incold®

BIGISOPANELS

SYSTEM TECHNICAL DOSSIER

INFOTEC N° B - 00.00
REV. 05

SUMMARY PAGINA

GENERAL PRODUCT DESCRIPTION 4

CONTROLLED ATMOSPHERE COLD ROOMS 8

JOINTS AND FIXINGS 9

- CORNER JOINTS 9
- CEILING JOINTS AND HANGING 12
- FLOOR FIXING 13
- LOW TEMPERATURE FLOOR FIXING 14

PACKAGING - TRANSPORTING – STORING 17

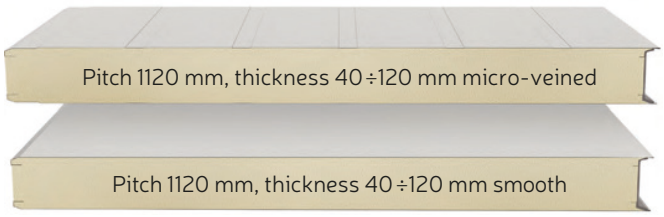
MAINTENANCE – CLEANING 17

PANEL DATA SHEETS 18

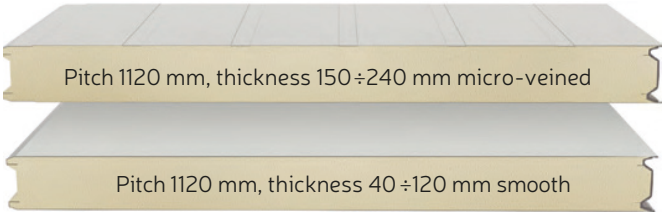
GENERAL PRODUCT DESCRIPTION

System of isolating panels of the sandwich type with male-female joints for building food farming rooms, cells and refrigerated storerooms for positive and negative temperatures. Designed to have high performance thermal insulation qualities, mechanical resistance, hygiene and be quick to install, it has been produced according to European Norm EN 14509.

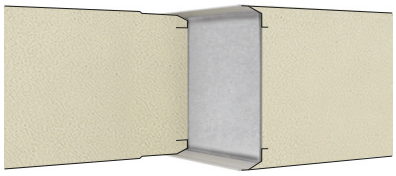
Available in a range of surface finishes, micro-veined or smooth.

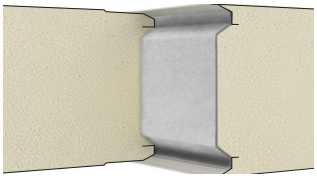


Male/Female click joint with polyurethane seal.
Thickness: 60÷120 mm



Male/Female click joint with polyurethane seal.
Thickness: 150÷240 mm





The system includes

- 10 types of panel for walls or ceilings of which 5 have a micro-veined finish and 5 have a smooth finish, 1120 mm module, produced on a continuous dynamic press or on a discontinuous static press.
  Denomination: Cs3 – GSL 112 Cs3 – GS 112 Bs2 – GSL 112 Bs2 – GS 112 Bs1 – GSL 112 Bs1 – PGS 112 Bs3 – PGSL 112 Bs3 - PGS 112G Bs3 – PGSL 112G Bs3. The panels in the GS range are produced on a continuous line, whereas the PGS range panes are produced on a discontinuous line with a static press with foaming and vacuum air.
- Range of thicknesses: mm 40 - 60 – 80 – 100 – 120 – 150 – 180 – 200 – 240 (See Infotec specifications for panel types).
- Length: Minimum 2000 mm, maximum 14,000 mm for GS range, maximum 12,000 mm for PGS range.
- Corner, vertical and horizontal jointing system, floor fixings and suspended ceiling joints.
- Market entry: The panels are supplied with a performance declaration compliant with the EN 14509 norm.

Identification

An identification panel is glued to each pack of panels and specifies:

- Internal reference numbers of the order and shipment
- The panel pack number
- Customer reference(s)
- The reference numbers and panel designations (dimensions, coatings, foam reference)
- The number of panels contained in the pack
- Production date
- The CE-marking sticker

Supporting structure

Generally external (constructions made from reinforced concrete or metalwork) and the panels do not contribute to the structural stability of the build.
The joints between consecutive panels are male/female tongue-and-groove with or without a seal placed between then (see specification technical data sheet). The fixing of the panels to the supporting structure is carried out using specially designed anchors.

Prevention of injury during installation

In order to prevent the risk of injury, the stability of the project must be guaranteed in the fitting and preparation phase of the rooms, and suitable precautions must be taken regarding the movement of large objects. Ceilings should only be accessed for maintenance and only during the planning phase is such an eventuality considered, according to national regulations in the country where installation is taking place.

Other technical information

- The fire load (or combustible mass) of the polyurethane foam (PUR/PIR) is 10.9 MJ/m^2 × cm
- Insulating heating value PUR compliant with EN ISO 1716:2010 equal to PCS = 27.7 MJ/kg
- Insulating heating value PIR compliant with EN ISO 1716:2010 equal to PCS = 29.7 MJ/kg

Manufacturing

Carried out in the factory of INCOLD S.p.A., with a controlled production process to ensure continuity of performance and quality assurance, in compliance with European Technical Approval ETA 10/0001 and the European Standard EN 14509.

Installation

Installation is carried out by a specialised company according to the applicable regulations regarding the prevention on injury.

Design conditions

- The structure of the buildings must be calculated in compliance with applicable regulations, without considering any contribution of the panels.
- The choice of coatings / coverings must be made according to the intended use of the rooms and in compliance with applicable
- regulations regarding the storage of foodstuffs.
- If a secondary structure is used for fixing the panels, its resistance must be checked beforehand.
- Access to the ceiling space must be limited to maintenance operations, on the condition that during the design phase that this possibility was taken into consideration, and that the excess weight was calculated and is compliant with the legislation applicable in the country where the installation is taking place.

Manufacturing process

The manufacture of the BIGISOPANELS panels is carried out in a continuous or discontinuous process at INCOLD S.p.A.'s factory in Via A. Grandi 1, Rovigo, Italy as follows:

1. Coil unravelling
2. Straightening
3. Profiling
4. Sheet pre-heating
5. Distribution of polyurethane foam
6. Expansion and polymerisation of the foam
7. Cut lengthways
8. Stabilising (cooling)
9. Packing

Sheet acceptance checks

- Metal support thickness check
- Colour check
- Paint thickness check

Check during the PUR - PIR system process phase

Measurement of system reactivity in free expansion by the evaluation of:

- Gel times
- Wire times.

Controls on finished products

TYPE	FREQUENCY	OPERATOR
Length	Once per shift	Operator cut
Thickness	Once per shift	Operator cut
Planarity	Twice per shift	Operator cut
Filling	Continuous	Operator cut
Squaring off	Twice per shift	Operator stacker
Density check	Once per shift	Operator foaming
Compression	Once per day	Laboratory
Sheet/foam adherence	Continuous (quality control) by peeling Twice per week by perpendicular traction	Operator stacker Laboratory
4-point bending	Once per month	Laboratory
Dimension stability + 80°C (⩽ 2%)	Once per week	Laboratory
Dimension stability - 20°C (⩽ 2%)	Once per week	Laboratory

Coatings

INCOLD S.p.A. offers a wide choice of coverings. Below is a summary table.
The standard cladding is PR (B), hot-galvanised steel sheet with the SENDZMIR system pre-painted with white RAL 9010 polyester paint.
For a more detailed description please refer to the relevant INFOTEC reference, indicated in the table.

