Guidelines for Using CELLTHERM Coldrooms

Temperature Ranges

Due to the tight joint of the panels, coldrooms manufactured by CELLTHERM prevent the diffusion of steam and exhibit both exceptional static characteristics and an excellent level of insulation.

Depending upon the application, we recommend the following insulation thicknesses:

Wall thickness 80 mm: recommended temperature range up to +2°C,
for temperature differences up to ΔT = 40 K in accordance with DIN 2055

Wall thickness 100 mm: recommended temperature range up to -20°C,
for temperature differences up to ΔT = 50 K in accordance with DIN 2055

Wall thickness 120mm: recommended temperature range up to -30°C,
for temperature differences up to ΔT = 55 K in accordance with DIN 2055

Wall thickness 150mm: recommended temperature range up to -45°C,
for temperature differences up to ΔT = 70 K in accordance with DIN 2055

In cases of higher temperature differences, we recommend a coldroom design with multiple layers.

Installation Site

Please make sure that the floor panels are always arranged on a horizontal, smooth, and statically suitable surface. If the coldroom will exhibit temperatures below the freezing point, it requires a pressure relief valve as well as a door frame heater and aeration beams. The gap between the floor panels and the solid ground must structurally facilitate ventilation. This minimizes the possibility for the formation of condensed water underneath the floor panels.

An electrical heater mat underneath the panels to prevent freezing can be arranged as an alternative.

Floor

With regard to the structure, the floor of the building must fulfill a number of minimum requirements to ensure the smooth installation of the coldroom.

As every bump in the ground will impact the floor of the coldroom, it must be compensated prior to arranging the floor panels. The floor of the building must form a horizontal plane. Bumps up to 10 mm are acceptable (and will be compensated during assembly).

Bumps in excess of 10 mm must be structurally compensated prior to assembling the coldroom.

If you use aeration rings, smaller bumps can be compensated. To that end, suitable material (e.g. tiles) is placed underneath the rings. Please make sure that this material is prevented from shifting.

Wall Distances / Air Circulation

If the coldroom is installed in existing rooms or at adjacent walls, a wall distance of at least 50 mm between the coldroom and the wall is required to ensure sufficient air circulation at the exterior wall of the coldroom. This reduces the possibility of the formation of condensed water.

Doors

With regard to the doors, please ensure that their design corresponds to their intended use.

A door frame heater is absolutely necessary for coldrooms exhibiting a coldroom temperature below 0°C. The same applies for coldrooms which are installed in outdoor areas potentially exhibiting a surrounding temperature below 0°C.

In cases of lowered coldrooms, use a floor level door design. The same applies to coldrooms without floors attached in U profiles.

Roofing (Outdoor Installation)

If a coldroom is installed outdoors or in an area allowing full exposure to climatic influences, the coldroom requires both roofing as well as a permanently elastic seal of the outer panel seams.

The roof should protect the coldroom from water, snow, and wind exposure and must exhibit an appropriate size, in particular in the area of the door.

In addition, if it is reasonable to assume that the surrounding temperature can fall below 0°C, doors must generally be equipped with a door frame heater.

Surface Materials

Various materials are available for the exterior and interior surfaces of CELLTHERM coldrooms. These can also be applied in a combined manner.

The essential guidelines for selecting surface materials are:

Intended use	: Climatic conditions, chemical exposure, physical exposure
Customer requirement	: colour; chemical, biological, and physical requirements
Cleaning exposure	: Use of cleaning devices facilitating high pressure and steam, chemical exposure to cleaning agents and disinfectants

The following materials are available as interior and exterior cladding for coldrooms:

- Prime galvanized sheet steel with a white zinc-aluminum-coating, baked-on enamel (RAL 9002)
- Sheet V2A material number 1.4301-AISI 304 in various surface structures
- Sheet V4A material number 1.4401-AISI 316 in various surface structures
- Sheet aluminium in various surface structures

The following claddings are available for coldroom floors:

- Prime galvanized sheet steel with a white zinc-aluminum-coating, baked-on enamel (RAL 9002)
- Sheet V2A material number 1.4301-AISI 304 in various surface structures
- Sheet V4A material number 1.4401-AISI 316 in various surface structures
- Sheet aluminium in various surface structures
- Anti-slip, reinforced plastic coated cladding (GFK)

Durability of the Claddings

Damage to the cladding (e.g. scratches, cracks, and deformations) causes flaking and/or corrosion unless it is immediately repaired.

Cleaning Rules

Coated, baked-on enamel RAL 9002	- Wash with warm water - Addition of slightly alkaline cleaning agents is permissible (without abrasive, pH value 6-10) - Do not use high pressure cleaning devices
Aluminium	- Wash with warm water - Addition of slightly alkaline cleaning agents is permissible (without abrasive, pH value 6-10) - Do not use high pressure cleaning devices
V2A / V4A	- Clean with warm or hot water or steam - Addition of alkaline cleaning agents is permissible - Use of cleaning devices facilitating high pressure and steam is to some extent permissible
Plastic coated cladding (GFK)	- Wash with warm water - Addition of slightly alkaline cleaning agents is permissible (without abrasive, pH value 6-10) - Do not use high pressure cleaning devices

After cleaning, we recommend that the room be thoroughly dried prior to the initial operation.

Disinfection

To disinfect the coldrooms, only use disinfectants that do not attack or discolour the surface materials or cause other changes (maceration or flaking of finishes).

After the disinfection with an appropriate disinfectant has been completed, the surfaces must be once again neutralized unless they are already neutral.

Information with regard to the suitability of a disinfectant is included in the safety data sheet or similar information material of the respective disinfectant manufacturer.