

SOLIDFEEL ACCESS FLOORING

TECHNICAL DATA FILE

SOLIDFEEL ACCESS FLOOR SYSTEMS



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RAISED ACCESS FLOOR SPECIFICATION FOR SOLIDFEEL SYSTEMS

1 GENERAL

1.1 SELECTED SUB-CONTRACTOR

This sub-contract shall be executed by a selected approved sub-contractor, who specialises in the installation of Solidfeel Access Flooring. The sub-contractor will be responsible for the supply and erection of the complete access floor as designed and manufactured by Solidfeel Access Flooring (Pty) Ltd, including supply, execution and installation of all items as detailed in the “Bill of Quantities” and described in Section 2.2 hereunder. The sub-contractor will employ as many trustworthy and experienced engineers, co-ordinators and programmers as may be necessary for the purpose of the sub-contract.

The duties and responsibilities of the sub-contractor’s engineering and management staff will include:

- Selection and engineering of sub-components forming part of the access floor and interface with the air conditioning, electrical, furniture docking, illumination systems and other services.
- Preparation and submission of documentation as detailed in Section 3 hereunder for approval in accordance with the procedures laid down under the section in the “Bill of Quantities” dealing with quality control and approval procedures as laid down by the Architect/Engineer/Consultant.
- Co-ordination, programming and planning of work to fit in with the overall main contractor’s programme.
- Attendance at routine site progress and programming monitoring meetings organised by the Main Contractor.
- Expediting of the sub-contract works and directing the installation staff to ensure efficient, timely, and safe execution of the work to the specified standard.
- Co-operating with main contractor and other trades to ensure such execution.
- Carrying out all duties and responsibilities as described in the “Bill of Quantities”.
- Control and reporting of damages to the installation.

No portion of this sub-contract may be assigned or sub-let without prior consent of the Architect/Engineer/Consultant.

THE SOLIDFEE ACCESS FLOORING SYSTEM

2 THE ACCESS FLOOR SYSTEM

2.1 SYSTEM DESCRIPTION

This specification covers the supply and installation of the Solidfeel raised access floor to finish at a prescribed height above the sub-floor and to the designated Solidfeel specifications as detailed in the Load Performance Table (see Table 1, page 5) and as called for in the “Bill of Quantities”.

The Solidfeel raised access floor installation will consist of 600mm x 600mm modular and interchangeable steel panels, supported by a steel understructure, in accordance with the specification and “Bill of Quantities” herein.

The Solidfeel raised access floor installation will be finished in accordance with the finishes contained herein and in the “Bill of Quantities”.

2.2 COMPONENT SPECIFICATION

2.2.1 Steel Access Floor Panels

The access floor panels are structurally rigid linear cell assemblies fabricated entirely from non-combustible components and shall consist of a flat steel top sheet, resistance welded to steel bottom section. The exterior and interior surface of the access floor panel is protected from corrosion by a process of cleaning, phosphating and coating with conductive paint. The interior of the panel may be filled with non-combustible cementations compound, to support no less than 95% of the top skin or surface of the panel. For a Panel-loc system the access floor panels are provided with four corrosion resistant fasteners. The fasteners hold through the panel and clamp the panel to the heads. The panels are able to be removed by releasing the four fasteners. The panels comply with SABS, CISCA and MOB specifications for raised access floors.

2.2.2 Understructure

The understructure system consists of a galvanised and factory-assembled pedestal base and pedestal head. This assembly is capable of supporting an axial load of 22.2 kN. The maximum depth of the access floor panel excluding covering and the pedestal assembly will exceed 42mm. A corrosion resistant nut is provided which will allow for adjustment of the pedestal assembly over a range of 50mm without rotation of the pedestal head. The nut is prevented from rotating using an anti-rotation and vibration-proof feature.

In a Panel-Loc system, the pedestal head has four threaded holes to accept the panel fasteners, which positively position the pedestal head with the access floor panel.

In a stringer system, the pedestal head is designed to receive snap-on or screw down stringers which, when assembled, provide a completely rigid assembly even when eight abutting access floor panels are removed. Stringers consist of a galvanised steel channel section with a provision for a snap-on attachment to the pedestal. Each stringer is

provided with a conductive or non conductive PVC gasket, to be fitted to top surface of the stringer.

2.2.3 Finishes

The raised access floor can be laminated with a finish as specified in the “Bill of Quantities”.

Carpet tiles as specified in the “Bill of Quantities” can be factory bonded or 600mm x 600mm / 500mm x 500mm loose lay on the access floor panel. A guaranteed precise modularity between the carpet tile and the access floor panel can only be achieved with bonded carpet tiles.