INFOTEC	NAME	DESCRIPTION
G-00.10	**PR (A)**	**Pre-painted sheet metal PR type A (thickness 0.45 mm)** Metal substrate (SENDZMIR hot-dip galvanised carbon steel), visible side coated with highly adhesive and chemically resistant polyester resin paint white RAL 9010 suitable for food contact.
G-00.11	**PR (B)**	**Pre-painted sheet metal PR type B (thickness 0.5mm)** Metal substrate (SENDZMIR hot-dip galvanised carbon steel), visible side coated with highly adhesive and chemically resistant polyester resin paint white RAL 9010 suitable for food contact.
G-00.03	**PL**	**Plastic-coated sheet metal at 43 SMA for indoor use** Metal support (SENDZMIR hot-dip galvanised carbon steel) pre-coated with PVC film with a slightly embossed finish.
G-00.06	**PLIX**	**Plastic-coated stainless steel sheet (PLIX)** AISI 304- 2B stainless steel sheet pre-coated with hot-applied rigid PVC film in white RAL 9010 (designated A 43 SMA).
G-00.09	**PET 55**	**PET Co-Laminate 55** The PET co-laminated sheet consists of a hot-dip galvanised steel substrate SENDZMIR system, pre-coated with a layer of polyester paint and co-laminated with a transparent PET film (matt surface).
G-00.15	**HDX**	**Pre-painted sheet metal with polyurethane paint 55** Steel sheet pre-painted with 55µ polyurethane paint, RAL 9010, consisting of metal substrate pre-coated with several layers of paint and a semi-gloss finish. For outdoor use.
G-00.08	**VIX**	**Pre-painted stainless steel sheet (VIX)** AISI 304 (EN 1.4301) stainless steel sheet pre-painted with polyester paint, white RAL 9010 colour.
G-00.13	**Incold Zero**	**Antibacterial plasticised sheet metal** Metal substrate (cold-formed low-carbon steel), exposed PVC film coating with antibacterial properties.

Pur/sheet adhesion

For improved adhesion of the polyurethane to the sheets, the processing cycle treats the internal surfaces of with the so-called Corona discharge effect, which can change the surface tension of the sheets, and make it more receptive to foam, the adhesion value as a result is ⩾ 100 KPa.

Insulation

- Rigid polyurethane foam (PUR), or rigid polyisocyanurate foam (PIR) according to the type of panel chosen.
- Average density 40 kg/m^3 ± 10%
- Initial thermal conductivity λ 0.021 W/m K (GS), λ 0.023 W/m K (PGS)
- Closed cells 95%
- Compression resistance ⩾ 100 KPa
- Fire reactivity certified compliant with European Norm EN 13501-1, variable according to the type of insulation chosen. Certification available: D s3 d0, C s3 d0, B s2 d0, B s1 d0 (for GS); B s3 d0 (for PGS).

GS PANELS - THERMAL TRANSMISSION COEFFICIENT U (where λ= 0.021 W/m K)										
Panel thickness	mm	40	60	80	100	120	150	180	200	240
Coefficient U	W/m^2 K	0.532	0.344	0.256	0.204	0.170	0.137	0.114	0.102	0.085

PGS PANELS - THERMAL TRANSMISSION COEFFICIENT U (where λ= 0.023 W/m K)										
Panel thickness	mm	40	60	80	100	120	150	180	200	240
Coefficient U	W/m^2 K	0.576	0.384	0.288	0.230	0.192	0.154	0.127	0.115	0.096

Choosing thickness

The choice of thickness according to the operating temperature, energy consumption limits, but also the size of the storeroom to be made, trying to take best advantage of the self-supporting capacity.

SUGGESTED PANEL THICKNESS DEPENDING ON INTERNAL / EXTERNAL TEMPERATURE DIFFERENCES ΔT IN °C						
Thickness	**ΔT 10 °C**	**ΔT20 °C**	**ΔT30 °C**	**ΔT40 °C**	**ΔT50 °C**	**ΔT60 °C**
40	Suggested	Suggested	Not suggested	Not suggested	Not suggested	Not suggested
60	Suggested	Suggested	Suggested	Not suggested	Not suggested	Not suggested
80	Suggested	Suggested	Suggested	Not suggested	Not suggested	Not suggested
100	Suggested	Suggested	Suggested	Suggested	Not suggested	Not suggested
120	Suggested	Suggested	Suggested	Suggested	Not suggested	Not suggested
150	Suggested	Suggested	Suggested	Suggested	Suggested	Not suggested
180	Suggested	Suggested	Suggested	Suggested	Suggested	Not suggested
200	Suggested	Suggested	Suggested	Suggested	Suggested	Suggested
240	Suggested	Suggested	Suggested	Suggested	Suggested	Suggested

FOOD FARMING ENVIRONMENT CLASSIFICATION ACCORDING TO INTERNAL ATMOSPHERE						
Category	**Aggression**	**Cleaning**	**Humidity**	**Internal temperature**	**Type of storage and/or processing**	**Compatible coatings**
Ai 1	Not Aggressive	Ordinary	Low	-40 ÷ +25 °C	· Low temperature storage cells. · Dry product storage	PR 25µ PL 110µ
Ai 2	Not Aggressive	Ordinary	Medium	0 ÷ +25 °C	· Fruit and Vegetable storage · Controlled atmosphere storage · Packaged dairy product storage · Packaged meat product storage	PR 25µ PL 110µ
Ai 3	Not Aggressive	Not intense	High	0 ÷ +25 °C	· Fruit and Vegetable processing · Meat storage and processing	PR 25µ PL 110µ PT 55µ
Ai 4	Weakly Aggressive	Not intense	Wet	0 ÷ +30 °C	· Preparation of cooked foods. · Poultry butchery · Wine storage cellars · Butter processing · Meat processing	PL 110µ PT 45µ HDX55µ IX – PX - VX
Ai 5	Aggressive	Intensive	Very Wet	0 ÷ +35 °C	· Beef, lamb, goat and pork butchery · Cured meat processing · Mushroom cultivation · Cooking rooms · Drying or smoking · Searing and evisceration · Bread laboratories · Fish processing	PL 110µ PT 55µ HDX55 IX – PX - VX
Ai 6	Very Aggressive	Very intense	Saturated	0 ÷ +40 °C	· Tripe cleaning and processing · Skin and leather processing · Salting and brining · Milk and dairy processing · Seafood processing	PX 110µ VX 25µ VR (fibreglass) VH (Glasincold)
Normative ref.: Documents Techniques Unifiés _DTU 45.1 (It replaced the standard NFP75-401)						

CONTROLLED ATMOSPHERE COLD ROOMS

These are built as common refrigerated cells, with some differences in relation to gas tightness, as well as fitting the cells with suitablyde-signed safety doors and valves, as specified below.

