

# ISO FLOOR

## BERGVIK RAISED ACCESS FLOOR – ISO FLOOR

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# TECHNICAL SPECIFICATION

## 1. COMPONENT SPECIFICATION

### 1.1 Panel

#### Top Side Laminate

The laminate is a Direct Laminate (DL) process manufactured from phenolic and melamine resin impregnated papers, décor layer of M335 Granite and a high-wear type melamine glass overlay. The DL is wear resistant (Class AC3 according to EN 13329) and easy to clean and maintain (vacuum cleaner or dry mop).



**Electrical resistance:**  $>50 \text{ k}\Omega$  and an average value of  $<10 \text{ G}\Omega$  when test specimens and installed floor coverings are tested surface to ground resistivity at a relative humidity RH of max 40%.

**Colour Fastness:**  $>6$  in accordance with EN 13329.

#### Panel core

The Panel core is manufactured from high density particleboard and less than 10 ppm urea formaldehyde. The panel standard sizes are 400x600, 500x600, 600x600, 700x600 and 800x600 mm with a thickness of 38mm. Custom sizes are available.



#### Edge trim

The edge trim of the panel is a glued 0.6mm thick ABS plastic and is applied so it covers the tapered edges, including the surface finish of the floor panel. During installation some panels need to be cut, the edges of the cut panels must be covered with aluminium tape.

#### Bottom side laminate

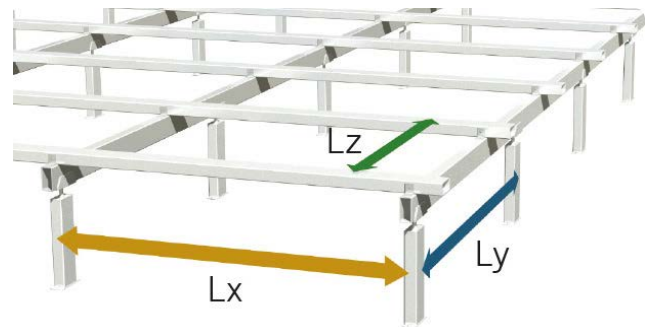
The bottom of the panel is direct laminated with a counter laminate, providing a fire class of at least Bfl-s1 according to EN 13501-01.

### 1.2 Steel sub-structure

The assembly consists of 80x40x1,5 mm primary and secondary layer tube steel beam sections bolted together 90 degrees perpendicular to each other with quick brackets and self-tapping screws. The desired load rating sets the spacing between the beams.

The under structure is self-supporting and independent from floor panel system and doesn't allow for any lateral movement. The hot dipped galvanized tubular steel sections provide a yield strength of minimum 370 MPa and a tensile strength of minimum 450 MPa in accordance with +CR2 classification.

The 80x40x1,5 mm main steel tube sections span a maximum of 1200 mm without support, while supporting  $10 \text{ kN/m}^2$  uniform distributed load and 3 kN concentrated load as a standard. Higher loads can be achieved by changing the internal spacing between the supporting members of the sub-structure.



For integrated support for transformers over 4000 kg, steel bars with dimensions 160x80x5 mm can be used. The 160x80x5 mm beam extends 1200 mm between pedestals while supporting  $80 \text{ kN/m}^2$  evenly distributed load. The robust self-supporting structure allows for removal of floor panels without causing lateral movement or instability in the substructure.

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## 1.3 Pedestal

### Standard Pedestal assembly

The standard pedestal assembly consists of a base, 80x40x1.5 mm steel tube column and a head cap, including pedestal head bracket made of steel with provisions for height adjustment. The base is rectangular with a 90 cm<sup>2</sup> of bearing area.

The column is made to the height required to complete the floor to the specified height, minimum 220 mm. The base plate and head cap are pressed securely into the column.

The Type 40 pedestal head bracket is manufactured from a single piece and attached to the 80x40 mm primary beam with self-tapping screws in pre-stamped holes.

The pedestal base attaches to the concrete floor with two 6x40 mm nail plugs or Hilti Nails.

The pedestal assembly supports an axial load of 31 kN axial load per pedestal, according to CISCA Pedestal Axial Load Test.

The pedestals have a vibration-proof levelling mechanism for making and holding fine adjustments in height over a range of +/- 25 mm.

Pedestals can be locked at the selected height, so deliberate action is required to change height setting thus preventing vibratory displacement.

### Reinforced Pedestal assembly

The pedestal assembly for integrated transformer supports for transformers over 4000 kg consists of a 60x60x3mm steel tube column with head brackets and a foot with provisions for height adjustment. The base of the foot is rectangular with a 153 cm<sup>2</sup> bearing area.