High-pressure laminate of thickness, and colour, as specified in the Bill of Quantities can be factory bonded to the surface of the access floor panel. The laminate can be (either):

- Protected on its edge with PVC edge trim with mitred corners, which shall be factory, fitted to the edge of the panel.
- Bevelled at edge.
- Of integral trim design.

2.3 LOADING PERFORMANCE SPECIFICATION AND TEST METHODS

The class of access floor will be as specified in the Bill of Quantities.

Table 1: Solidfeel access floor systems load performance table and selection guide

SOLIDFEEL ACCESS FLOORING				
LOAD PERFORMANCE TABLES	SOLIDFEEL 20	SOLIDFEEL 25	SOLIDFEEL 45	SOLIDFEEL 70
TYPE OF LOAD				
CONCENTRATED LOAD (on a 25 x 25mm area)	2.9kN	4.5kN	5.6kN	9kN
UNIFORMLY DISTRIBUTED LOADS/m2	9kN	13.5kN	15.6kN	25kN
SAFETY FACTOR	27kN	40.5kN	42kN	N/A
ROLLING LOADS				
200mm x 50mm WHEEL	LOAD 2.05kN	LOAD 2.7kN	LOAD 2.7kN	LOAD 6.8kG
NUMBER OF PASSES	10000	30000	30000	10
150 x 38 mm WHEEL	LOAD 2.7kN	LOAD 3.25kN	LOAD 3.25kN	LOAD 4.5kN
NUMBER OF PASSES	1000	1000	1000	1000
25mm x 75mm WHEEL	LOAD 2.7kN	LOAD 3.6kN	LOAD 4.50kN	LOAD 5.5kN
NUMBER OF PASSES	5	5	5	5
IMPACT LOAD	40kg	55kg	65kg	80kg
PEDESTAL ASSEMBLY				
AXIAL LOAD	22.7kN	22.7kN	22.7kN	22.7kN
PANEL SPECIFICATIONS				
PANEL SIZE	600 x 600	600 x 600	600 x 600	600 x 600
TOP SHEET	0.7mm	0.9mm	1.1mm	2.00mm
BOTTOM SHEET	1.0mm	1.0mm	1.3mm	1.3mm
PANEL MASS	13.68kg	14.27kg	16.37kg	19.84kg
PULL TEST ON PEDESTAL BASE	10kg(installation test)	10kg(installation test)	10kg(installation test)	10kg(installation test)
FIRE TEST	60min(CLASS 1)	60min(CLASS 1)	60min(CLASS 1)	60min(CLASS 1)
PAINT SPECIFICATION				
E-COAT : 20 micron				
ALL STEEL PANELS	SERVERN 50	SERVERN 70	AIRFLOW 50	AIRFLOW 70
PANEL SIZE	600 X 600	600 X 600	600 X 600	600 X 600
TOP SHEET	1.8mm	2.0mm	1.8mm	2.0mm
BOTTOM SHEET	1.4mm	1.8mm	1.4mm	1.8mm
ALL SOLIDFEEL PANELS CAN BE MANUFACTURED TO A TRIM (T) SIZE TO ACCOMMODATE A FACTORY FITTED EDGE BEADING				

Note: The above loading details are shown as a guide only to typical performance and normal application practice. It is recommended, as test and performance requirements vary with National Standards and procedures, that specific test data be obtained.

In order to determine compliance of the access floor system with the Load Performance Table, the following test method is followed:

- The panel, without surface covering, is supported by the specified pedestal heads (and stringers, if applicable). Pedestal heads are mounted on rigid blocks to eliminate distortion of results, which may occur from the isolated use of pedestal base assemblies in test fixture. The blocks rest on a solid test bed.
- Loads are applied to the top surface of the panel. The loads are transmitted to the panel surface by a 25mm x 25mm steel indenter. The panel is loaded at the centre.
- The panel is first loaded to the design load to settle the system. After unloading, a pre-load of 0.25kN is applied and both readouts are to be set at zero. The panel is then to be loaded in 0.50kN increments to the design load and the deflection readings are taken incrementally. The load is then removed from the panel and the 0.25kN pre-load is reapplied to measure set on the dial indicator.

2.3.1 Uniform load test

The panel, without surface coverings, is supported by the specified pedestal heads (and stringers, if applicable). Pedestal heads are mounted on a rigid block to eliminate distortion of results, which may occur from the isolated use of pedestal base assemblies in the test fixture. The blocks rest on a solid test bed.

The load is applied uniformly over the top of the panel as follows:

- Indicators are positioned on the underside of the panel to measure the deflections under load at the centre and at the mid-span of the edge.
- The panel is first loaded to the design load to settle the system. After removing the load, a pre-load of 0.25kN is applied and the indicators are then set at zero. The panel is then to be loaded in 0.25kN increments to design load and the deflection readings are taken incrementally. The load is then removed from the panel and the 0.25kN pre-load is then reapplied to measure the permanent set on the measuring instrument.