Gas-tightness

- Sealing of joints (including corners, etc.) with the application of glass fabric strips up to their maximum saturation, with VINILFLEX elasticised resin;
- Once dry, the panels will be completely coated in VINILFLEX elastomer resin, extra-white with anti-mould.

The glass fabric used must have a weight of 40 g/m^2 and the following dimensions:
- 20 cm wide on the wall joints
- 40 cm wide on the wall and ceiling corner joints.

The connection between the panel and the reinforced concrete jet must be carried out with glass fabric of a width of 40 cm; of which 20 cm anchored to the wall and 20 cm to the floor, all impregnated with elasticised VINILFLEX resin.

Doors for controlled atmosphere cold rooms

These come with an insulated glass access door in order to be able to inspect products without opening the whole door, reducing exposure to outside causing a change in oxygen concentration levels inside.
The doors are thermally insulated, and particular attention must be paid in order to make a perfect seal, with special rubber seals applied to the jamb or door itself.

Safety valves

These have an important protective role in the cell structure, as pressure variations, even large ones, may occur due to various reasons.
In general, hydraulic seal valves are used that are triggered by pressure variations in the order of 10 mm of water column.
An increase in pressure opens a section of the valve, allowing it to be re-balanced.

Seal check

Controlled atmosphere rooms must guarantee a perfect seal in order to maintain oxygen and carbon dioxide levels below 5% depending on the case, greatly difference to levels normally present in the atmosphere.
Check the seal level before commissioning by carrying out a pressure test (15 mm water column) and depression test (3-5 mm water column), in order to calculate the significance of any leaks

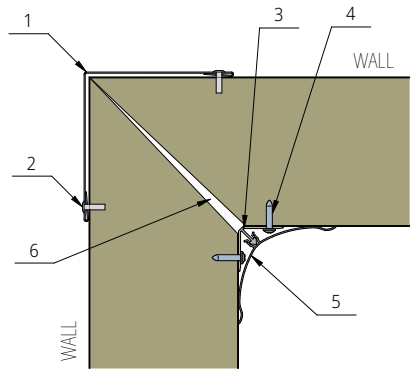
JOINTS AND FIXINGS

The fixing of vertical and ceiling panels and the corner joints is by means of the sheet profiles with the same characteristics as the panel coatings.
Each joint is designed according to its intended final use.

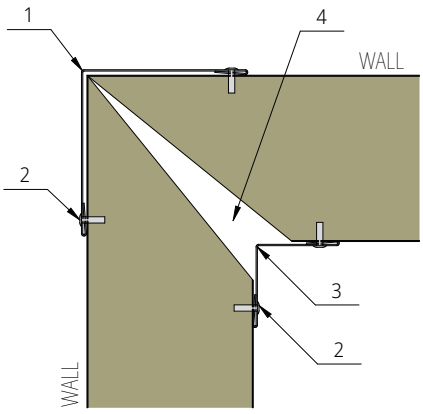
- **CORNER JOINTS**

Made from panels suitably cut and shaped, fixed and covered on the outside with special corner sheets, and on the inside with rounded-off PVC profiles, hooked on to the special aluminium profiles, continuity of insulation is guaranteed by foam in between the parts.

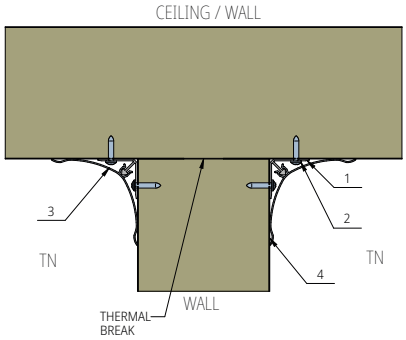
VERTICAL EDGE JOINT WITH SANITARY FITTING (D2BA0004)

Item	Description	Quantity	Code
	1. External corner profile 8/10 100x100: finishing PR finishing PL finishing IX	 mt mt mt	 02121012 02121013 02121014
	2. Rivets 3.8x14 in aluminium RAL 9010 Rivets 3.8x14 INOX	Pcs 6x1mt Pcs 6x1mt	04920001 04920005
	3. Aluminum support for PVC sanitary profile	mt	00150006
	4. Self-perforating screw 4.2 x 19	Pcs 6x1mt	04854004
	5. PVC sanitary profile	mt	00170049
	6. Polyurethane foam 750 ml F117 Polyurethane foam 750 ml F117 for matic gun Winter Polyurethane foam 750 ml F117 Winter Polyurethane foam 750 ml F117 for matic gun	Pcs Pcs Pcs Pcs	04011000 04011001 04011005 04011004

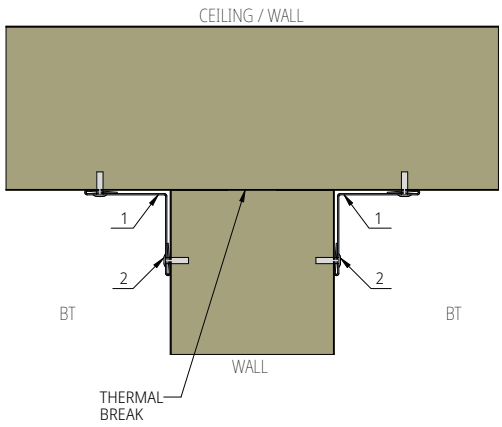
VERTICAL EDGE JOINT (D2BA0005)

Item	Description	Quantity	Code
	1. External corner profile 8/10 100x100: finishing PR finishing PL finishing IX	 mt mt mt	 02121012 02121013 02121014
	2. Rivets 3.8x14 in aluminium RAL 9010 Rivets 3.8x14 INOX	Pcs 6x1mt Pcs 6x1mt	04920001 04920005
	3. Internal corner profile 8/10 50x50: finishing PR finishing PL finishing IX finishing IX white RAL 9010	 mt mt mt mt	 02121090 02121095 02121094 02121092
	4. Polyurethane foam 750 ml F117 Polyurethane foam 750 ml F117 for matic gun Winter Polyurethane foam 750 ml F117 Winter Polyurethane foam 750 ml F117 for matic gun	Pcs Pcs Pcs Pcs	04011000 04011001 04011005 04011004

PARTITION JOINT WITH SANITARY FITTING (D2BA0006)

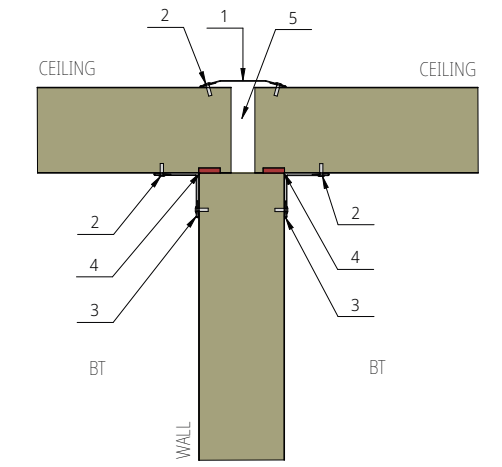
Item	Description	Quantity	Code
	1. Aluminum support for PVC sanitary profile	mt	00150006
	2. Self-perforating screw 4.2 x 19	Pcs 6x1mt	04854004
	3. PVC sanitary profile	mt	00170049
	4. White silicone	Pcs	04015001

