

HIFLEX FLOOR

2-STORY HIFLEX RAISED ACCESS FLOOR

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TECHNICAL SPECIFICATION

1. COMPONENT SPECIFICATION

Always remember: Floor heights over 2000 mm, all panels must be bolted down to the substructure for security and due to rules for high altitude work before work can be performed safely.

1.1 Floor Panels/Boards

Standard direct laminated wood core 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 and easy to clean and maintain (vacuum cleaner or dry mop). Wear resistance: class AC3 according to EN 13329.



Electrical resistance: >50,000 ohms and an average value of < 50.000 Mohm when test specimens and installed floor coverings are tested surface to ground resistivity at a relative humidity (RH) of max 40%.

Color Fastness: >6 in accordance with EN 13329.

Panel core and types

The Standard Panel core is manufactured from a high density, moist resistant particleboard with a thickness of 38 mm (1.5 inch). Two different panel types are available for HiFlex Floor, either standard 24x24 inch panels fitted with edge trim and corner screws, or 24x48 inch tongue and groove panels. Custom sizes are also available.



Edge trim

The edge trim of the standard panel is a glued 0.6 mm (0.024 inch) thick ABS plastic and is applied so it fully covers the tapered edges, including the surface finish of the floor panel. During installation, when some panels need to be cut, the edges of the cut panels

shall be covered with aluminum tape.

Bottom side laminate

The bottom of the panel is direct laminated with a white counter laminate, providing a fire class of at least Bfl-s1 according to EN 13501-01. Alternatively, direct laminated with an aluminum sheet, providing a flame spread index of 25 or less per ASTM E84/UL 723/NFPA 255.

Bergvik Calcium sulphate panel

Top Side

The panel top side can be provided with an HPL laminate, or any type of vinyl backed carpet (PVC). HPL laminates and vinyl surfaces are glued onto the panel top. Tongue and groove panels can also be supplied as a bare panel for site installation of vinyl, epoxy coating or similar.

Wear resistance: Depending on type of covering.

Light Fastness: Depending on type of covering.

Electrical resistance: >50,000 ohms and an average value of < 50.000 Mohm, depending on the type of covering.

Panel core

The Panel core is manufactured from a 38 mm (1.5 inch) fiber reinforced gypsum. Two different panel types are available, either a standard panel in size 600x600 mm (23.6x23.6 inch) fitted with edge trim and corner screws, or 1200x600 mm (47.2x23.6 inch) tongue and groove panels.

Tongue and Groove Panel

Comes as a standard size of 1200x600 mm (47.2x23.6 inch) comes with a tongue and groove profile for highest safety and security.

Corner Lockdown Panel

As an alternative, standard panels in size 600x600 mm (23.6x23.6 inch) with corner holes to screw and secure the panels to the substructure. The panels are fitted with edge trim.

Edge trim

The edge trim of the panel is a glued 0.6 mm (0.024 inch) thick ABS plastic is applied so it fully covers the tapered edges, including the surface finish of the floor panel. During installation, when some panels need to be cut, the edges of the cut panels shall be covered with aluminum tape.

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Bottom Side

On the bottom of the panel an aluminum sheet is glued on or left as a bare panel.

1.2 Steel Substructure

The substructure assembly consists of 160x80x5 mm (6.3x3.15x0.025 inch) primary layer tube steel beam sections, and 80x40x1,5 mm (3.15x1.57x0.06 inch) secondary layer tube steel beam sections bolted together 90 degrees perpendicular to each other with connector brackets and self-tapping screws. The desired load rating is controlled by the spacing between the primary and secondary beam sections and pedestals (Lx, Ly, Lz).

The substructure is self-supporting and independent from floor panel system to prevent 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 160x80x5 mm (6.3x3.15x0.025 inch) primary steel tube sections can span a maximum 2400 mm (94.5 inch) without additional support while supporting a uniform distributed load of 10 kN/m² (205 PSF) and a point load of 3 kN (667 lbs) as a standard. Higher loads can be achieved by changing the internal spacing between the primary and secondary beam sections. Integrated support for transformers or other equipment over 4000 kg (8900 lbs) will be integrated into the floor design using extra primary/secondary beams and pedestals.

1.3 Pedestal

Standard pedestal assembly

The standard pedestal assembly consists of a 60x60x3 mm (2.36x2.36x0.12 inch) square steel tube with bolted head bracket and a foot plate with provisions for height adjustment. The rectangular pedestal base plate shall provide a 153 cm² (23.7 in²) support area. The pedestal tube is cut to required FFH (finished floor height) less 280 mm (11 inches). The pedestal foot plate is bolted on to the pedestal and the head plates are screwed securely to the column with self-tapping screws. The pedestal foot plate is bolted to the concrete subfloor with type Hilti anchors. The pedestals have a vibration-proof leveling mechanism for making and holding fine adjustments in height over a range of +/-

25mm (+/- 1 inch). Pedestals are locked at the selected FFH, so deliberate action is required to change height setting thus preventing vibratory displacement.

2. PERFORMANCE SPECIFICATION

2.1 Detailed Substructure specification

Floor System in General

Gross weight Option 1:	12.4 lbs/ft ² (60 kg/m ²) at FFH 118" or 3000 mm – Standard wood core panel.
Gross weight Option 2:	19.0 lbs/ft ² (92 kg/m ²) at FFH 118" or 3000 mm – Calcium sulfate panel.
Uniform Distributed Load:	205-1025 lbs/ ft ² (10-50 kN/m ²) at standard deflection L/300. (205 psf or 10 kN/m ² at basis of standard design load).
Finished Floor Height (FFH):	79-177 inches (2000-4500 mm).

Specification Steel Substructure

Pedestals:	2.4"x2.4"x0.12" (60x60x3 mm)
Pedestal leveling height:	+/- 1.0" (+/- 25 mm).
Primary Beam Section:	6.3"x3.15"x0.2" (160x80x5 mm).
Secondary Beam Section:	3.15"x1.6"x1/16" (80x40x1.5mm).
Fire Rating:	Non-combustible.
Corrosion Protection:	Hot dipped galvanized, SS-EN ISO 1461. Thickness according to C-class.

2.2 Detailed panel specification

Panel Size (Standard):	24"x24" +/- 0,008" (600x600 mm, +/-0,2 mm) 48"x24" +/- 0,008" (1200x600 mm, +/-0,2 mm)
Panel Weight (Standard):	24"x24", 22,4 lbs (600x600 mm, 10,1 Kg) 48"x24", 44,8 lbs (1200x600 mm, 20,2 Kg)
Panel Thickness (Standard):	1.5" +/- 0,004" (38 mm, +/-0,1 mm)
Panel Weight (Calcium sulfate):	44.4 lbs - 23.6"x23.6" <i>(metric size only)</i> (20 Kg - 600x600 mm)
Panel Weight (Calcium sulfate):	88.8 lbs - 47,2"x23,6" <i>(metric size only)</i> (40 Kg - 1200x600 mm)
Panel Thickness (Calcium):	1,26" +/- 0,004" (32 mm, +/-0,1 mm)

TECHNICAL SPECIFICATION

Concentrated Point Loads: Floor panels, including those with cutouts, can withstand a concentrated design load of minimum 667 lbs (300 kg) with a top-surface deflection under load of 1/8" (3 mm) and a permanent set not to exceed 1/128" (0.2 mm), respectively.

Properties	
Nominal Panel Size in mm and inch	600x600x38 (std.) 23.6x23.6x1,5 inch (Unless other specified)
Fireproof Rating Classification (wood/laminate)	EN 13501-01
Fire Rating	Bfl-s1
Fireproof Rating Classification (wood core with aluminum backing)	ASTE E-84 and NFPA 255
Flame spread index	25 or less
Antistatic Floor Covering (surface to ground)	Between 50kOhm and 10MOhm
Bending strength (MOR)	17.5 N/mm ²
Elasticity (MOE)	2950 N/mm ²
Finished Floor height (FFH) standard	2000-4500 mm (79-177 inches)
Quality assurance	In accordance with ISO 9001 & 14001

2.3 Tolerances and Limits table

Description	Tolerance/Limit
Panel 600x600 mm or 23.6x23.6 inch (Std.)	
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 ² (max.)	According to design, up to 80 kN/m ²

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 of each room.

3. AUXILIARY EQUIPMENT

3.1 Support Section

Additional support under heavy equipment shall be specified and added during the design phase of the floor. If heavy equipment needs to be added after the installation, Bergvik must review and approve the design changes before modifications and equipment installation is done to the floor by the contractor on site.

3.2 Custom panels for Equipment racks

Optional pre-cut custom panels are available to adapt to various equipment vendors and their relay racks, cabinets, power racks etc. in order to facilitate cabling and anchoring. All panels to be bolted down to the steel substructure for security.

3.3 Airflow ventilation panels

Various air grille/ventilation panels with different free open areas and sizes are available for the 2-story HiFlex Floor. All air grille/ventilation panels shall be bolted down to substructure and be flush mounted with the regular floor panels in the amount as shown on the project design drawings.

3.5 Pedestal Mounting clamp

Bergvik's pedestal mounting clamp for cable ladders is an accessory provided to utilize the HiFlex Floor pedestals as a plenum support structure. It is designed to accommodate and fit with the most common cable ladder/tray brackets in the market and specify the amount as shown on the project design drawings.

3.6 Railings

Optional railing including handrail, intermediate rails, posts, brackets, end caps, wall returns, wall and floor flanges, plates and anchor material. Custom made if shown on the design drawings for use in basement.

End of section.