2.3.2 Rolling load test

Three abutted panels, without surface coverings, are supported by the specified pedestal heads (and stringers, if applicable). The pedestal heads are mounted to a rigid rolling load fixture to eliminate distortion of results, which may occur through the isolated use of pedestal base assembled in the test fixture.

The specified wheel or castor is mounted in the fixture and loaded to the specified weight.

The wheel is then rolled over the panel surface from the first panel across the full length of the test panel to the third panel along the centre line of the panels, and along a line, which is 50mm from the panel edges. For each of these two test locations, new sets of panels are used.

After completion of the rolling loads, the maximum permanent set of the surface is measured.

2.4 COMPONENTS AND SYSTEM TOLERANCES AND LIMITS

The access floor components and installed access floor system will conform to the tolerances and limits table below.

Table 2: Tolerances and Limits

DESCRIPTION	TOLERANCE / LIMIT
<i>Panel size</i>	600mm x 600mm (Nominal)
Panel squareness	± 0.50mm
<i>Panel flatness</i>	± 0.50mm
<i>Installed access floor level</i>	1.50mm in 3.00m
	2.50mm over entire floor
<i>Variation in height between adjoining panels</i>	0.50mm
<i>Maximum depth</i>	42mm
<i>Maximum panel mass</i>	20 Kgs
<i>Maximum panel mass (Without surface covering)</i>	56Kg per m ²

NOTE: All tolerances to be after painting and/or galvanising

The finished floor system will be free of exposed metal edges. The completed floor system will be sturdy, rigid, firm and free of vibration, rocking panels, rattles, squeaks and other noises to render a quiet, aesthetically pleasing floor.

2.5 GENERAL PERFORMANCE SPECIFICATION

2.5.1 Electrical Receptivity and conductivity

For computer rooms the resistance between the surface of the panel of the access floor panel and earth is between 5×10^5 and 2×10^{10} Ohms measured at 22 to 25 degrees Celsius and 25% to 65% relative humidity (after the room has been stabilised at these levels for 48 hours).

For all raised access floors the entire system will be electrically conductive to allow for grounding at a later date, if required.

2.5.2 Fire resistance and tests

All components of the access floor system are non-combustible when tested in accordance with SABS 0177 part V and SABS 1549 and the completed installation will

comply with the requirements of the National Building Regulations and Building Act of 1977 (as amended) where applicable.

2.5.3 Compliance with codes and laws

The construction of the raised access floor system and the materials and components used therein will comply with all local codes and laws regarding fire, safety and health.

2.5.4 Pedestal base adhesive

All pedestal bases must be adhered to the sub-floor. The adhesive shall be conductive, waterproof and non-soluble when cured. The pedestal and the adhesive will be capable of resisting a horizontal force of 10kg applied at a height of 300mm from the sub-floor when the adhesive has cured.

2.5.5 Plenum dividers

Plenum dividers are manufactured standard steel dividers. They will comply with the requirements of the local fire authorities.

2.5.6 Panel lifting device

Manufacturer's standard for panel type, as specified in the "Bill of Quantities".

2.5.7 Special panels

Panels (with airflow services) will be installed by the air conditioning sub-contractor in the access floor system on site under the supervision of the access floor sub-contractor. Similarly, panels with electrical services will be installed by the electrical sub-contractor. However, the access floor sub-contractor shall be responsible for the final fixing and levelling of these panels (with services) and ensuring that panels are installed in accordance with the sub-contract documents. Loading specification of floor fittings will be supplied by the manufacturers of the fittings.

SUBMISSION OF DOCUMENTATION

3 SUBMISSION OF DOCUMENTATION BY SUB-CONTRACTOR

The successful sub-contractors must submit the following information and documentation within six months after adjudication of the tender or by negotiation:

- Certificates from approved testing laboratory, showing compliance with SABS 1549-1992 incorporating the requirements of the Load Performance Table set out in table I.
- Systems and components data sheet fully describing and specifying the performance of components and the overall system.
- Certificates from approved testing laboratory, showing compliance with SABS 1549-1992 with regard to the results of fire tests.
- Quality Assurance-A statement of compliance that:
 - The quality management system for floors manufactured in South Africa shall be in accordance with the South African Bureau of Standards Code of Practice for Quality Management Systems ISO 9002, and SABS 1549-1992.
- A manual detailing installation, care and maintenance procedures.