PARTITION JOINT (D2BA0007)



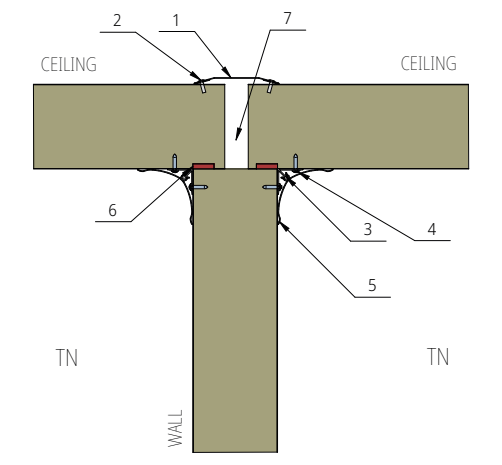
Item	Description	Quantity	Code
	1. Internal corner profile 8/10 50x50:		
	finishing PR	mt	02121090
	finisching PL	mt	02121095
	finishing IX	mt	02121094
	finishing IX white RAL 9010	mt	02121092
	2. Rivets 3.8x14 in aluminium RAL 9010	Pcs 6x1mt	04920001
	Rivets 3.8x14 INOX	Pcs 6x1mt	04920005

FOAMED WALL/CEILING JOINT (D2BA0008)



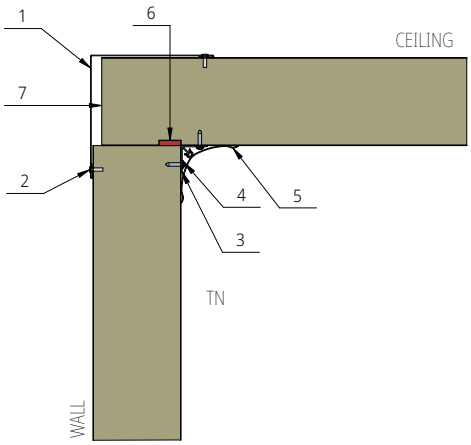
Item	Description	Quantity	Code
	1. Butterfly covering profil:		
	finishing PR	mt	02121033
	finishing PL	mt	02121034
	finishing IX	mt	02121035
	2. Rivets 3.8x14 in aluminium RAL 9010	Pcs 6x1mt	04920001
	Rivets 3.8x14 INOX	Pcs 6x1mt	04920005
	3. Internal corner profile 8/10 50x50:		
	finishing PR	mt	02121090
	finishing PL	mt	02121095
	finishing IX	mt	02121094
	finishing IX white RAL 9010	mt	02121092
	4. Adhesive gasket Sticol 6x25		04250010
	5. Polyurethane foam 750 ml F117	Pcs	04011000
	Polyurethane foam 750 ml F117 for matic gun	Pcs	04011001
	Winter Polyurethane foam 750 ml F117	Pcs	04011005
	Winter Polyurethane foam 750 ml F117 for matic gun	Pcs	04011004

FOAMED WALL/CEILING JOINT WITH SANITARY FITTING (D2BA0009)



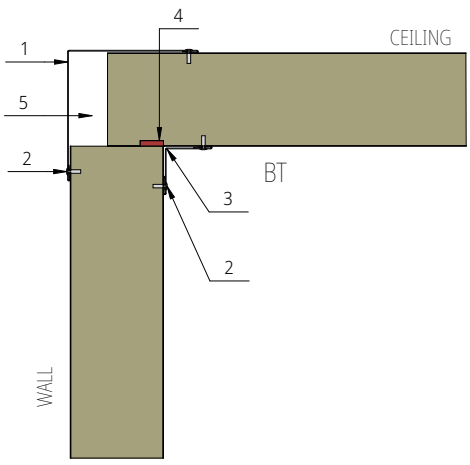
Item	Description	Quantity	Code
	1. Butterfly covering profil:		
	finishing PR	mt	02121033
	finishing PL	mt	02121034
	finishing IX	mt	02121035
	2. Rivets 3.8x14 in aluminium RAL 9010	Pcs 6x1mt	04920001
	Rivets 3.8x14 INOX	Pcs 6x1mt	04920005
	3. Aluminum support for PVC sanitary profile	mt	00170049
	4. Self-perforating screw 4.2 x 19	Pcs 6 x 1	04854004
	5. PVC sanitary profile	mt	00170049
	6. Adhesive gasket Sticol 6x25		04250010
	7. Polyurethane foam 750 ml F117	Pcs	04011000
	Polyurethane foam 750 ml F117 for matic gun	Pcs	04011001
	Winter Polyurethane foam 750 ml F117	Pcs	04011005
	Winter Polyurethane foam 750 ml F117 for matic gun	Pcs	04011004

FOAMED WALL/CEILING JOINT WITH SANITARY FITTING (D2BA0010)



Item	Description	Quantity	Code
	1. External corner profile 8/10 (see ""table of external edge cover sheets"))	mt	See TABLE
	2. Rivets 3.8x14 in aluminium RAL 9010 Rivets 3.8x14 INOX	Pcs 6x1mt Pcs 6x1mt	04920001 04920005
	3. Aluminum support for PVC sanitary profile	mt	00170049
	4. Self-perforating screw 4.2 x 19	Pcs 6 x 1	04854004
	5. PVC sanitary profile	mt	00170049
	6. Adhesive gasket Sticol 6x25		04250010
	7. Polyurethane foam 750 ml F117 Polyurethane foam 750 ml F117 for matic gun Winter Polyurethane foam 750 ml F117 Winter Polyurethane foam 750 ml F117 for matic gun	Pcs Pcs Pcs Pcs	04011000 04011001 04011005 04011004

FOAMED WALL/CEILING JOINT (D2BA0011)



Item	Description	Quantity	Code
	1. External corner profile 8/10 (see ""table of external edge cover sheets")	mt	Vedi TAB
	2. Rivets 3.8x14 in aluminium RAL 9010 Rivets 3.8x14 INOX	Pcs 6x1mt Pcs 6x1mt	04920001 04920005
	3. Internal corner profile 8/10 50x50: finishing PR finisching PL finishing IX	 mt mt mt	 02121090 02121095 02121094
	4. Adhesive gasket Sticol 6x25		04250010
	5. Polyurethane foam 750 ml F117 Polyurethane foam 750 ml F117 for matic gun Winter Polyurethane foam 750 ml F117 Winter Polyurethane foam 750 ml F117 for matic gun	Pcs Pcs Pcs Pcs	04011000 04011001 04011005 04011004

