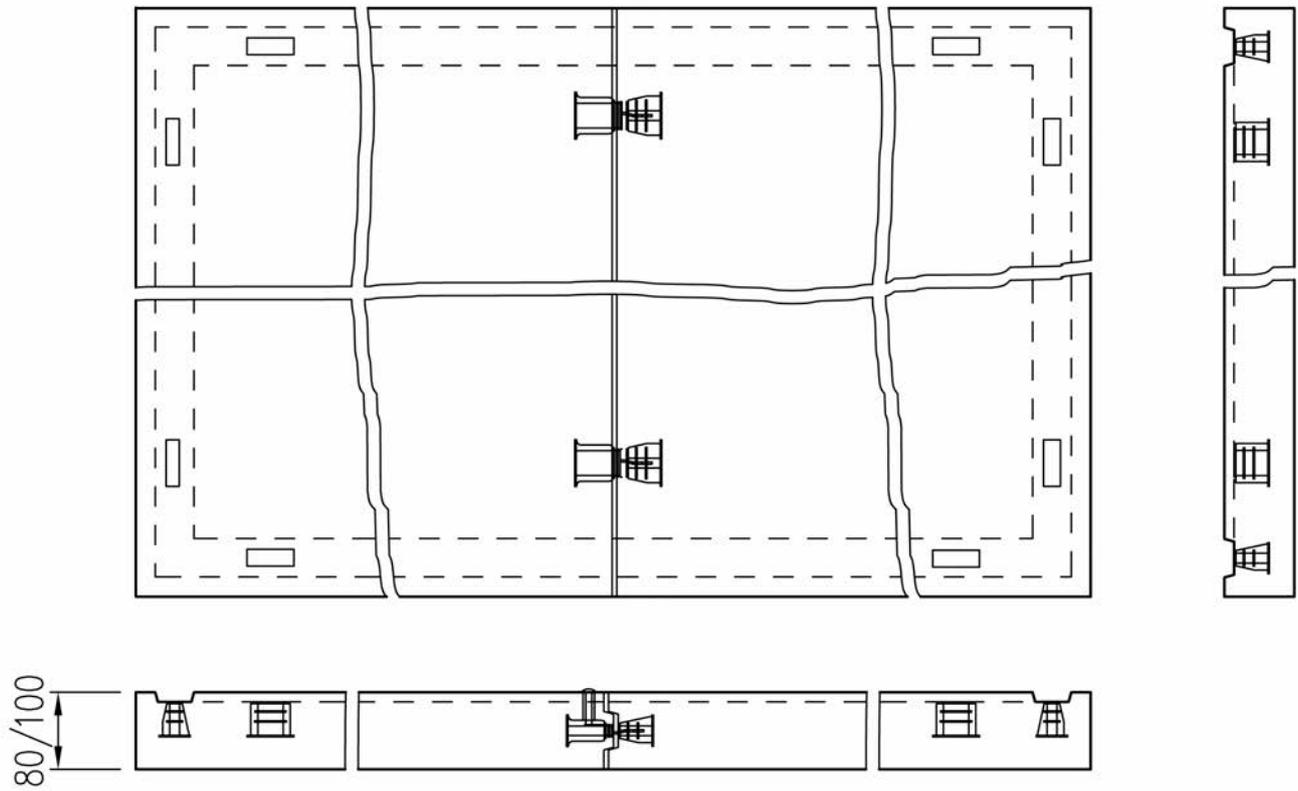
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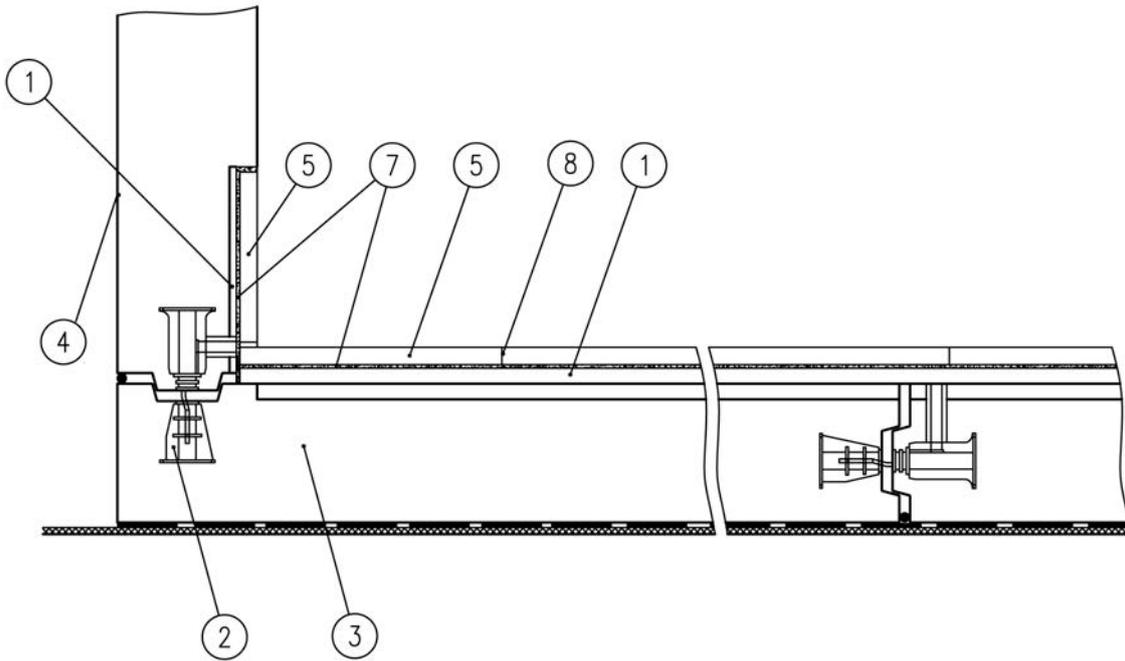
Floor panel