3.1 SOLIDFEEL PANELS

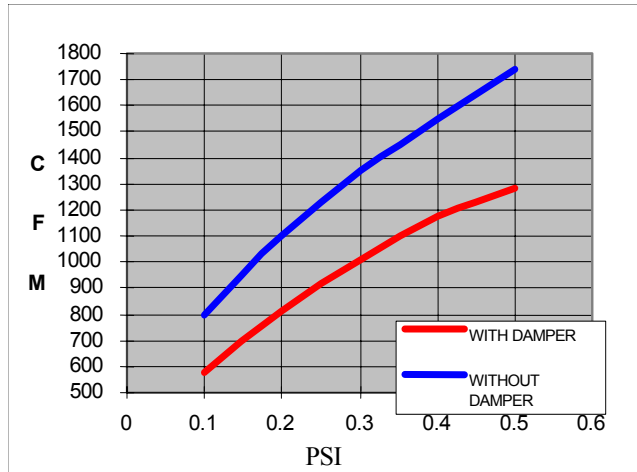
	SF 20	SF 25	SF 45/*SF 70
APPLICATION	2.7kN concentrated load (SABS class A) General office and computer room use where rolling equipment and traffic loads are of normal usage.	4.5kN concentrated load (SABS class B). Designed for general office and computer room use where rolling equipment and traffic loads are of normal to medium usage.	5.5/*9.0 kN concentrated load (SABS class C). Designed for general office and computer room use where rolling equipment and traffic loads are of heavy usage.
COVERING OPTIONS	<ul style="list-style-type: none"> • Factory applied hard coverings • Factory applied carpet • Loose lay carpet 	<ul style="list-style-type: none"> • Factory applied hard coverings • Factory applied carpet • Loose lay carpet 	<ul style="list-style-type: none"> • Factory applied hard coverings • Factory applied carpet • Loose lay carpet
UNDERSTRUCTURE	<ul style="list-style-type: none"> • Snap-loc • Snap-loc screw down • Free Standing • Panel Loc • Low Loc • Note: Panel loc and Loc systems are not available with USF20T 	<ul style="list-style-type: none"> • Snap-loc • Snap-loc screw down • Free Standing • Panel Loc • Low Loc • Note: Panel loc and Loc systems are not available with USF45T 	<ul style="list-style-type: none"> • Snap-loc • Snap-loc screw down • Free Standing • Panel Loc • Low Loc • Note: Panel loc and Loc systems are not available with USF70T
POINT LOADS	2.7kN on an area of 625 square mm with a maximum deflection of 2mm on the top skin and a permanent set not to exceed 0.25mm on the top surface.	4.5kN on an area of 625 square mm with a maximum deflection of 2mm on the top skin and a permanent set not to exceed 0.25mm on the top surface.	5.5/*9.0 kN on an area of 625 square mm with a maximum deflection of 2mm on the top skin and a permanent set not to exceed 0.25mm on the top surface.
DISTRIBUTED LOAD	7.20 kN/m ²	12.0 kN/m ²	14.0/*25 kN/m ²
ROLLING LOADS	2.7kN for 1000 cycles (2000 passes) though a 150 diameter x 38mm wide wheel	3.25kN for 1000 cycles (2000 passes) though a 150 diameter x 38mm wheel	4.5kN for 1000 cycles (2000 passes) though a 150 diameter x 38mm wheel
ACCIDENTIAL IMPACT LOADS	30kg dropped from a height of 300mm onto a area of 625 square mm (25mm x 25mm)	40kg dropped from a height of 300mm onto a area of 625 square mm (25mm x 25mm)	50kg dropped from a height of 300mm onto a area of 625 square mm (25mm x 25mm)
SPECIFICATIONS	<p>A. The Access floor system shall consist of 600x600mm removable panels supported by the preferred UNDERSTRUCTURE system.</p> <p>B. Panels shall be square, to allow 100% interchange ability, and shall be removable with an appropriate lifting tool.</p> <p>C. The floor panel shall be capable of supporting each design load with a minimum safety factor of 3 at the weakest point of the panel, based on ultimate strength of the material.</p> <p>D. Panel shall be chemically cleaned and coated with a conductive paint to minimise electrical resistance between panel and pedestal.</p>		

3.2 AIRFLO PERFORATED PANELS

	SEVERN 50	SEVERN 70
APPLICATION	Models 50 perforated panels are designed for normal computer room use.	Models 70 perforated panels are designed for use in computer room areas where heavy equipment and rolling loads exist.
COVERING OPTIONS	<ul style="list-style-type: none"> • Factory applied hard coverings with bevelled edge and suitable perforation. 	<ul style="list-style-type: none"> • Factory applied hard coverings with bevelled edge and suitable perforation.
UNDERSTRUCTURE	<ul style="list-style-type: none"> • Snap-loc • FFH and adjustment ranges are dependant on the pedestal construction. 	<ul style="list-style-type: none"> • Snap-loc • FFH and adjustment ranges are dependant on the pedestal construction.
SPECIFICATIONS	<p>A. The 600x600 access floor panels shall be of all steel construction and consist of a bottom pan design precision formed with a uniform pattern of circular pockets. The die cut steel top plate is welded to this bottom pan and forms a strong and rigid unitised assembly that reduces deflection anywhere on the panel.</p> <p>B. Panels shall be square, to allow 100% interchange ability, and shall be removable with an appropriate lifting tool.</p> <p>C. Panels tested with HPL covering over an area of 625mm² are capable of the following: Load: 4,5kN. Deflection (bottom skin): 3,7mm. Permanent set: 0,35mm.</p> <p>D. Panel assembly shall be chemically cleaned and immersion-coated with a conductive paint to minimise electrical resistance between panel and pedestal.</p> <p>E. This panel is designed for high volume airflow. The perforated hole size is 6,5mm diameter (2784 holes per panel). The free area is 0,09m² and air performance is from 260 to 600 litres per second with static pressure from 25 Pa to 125 Pa.</p>	

3.3 AIRFLOW STEEL PANELS

Airflow panels provide means for distribution of air for heating, cooling or ventilating. Airflow panels are interchangeable with standard Solidfeel panels and are covered with high-pressure laminate. Additionally, these panels will structurally withstand a 450kg-concentrated load without the need of additional pedestal supports or supplemental bracing.



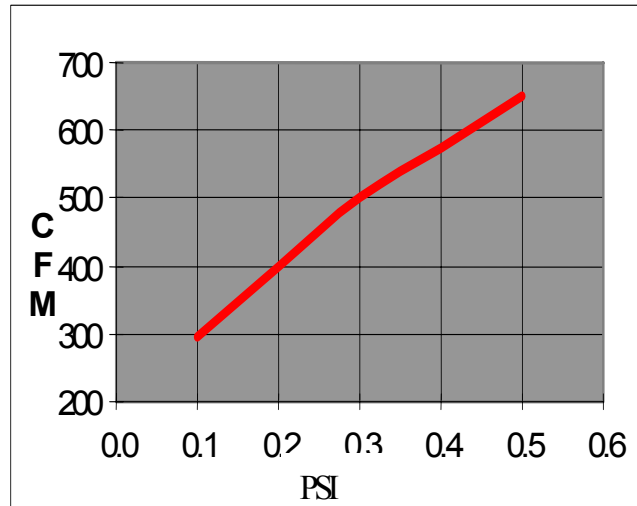
Static Pressure
AIR FLOW THRU AIRFLOW PANEL

3.4 AIR GRILLE

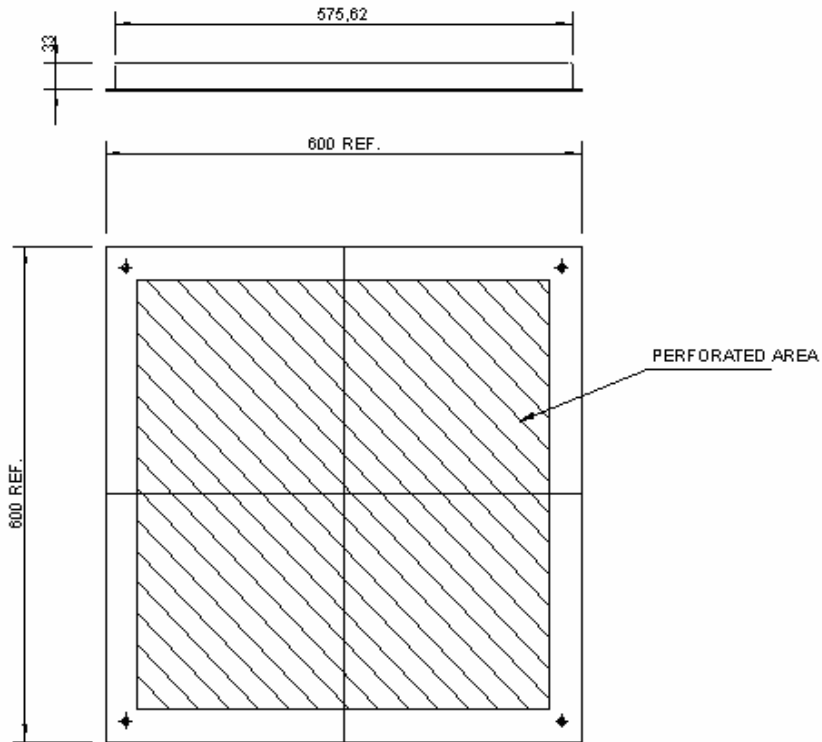
Grilles are fabricated from extruded aluminium with mill finish and structurally welded to maintain strength required for usage with access floor system.

Standard size grille is 150mm x 450mm. Other sizes available upon request. Additional pedestal supports are required to strengthen cut air-grille panels.