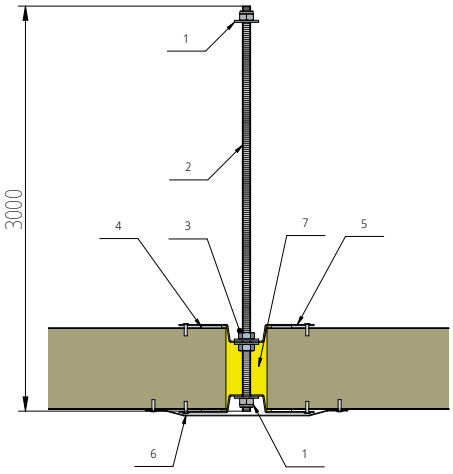
TABLE OF EXTERNAL EDGE COVER SHEETS

PANEL THICKNESS [mm]	SIZE [mm] x [mm]	PR	PL	IX	PX
60	**100x100**	02121012	02121013	02121014	02121077
80 ÷ 100	**140x140**	02121016	02121017	02121062	02121078
120	**125x170**	02121101	02121102	02121103	02121104
150	**125x200**	02121107	02121108	02121109	02121110
180 ÷ 200	**125x250**	02121113	02121114	02121115	02121116
240	**150x300**	02121141	02121142	02121143	02121144

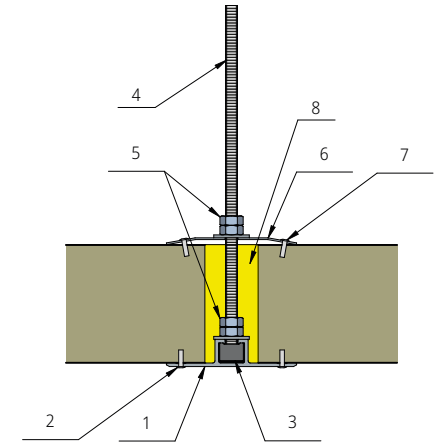
- **CEILING JOINTS AND HANGING**

When constructing large ceilings, the joints between the panels is made using a foamed joint on site, finished with the special covering profiles. The anchorage to the existing supporting structure is usually made by special tensioners or threaded bars

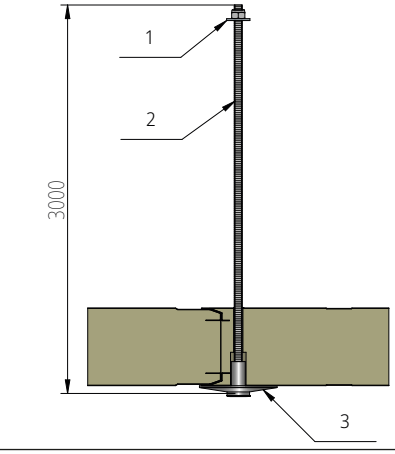
BUTTERFLY JOINT (D2BA0001)

Item	Description	Quantity	Code
	1. Hexagonal nut M10 ZN self-locking Level washer 10.5x30 140 HV ZN	Pcs 2x1mt Pcs 2x1mt	04883002 04901009
	2. Tapping bar ZN M10 300cm ZN	Pcs 1x1mt	04851013
	3. Hexagonal nut M10 ZN Level washer 10.5x30 140HV ZN	Pcs 2x1mt Pcs 2x1mt	04881008 04901009
	4. Adh. Gasket Sticol pr polit 6x25	4mt x1mt	04250010
	5. Profil OMEGA 167X22X1,5 4F S250GD GALVANIZED Rivets 3.8x14	Pcs 2x1mt Pcs 24x1mt	02122086 04920000
	6. Butterfly joint cover profile 250x4000 Rivets 3.8x14 All. BN.	Pcs 1x1mt Pcs 12x1mt	PR – 02121147 PL – 02121148 IX – 02121149 ZN – 02121151 04920001
	7. Polyurethane foam 750 ml	-	04011000

OME JOINT (D2BA0002)

Item	Description	Quantity	Code
	1. Aluminium OME 110 profile L = 4000 mm BN	Pcs 1x1mt	00150218
	2. White aluminium 3.8 x 14 rivets, 300 mm pitch	Pcs 8x1mt	04920001
	3. OMES rectangular insert60X20h15	Pcs 1x1mt	D01F3042
	4. M10 threaded bar 300 cm ZN	Pcs 1x1mt	04851013
	5. M10 hexagonal nuts Flat washer 10.5 x 30	Pcs 4x1mt Pcs 2x1mt	04881008 04901009
	6. 1.5 mm flat galvanised sheet profile	Pcs 1x1mt	02122098
	7. Aluminium 3.8 x 14 rivets, 300 mm pitch	Pcs 8x1mt	04920000
	8. Polyurethane foam 750 ml	-	04011000

INTERMEDIATE SUSPENSION (D2BA0003)

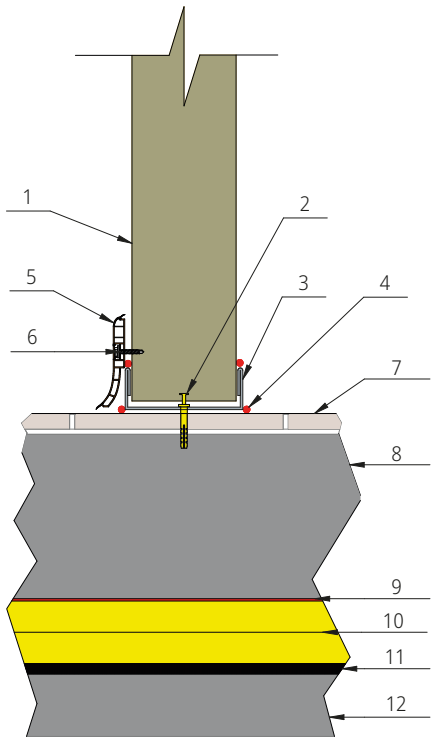
Item	Description	Quantity	Code
	1. Hexagonal nut M10 ZN self-locking Level washer 10.5x30 140 HV ZN	Pcs 2x1mt Pcs 2x1mt	04883002 04901009
	2. Tapping bar ZN M10 300CM ZN	Pcs 1x1mt	04851013
	3. Buckle ABS D100 M10	Pcs 1x1mt	04181034

- **FLOOR FIXING**

They can be made in various ways and with various materials depending on the needs and use of the rooms.
They can be made of sheet metal, stainless steel or concrete walls.
Below are some types of floor fixings

Cold room floor fixing at chiller temperature

GROUND FIXING WITH U-PROFILE (0°C TO 2°C) WITHOUT INSULATING FLOORING (D2BA0018)

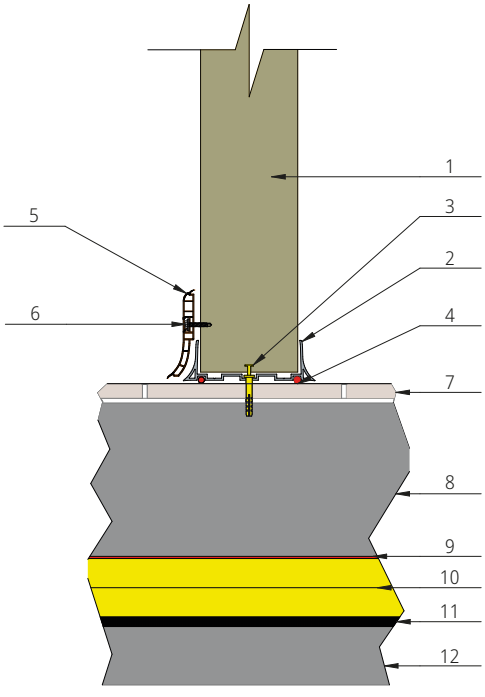


Item	Description	Code
	1. Panel	
	2. PVC expansion screw + screw D6	04850000
	3. U profil	See "finishing table"
	4. White/gray sealant (1 each 7,5 m)	04015052 04015061
	5. PVC base board contour with tongue	00170054
	6. Self-perforating screw 4.2 x 19 (Nr. 1 each 50 cm)	04854004
	7. Tiled floor	
	8. Concrete casting	
	9. Vapor barrier (NYLON)	
	10. Insulation	
	11. Bituminous sheathing	
	12. Collaborating slab (Dimensioned by customer)	

FINISHING

Thickness	PR	PL	IX
60	02640060	02640063	02640066
80	02640061	02640064	02640067
100	02640062	02640065	02640068
120	02640070	02640931	02920025

FLOOR-MOUNTED TN CELL FLOORLESS WITH SKIRTING BOARD (D2BA0017)



Item	Description	Code
	1. Panel	
	2. "U" PVC sanitary profile for cold room without floor – 60 thick "U" PVC sanitary profile for cold room without floor – 80 thick "U" PVC sanitary profile for cold room without floor – 100 thick "U" PVC sanitary profile for cold room without floor – 120 thick	00170112 00170113 00170114 00170115
	3. PVC expansion screw + screw D6	04850000
	4. White/gray sealant (1 each 7,5 m)	04015052 04015061
	5. PVC base board contour with tongue	00170054
	6. Self-perforating screw 4.2 x 19 (Nr. 1 each 50 cm)	04854004
	7. Tiled floor	
	8. Concrete casting	
	9. Vapor barrier (NYLON)	
	10. Insulation	
	11. Bituminous sheathing	
	12. Collaborating slab (Dimensioned by customer)	

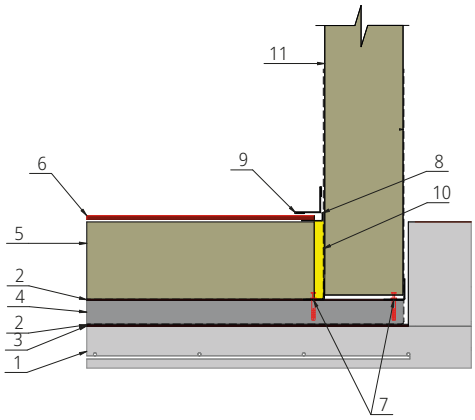
- **LOW TEMPERATURE FLOOR FIXING**

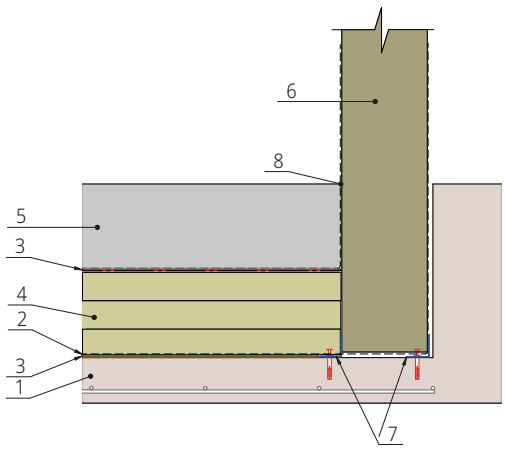
Traditional flooring insulation

Generally composed of:

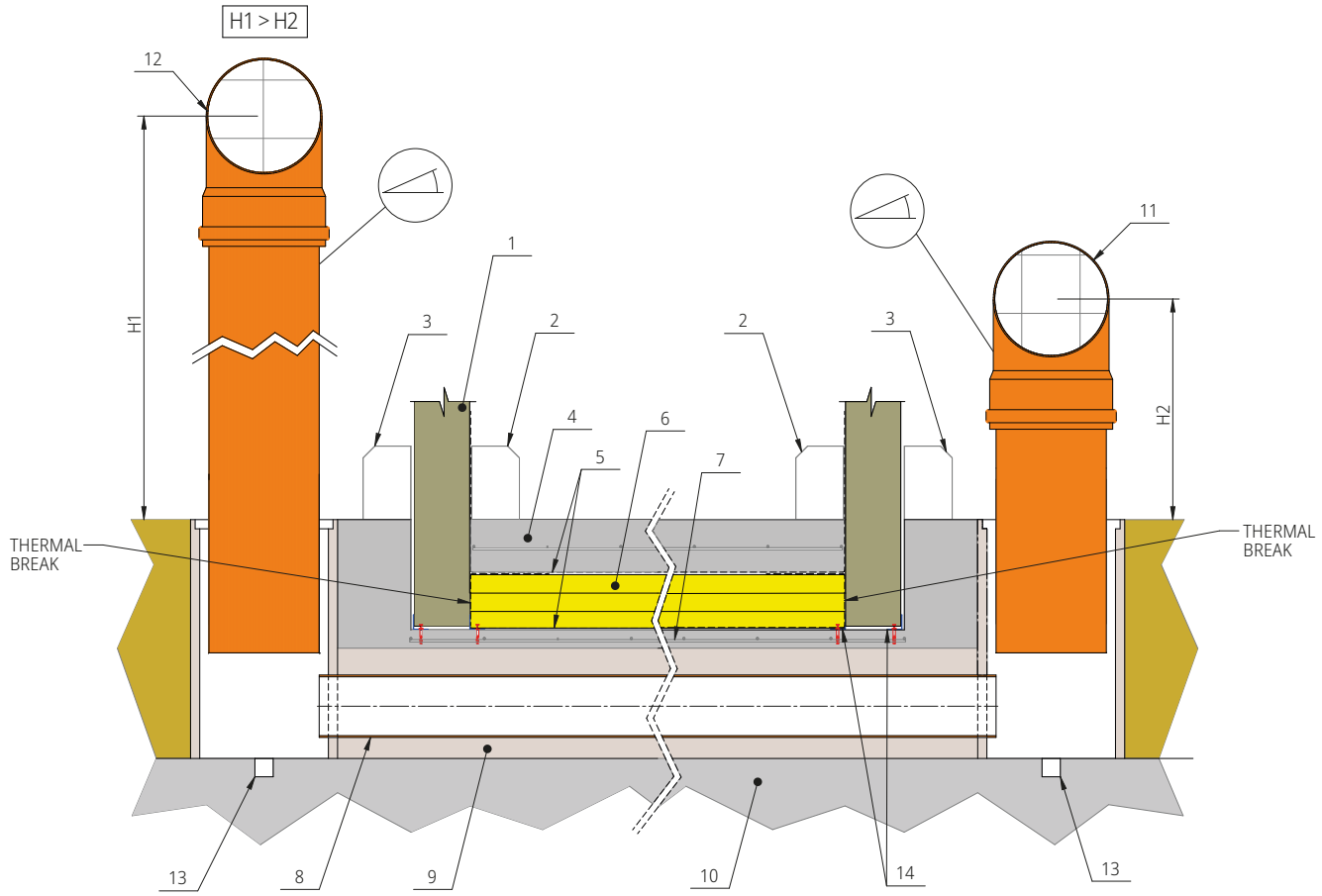
- Sheets of expanded polyurethane coated in bituminous paper felt or extruded polystyrene, depending on the required compression resistance, generally PUR sheets have a compression resistance equal to 1 kg/cm², where as polystyrene, depending on the type, can be up to 3 kg/cm² or even 5 kg/cm².
- Vapour barrier (before and after insulation) made up of a polyethylene sheath 200 η, overlapped and glued with an adhesive strip.