Final trim: ceramic tile (5) or grooved steel plate (6)

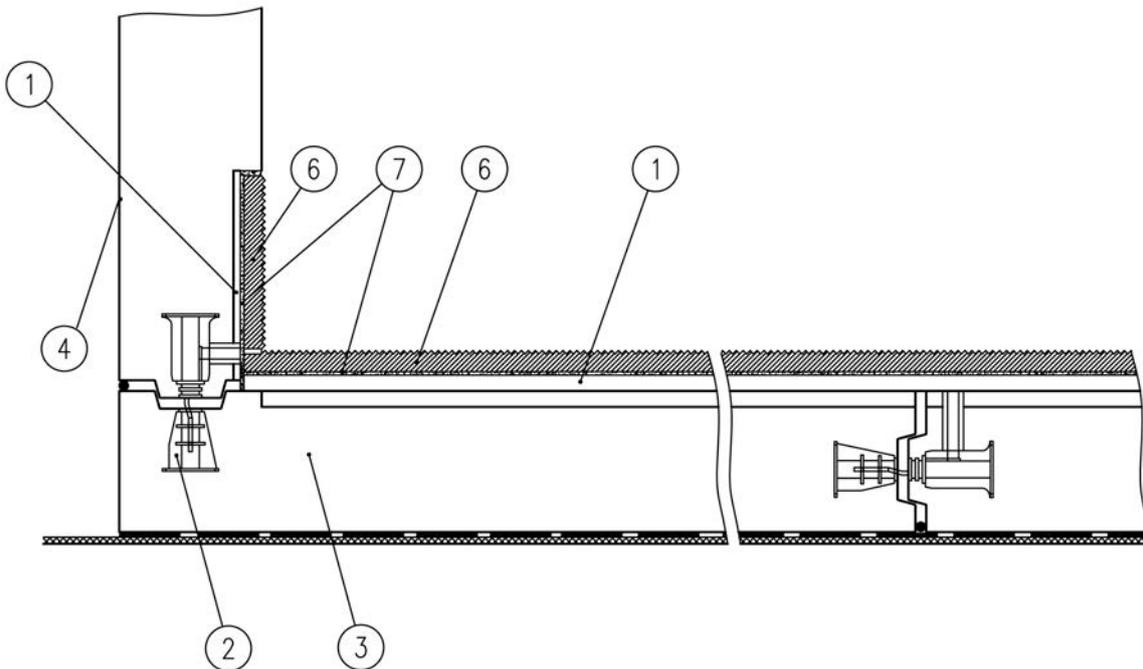
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Ceramic tile trim