Optional dampers with manual operation are fabricated with extruded aluminium and galvanised steel using mechanical fasteners for assembly and attachment to grille.



Static Pressure
AIR FLOW THRU GRILLE



MATERIAL: STEEL
 SIZE: 600mm x 600mm
 SCALE: N.T.S.

DESCRIPTION:

SEVERN PERFORATED PANEL 600 x 600



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THE SOLIDFEE ACCESS FLOORING SUPPORT SYSTEMS

4 SOLIDFEEL SUPPORT SYSTEMS

4.1 PEDESTAL

- BASE PLATE - ELECTRO GALVANISED STEEL
 - Dimension - 100x100mm
 - Thickness - 1,8mm

- TUBE - ELECTRO GALVANISED STEEL
 - Outside diameter - 25mm
 - Wall thickness - 1,6mm
 - Length - depends on floor height

- TUBE - ELECTRO GALVANISED STEEL
 - Outside diameter - 20,9mm
 - Wall thickness - 2,6mm
 - Length - 100mm nominal

4.2 HEAD

- PANEL LOC & LOW LOC DRAWN QUALITY ELECTRO GALVANISED STEEL
 - Material type - drawn quality electro galvanised steel
 - Material thickness - 2,5mm
 - Dimensions - 76mmx76mm nominal
 - Holes to suit panel loc screw

- SNAP LOC & FREESTANDING - ALUMINIUM COMPOSITION
 - Material type - cast aluminium
 - Material thickness - 2,5mm
 - Dimension - 76mm x 76mm nominal

4.3 SHROUD

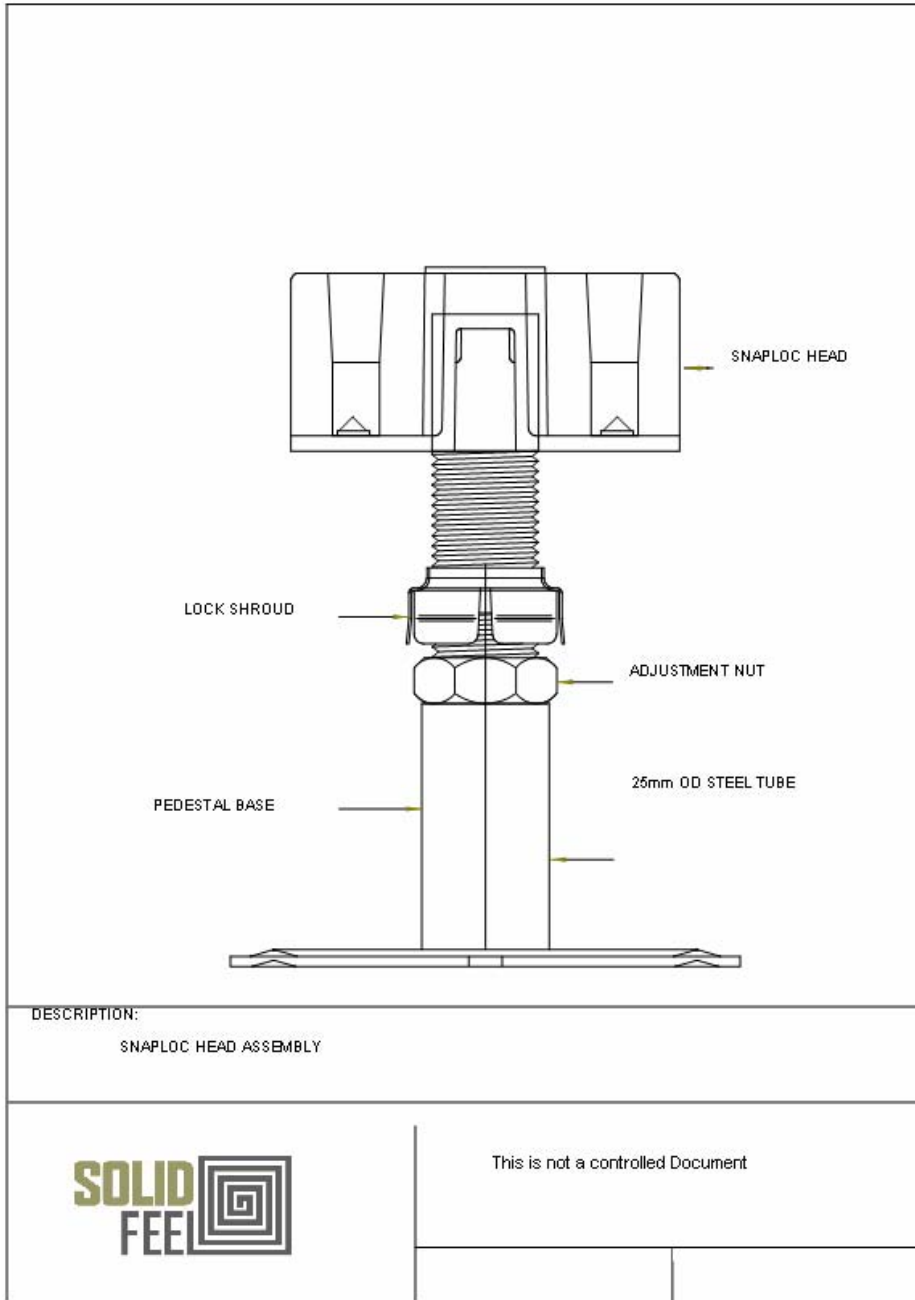
- Material type - hot dipped galvanised steel
- Material thickness - 0,6mm
- Dimensions to suit nut

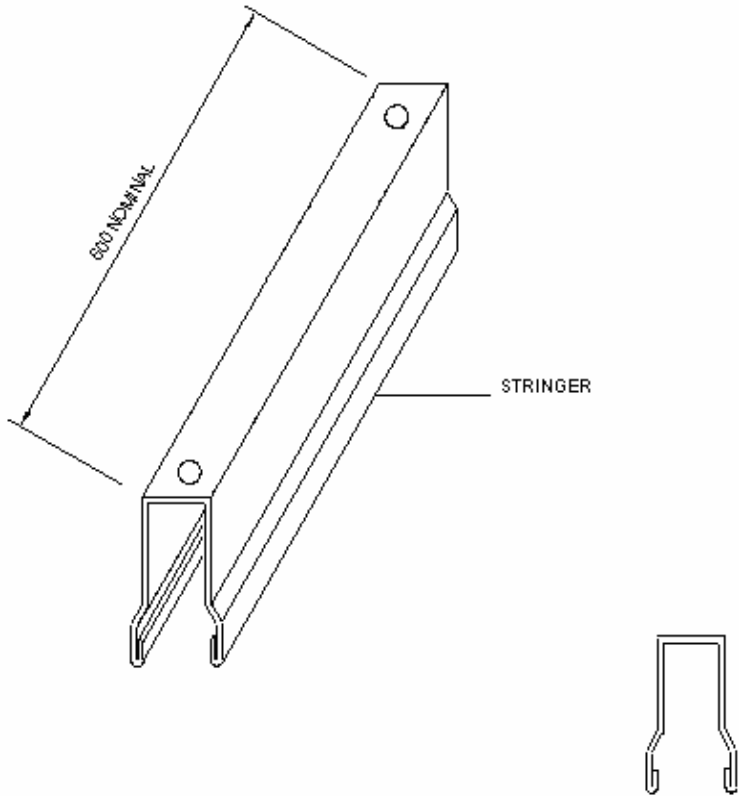
4.4 NUT

- Material type - electro galvanised steel
- Depth - 9,5mm

ACCESS FLOORING ACCESSORIES

5 ACCESSORIES



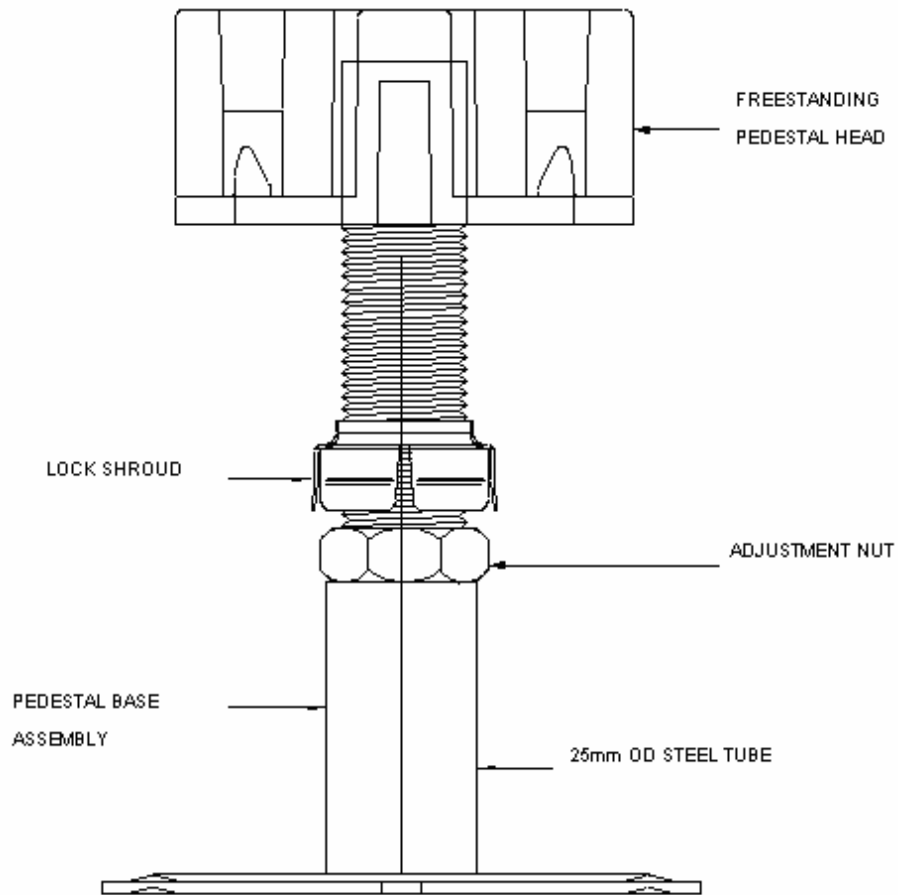


DESCRIPTION:
STRINGER



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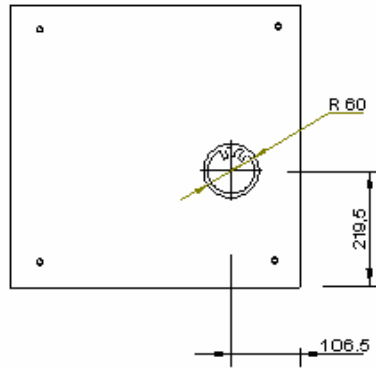
DESCRIPTION:

FREESTANDING PEDESTAL HEAD ASSEMBLY



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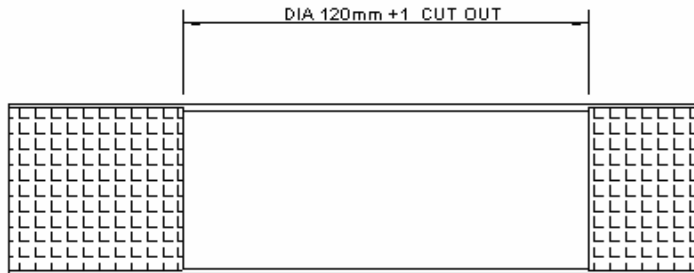
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PLAN VIEW

Ø120 HOLE LOCATION IN SOLIDFEEL PANEL FOR STANDAR
GOMMIT FIXING.

CEMENTITIOUS FILL



SECTION THROUGH HOLE

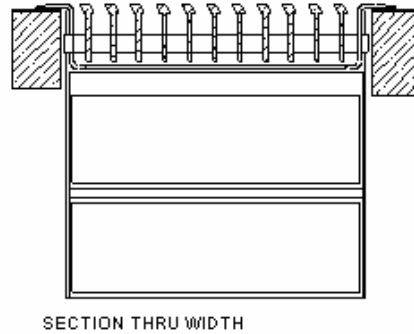
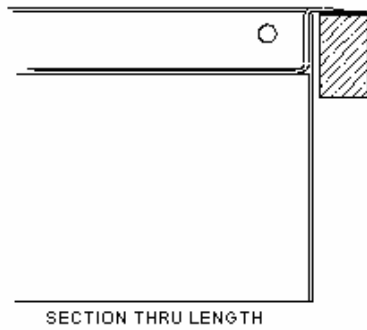
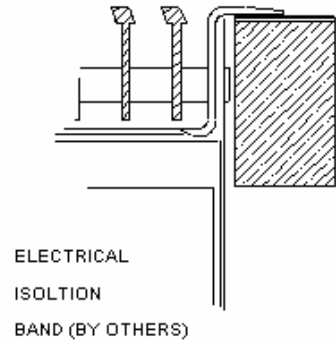
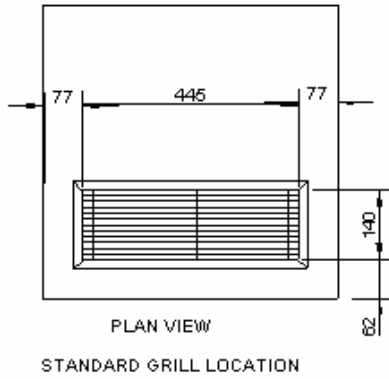
DESCRIPTION:

120mm Ø HOLE IN CEMENT FILLED PANEL



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NOTES:

1. GRILLES ARE NOMINAL 140x450 EXTRUDED ALUMINUM WITH BRUSHED SATIN FINISH AND OPERATED DAMPER. (OPTIONAL WITHOUT DAMPER)
2. ALL GRILLES MUST BE ELECTRICALLY ISOLATED.
3. THERE IS NO MEASURABLE DIFFERENCE IN AIR FLOW WITH OR WITHOUT DAMPER.

DESCRIPTION:

STANDARD GRILLE 140mm x 450mm



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