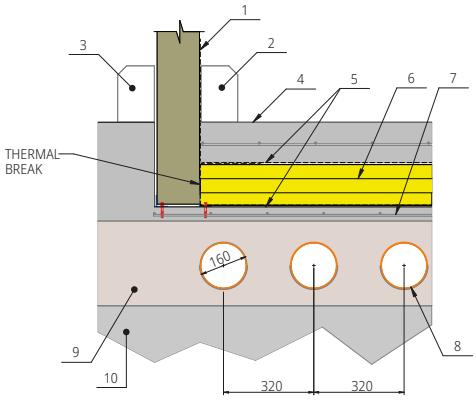
TECHNICAL CHARACTERISTICS OF INSULATION SHEETS FOR TRADITIONAL FLOORING		
Type of insulation	**Thermal conductivity λ [W/mK]**	**Compression resistance kg/cm²**
Polyurethane with double-sided multi-layer coating	0.024	1.0
Extruded polystyrene XPS -XC3	0.034	3.1
Extruded polystyrene XPS -XC5	0.034	5.1
Extruded polystyrene XPS -XC7	0.034	7.1

LOW-TEMPERATURE COLD ROOM WITH HEATING MAT AND INDUSTRIAL PANEL FLOOR (D2BA0016)		
Item	**Description**	**Code**
	1. Reinforced concrete laying surface	
	2. Heating mat	
	3. Vapor barrier (NYLON)	
	4. Concrete casting	
	5. BIG SYSTEM panel floor	
	6. Sheet steel reinforcement	
	7. Corner profile ZN 40x40x4000 1,2 thick PVC expansion screw + screw D6 2/mt Rivets 3.8x14 (3/mt)	02121041 04850000 04920000
	8. Corner profile ZN 15x40x4000 Rivets 3.8x14 (3/mt)	02121066 04920000
	9. Internal corner profile 8/10 50x50x4000 PR Rivets 3.8x14 (3/mt)	02121090 04920000
	10. Polyurethane foam	
	11. Wall panel	

LOW-TEMPERATURE COLD ROOM WITH HEATING MAT AND REINFORCED CONCRETE FLOOR (D2BA0015)		
Item	**Description**	**Code**
	1. Reinforced concrete slab with welded mesh Ø6 mesh 200x200	
	2. Heating mat to be laid over the vapour barrier	
	3. Vapour barrier	
	4. Polyurethane sheet insulation	
	5. Reinforced concrete floor	
	6. Wall panel	
	7. Corner profile ZN 40x40x4000 1,2 thick PVC expansion screw + screw D6 2/mt Rivets 3.8x14 (3/mt)	02121041 04850000 04920000
	8. Optional interior/exterior finishes	

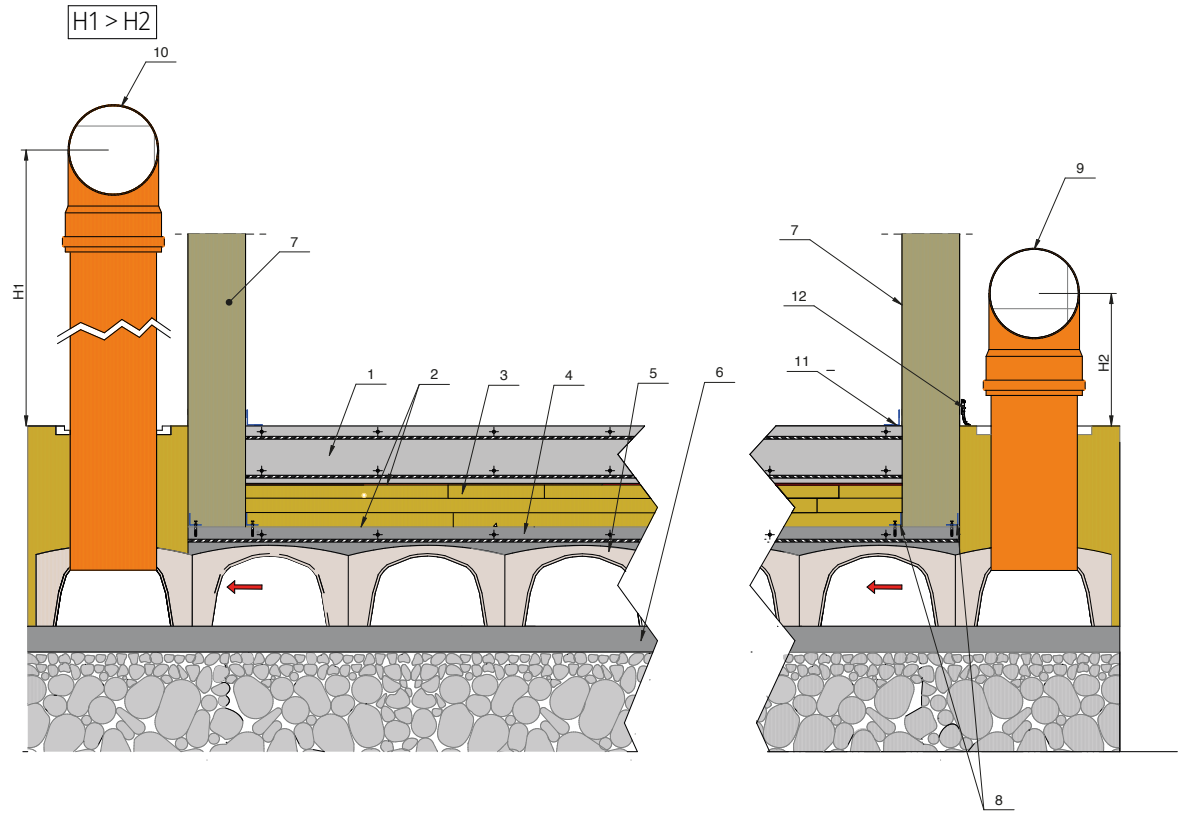
LOW-TEMPERATURE COLD ROOM WITH VENTILATION TUBES (D2BA0014)