Grooved steel plate trim

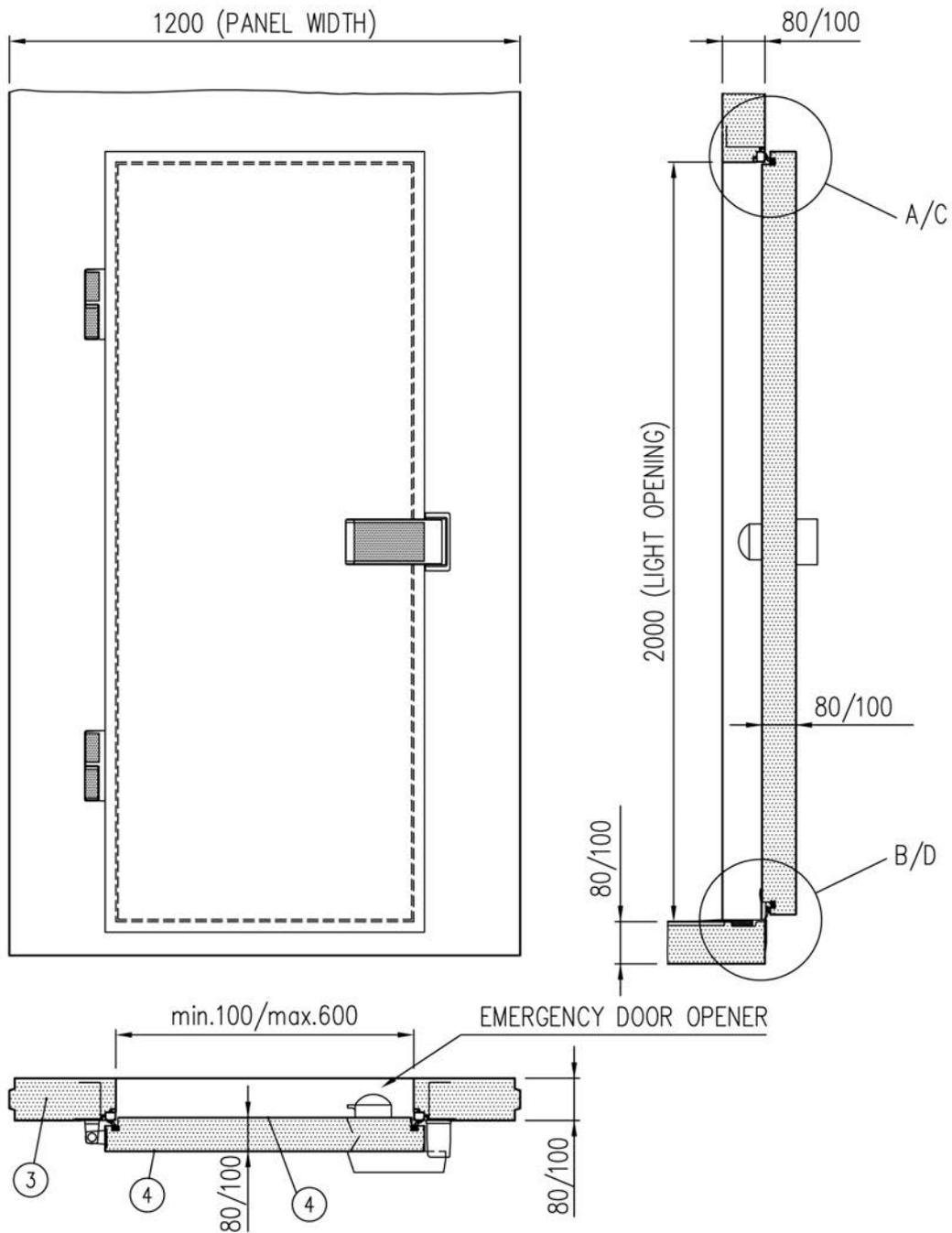


Door

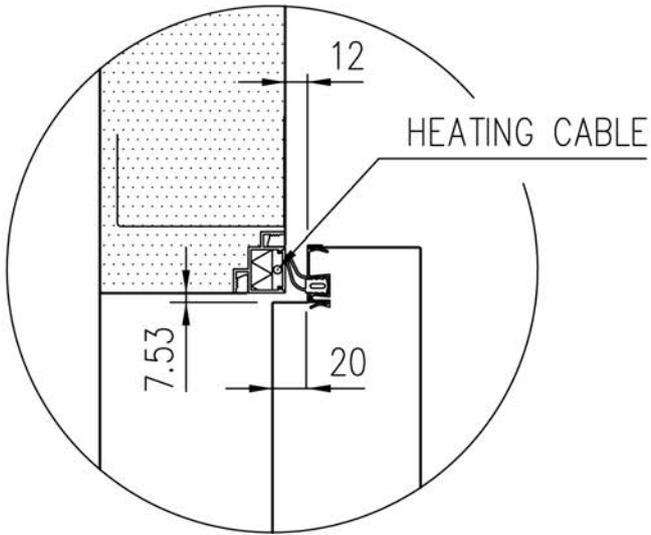
Cladding material: SSP, P200

Types: door reaching directly to the floor panel (D) or with sealing flap over floor panel (B)

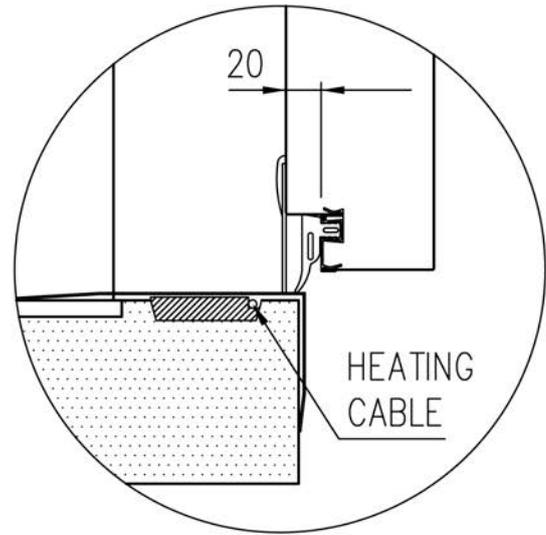