The head brackets attaches to the 80x40x1,5 mm or 160x80x5 mm primary beam with self-tapping screws in pre-stamped holes.

The pedestal base attaches to the concrete floor with two expanding concrete bolts.

The pedestals have a vibration-proof levelling mechanism for making and holding fine adjustments in height over a range of +/- 25 mm.

Pedestals can be locked at the selected height, so deliberate action is required to change height setting thus preventing vibratory displacement.

## 2. PERFORMANCE SPECIFICATION

Concentrated Loads: 600x600 mm floor panels, including those with cut-outs, are capable of withstanding a concentrated design load of 300 kg, with a top-surface deflection under load and a permanent set not to exceed 3.0 mm and 0.2 mm, respectively.

### 2.1 Detailed Panel specification

Panel Size (std.):	600x600mm, +/-0,2mm
Panel Thickness:	38mm, +/-0,1mm
Panel Weight (std.):	10,1 kg

Properties	
Nominal Panel Size (mm x mm) (inch x inch)	600x600x38 (std.) 24x24x1,5 (Unless other specified)
Fireproof Rating Classification (wood/counterlaminated)	EN 13501-01
Fire Rating	Bfl-s1
Fireproof Rating Classification (wood/aluminium)	ASTM E84
Flame spread index	25 or less
Antistatic properties at 25% RH Floor Covering (surface to ground)	10 <sup>10</sup> - 10 <sup>11</sup> ohm
Walking Body Voltage	> 700 V
Bending strength (MOR)	17.5 N/mm <sup>2</sup>
Elasticity (MOE)	2950 N/mm <sup>2</sup>
EN 12825 Load Class	5
Finished Floor height (FFH) standard	300 mm – 2000 mm
Laminate wear resistance (EN 13329)	AC3
Colour fastness (EN 13329)	> 6
Quality assurance (ISO 9001 & 14001)	Certified by LRQA

# TECHNICAL SPECIFICATION

## 2.2 Tolerances and Limits table

Description	Tolerance/Limit
<b>Panel 600x600mm</b>	
Length (sides)	+/- 0,2 mm
Diagonal difference	< 3 mm
Thickness	± 0.1 mm
Level of installed access floor	1.5 mm over 3 m
Level of installed access floor	3 mm over entire floor
Concentrated Load, temporary deflection of 2.8 mm	3 kN
Concentrated Load, permanent deflection of 0.2 mm	3 kN
Max allowed concentrated load	According to design, up to 30 kN
Uniformly Distributed Load per m <sup>2</sup> (max.)	According to design, up to 80 kN/m <sup>2</sup>

## 2.3 Fire Ratings

The fire rating of the floor is determined by Fire resistance and Fire Reaction.

### Fire resistance:

Fire resistance is the ability of the floor to withstand fire and is measured and classed in EN 13501-01.

Any material can be classified according to the European standard. It is a measurement of the time the fire takes to spread when exposed to fire.

### Electrical Characteristics:

The raised floor has an antistatic floor panel covering. The floor system shall be properly grounded to earth at the Steel structure, using grounding lugs in two opposite corners.

## 3. AUXILIARY EQUIPMENT

### 3.1 Support Section

Additional support under for heavy equipment will be added during the design phase of the floor. If heavy equipment is added after installation Bergvik must review and approve the design changes before modifications are done to the floor. The contractor must in-

stall the floor system in accordance with the provided drawings, any changes must be approved by Bergvik.

### 3.2 Pre-cut panels for equipment racks

Optional pre-cut panels are available to fit various equipment vendors relay racks, cabinets, power racks etc. in order to facilitate cabling and anchoring,

### 3.3 Air ventilation panels

Various air grille/ventilation panels with different open areas and sizes are available for Iso Floor. All air grille/ventilation panels shall be flush mounted with the standard floor panels.

### 3.4 Panel lifting device

With each room a double suction panel lifting and one wall mounted panel lifting bracket is delivered.

### 3.5 Mounting clamp

Bergvik's mounting clamp for cable ladders is an accessory customized for Iso Floor and HiFlex Floor pedestals, for floor height of minimum 400 mm. It is suited for the most common brackets in the market.

### 3.6 Ramps & steps

An optional metal ramp with a slope of less than 1:12 and have covering that match floor panel finish. A non-slip permanent tape strip shall be applied to ramp surface. Optional aluminium step or ramp structure can be prefabricated.

### 3.7 Railings

Optional railing including handrail, intermediate rails, posts, brackets, end caps, wall returns, wall and floor flanges, plates and anchor material.

### 3.8 Perimeter support (border fascia)

Optional perimeter support forms a transition between access flooring and adjoining floor coverings. The covering matches the floor panel finish, including a horizontal aluminium transition trim.