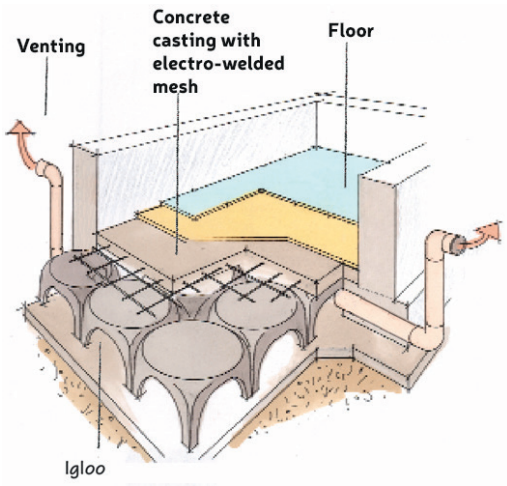




Description	Code
1. Wall panel	
2. Optional Interior Finishings	
3. Optional Exterior Finishings	
4. Reinforced concrete floor	
5. Waterproof layer	
6. Insulation	
7. Supporting concrete	
8. Ventilation channels (Ø160) with front and rear connection pipes, with drains for drainage of any water	
9. Filling around PVC pipes with concrete	
10. Gravel subgrade (recommended execution)	
11. Air inlet pipe with protective grille	
12. Air outlet pipe with protective grille	
13. Drainage drains	
14. Alignment angles in galvanised sheet metal 40x40x4000 1,2 thick dowels for floor fixing 2/mt rivets for fixing angles to the panel 3/mt	D6BS4919

LOW-TEMPERATURE COLD ROOM WITH AIR CAVITY (IGLOO) (D2BA0013)





Description	Code
1. Reinforced concrete floor	
2. Waterproof layer	
3. Insulation	
4. Reinforced concrete slab	
5. Igloo module	
6. Armed magron	
7. Wall panel	
8. Alignment angles in galvanised sheet metal 40x40x4000 1,2 thick dowels for floor fixing 2/mt rivets for fixing angles to the panel 3/mt	02121041 04850000 04920000
9. Air inlet pipe with protective grille	
10. Air outlet pipe with protective grille	
11. Optional Interior Finishings	
12. Optional Exterior Finishings	

PACKAGING - TRANSPORTING – STORING

Marking: The product type, order reference and contents of the package is indicated on every pack.
For packaging, transport and storage see INFOTEC B-10.04

MAINTENANCE – CLEANING

External surfaces

Take maximum care when commissioning the panels, they can get dirty.
A protective film protects the panels during handling, transporting and fitting, this film must be removed before using the panels.
The film must be shielded from the sun's UV rays and from high temperatures to avoid the sheets and film sticking together and preventing the film from being removed.
In order to clean the panels, use traditional neutral-soap based solutions. Greasy or oily marks made during fitting can be removed using white spirit. There are specific detergent products for polyester coatings. Do not use cellulosic thinners, chlorine-based thinners, aromatic solvents, ammonia or abrasive products under any circumstances.
Damage to the coating during fitting can be repaired with spray or tinned paint. The paint should be applied with a fine brush on lightly scratched areas. In the event of deeper scratches, metal putty is recommended before repainting the panel.

Internal surfaces

Considering the importance of cleaning and disinfecting the inside of food farming rooms, we recommend studying cleaning methods in consideration of the characteristics of the panels from a resistance to aggressive cleaning agent point of view, as well as risk of corrosion, the resistance of the seals, the tightness of joints and single points. Rooms with a temperature less than or equal to 0°C must not be cleaned with lots of water.
We recommend scrupulously following the operating procedures given by the manufacturer of the detergent product. In general, the following criteria should be followed:

- pH between 5 and 9
- respect concentration levels
- temperature ⩽ 30°C,
- contact time < 30 minutes,
- rinse
- base pressure ⩽ 5 MPa (50 Bar)

The choice of product must be made on the basis of the type of dirt and the materials that make up the structure, in order to avoid the formation of corrosion.
For the maintenance of pre-painted steel sheet panels, we recommend using chlorine-free products.
Before using a new product, check its technical data sheet for the chemical composition, the pH, the concentration, as well as conditions of use (temperature, application techniques and frequency).

Recommended cleaning procedures

The cleaning procedure must be adapted to the effective requirements:

- on a heavily soiled surface:
  - pre-wash the panels with a jet of hot water using a low pressure lance
  - clean with a foaming solution applied with a foam pistol or a foam distribution unit. The application time of the foam varies between 15 and 30 minutes. Do not allow the foam to dry;
  - rinse with a low pressure lance;
  - disinfect with foam (application time of at least 20 minutes);
  - rinse the disinfectant with water.
- on a lightly-soiled surface:
  - pre-wash the panels with a jet of hot water using a low pressure lance
  - clean or disinfect with a foaming solution applied with a foam pistol or a foam distribution unit (application time of at least 20 minutes);
  - rinse the disinfectant detergent with water.
- Particular indications for cleaning stainless steel surfaces:
  - pre-wash the panels with a jet of hot water using a low pressure lance
  - clean and disinfect with a chlorine-free foaming solution applied with a foam pistol or a foam distribution unit (application time of at least 20 minutes);
  - rinse the disinfectant detergent with water.
  - Do not use abrasive or greasy products
  - Dry with a rubber squeegee similar to those used for glass

PANEL DATA SHEETS

The table below lists the range of panels offered by Incold.

For the data sheet, please refer to the relevant INFOTEC indicated in the column on the left

INFOTEC	NAME	DESCRIPTION
B-01.09	EI 120 "WMP 120DD"	Sandwich panels with tongue-and-groove joint consisting of two micro-ribbed sheet metal supports and a core of oriented fibre rock wool
B-006	GS 112 Bs1	Sandwich panels with tongue-and-groove joint with polyurethane seal
B-004	GS 112 Bs2	Sandwich panels with tongue-and-groove joint with polyurethane seal
B-003	GS 112 Cs3	Sandwich panels with tongue-and-groove joint with polyurethane seal
B-001	PGS 112 Bs3	Sandwich panels with tongue-and-groove joint produced on a press with the 'Air intake system one shot' injection system
B-002	PGS 112G Bs3	Sandwich panels with tongue-and-groove joints produced on a press with the 'Air intake system one shot' injection system
B-01.34	PM 100 - PM 120	Sandwich panels with tongue-and-groove joint with eccentric clamping hooks.
B-015	VH 112 Glasincold	Patented isothermal sandwich panels for rooms and temperature-controlled rooms. The conformation of the joint and the Glasincold anti-bacterial embossed finish guarantee high hygienic performance for environments with a high risk of fungal and/or bacterial contamination.
B-005	VRL 120	Sandwich panels with tongue-and-groove joint produced on a press with the 'Air intake system one shot' injection system, consisting of two GRP (Glass-Reinforced Polyester) laminates between which high-density PUR foam is injected

INCOLD S.p.A.
Via Grandi 1, 45100 Rovigo, Italy
incold.it | incoldactive.it