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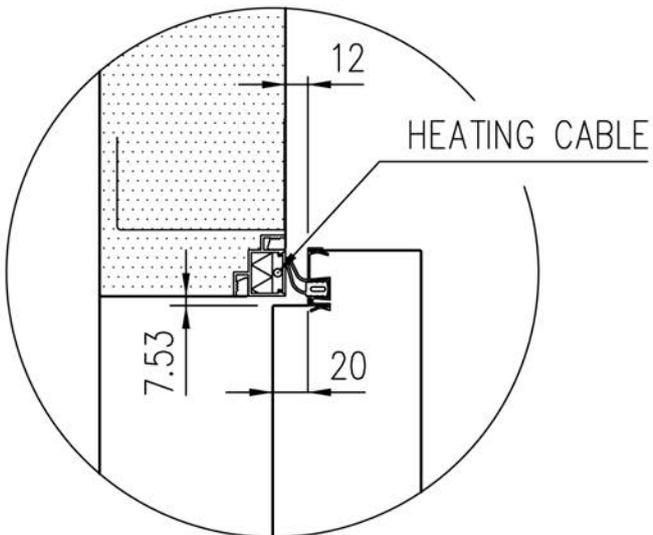
DETAIL A



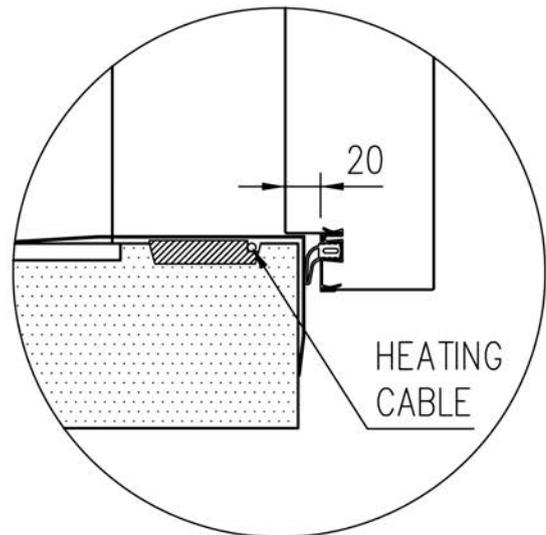
DETAIL B



DETAIL C



DETAIL D



Ceiling panel

Cladding material combination: GS/SSP, GS/P200

Execution:

