wHOLE.Protect

EXCELLENCE IN SAFETY

PRODUCT INFORMATION & TECHNICAL SPECIFICATIONS

Protect every void...
avoid every injury.

Supplied and installed by
Composite Profiles
BUILDING EXCELLENCE
01202 659 237 | sales@wholeprotect.co.uk

Whether you are looking for **PRODUCT INFORMATION, LOADING CAPACITIES** or researching **DESIGN RISK MANAGEMENT**, we've got the answers here.
Or contact us directly 01202 659 237
sales@wholeprotect.co.uk

wHOLE.**Protect**

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wHOLE.**Protect**

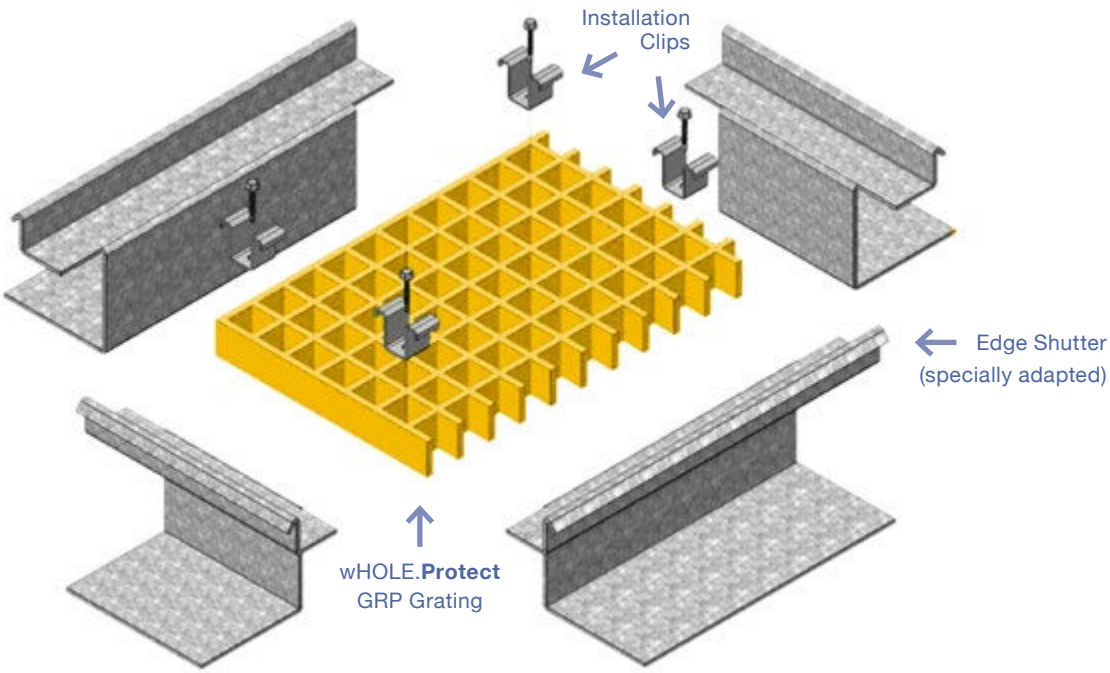
WHY USE wHOLE.Protect?

The wHOLE.**Protect** Void Protection System is a modern, cleaner and efficient replacement to the older and more traditional methods of void protection.

wHOLE.**Protect** combines the benefits of anti-slip GRP moulded grating with bespoke, specially adapted edge trim, to cover voids in the decking and provide a safer working platform. It replaces the need to install fiddly handrail and scaffolding systems, which are time consuming and restrict movement around the deck. This simple system is faster and cheaper to install and advances operational efficiencies and site safety for all tradespeople.

Read on, to find out why you should be discussing your void protection solutions with your decking specialists early in the deck design.

THE WHOLE.PROTECT VOID PROTECTION SYSTEM



THE BENEFITS

DURABLE
Maintenance-free.

SEAMLESS INSTALL
Reduces interface between trades.

PERMANENCE
Used as temporary or permanent fix alongside services.

STRENGTH
Can withstand tough environments.

FALL PROTECTION
Protects against falls and reduces the risk of falling debris.

ADAPTABLE
Suitable for use in a variety of scenarios.

LIGHTWEIGHT & SLIP SAFE
GRP mesh grit material.

MODIFIABLE
Can be cut to suit irregular void shapes.

SAFE
Fire retardant and chemical resistant.

NON-PENETRABLE
Non-conductive and impact resistant.

SAFETY EXCELLENCE

PARALLAX STRUCTURES

The wHOLE.**Protect** Void Protection System has been independently tested and approved by Parallax Structures (Mar 2021) in accordance with:

- **BS EN 1993-1-3:2006 Eurocode 3 – Design of steel structures. Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting.**
- **UK National Annex to Eurocode 3: Design of steel structures.**

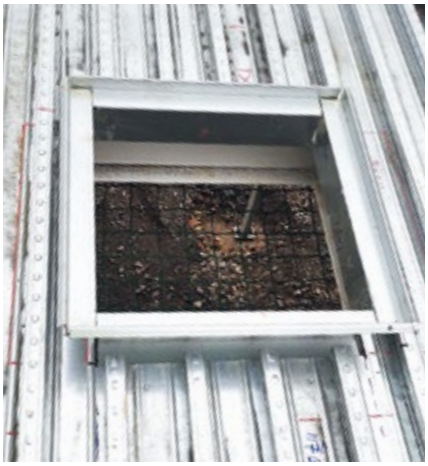
FASET
Fall Arrest Safety Equipment Training

FASET (Fall Arrest Safety Equipment Training) is the established trade association and training body for the temporary safety systems industry.

- **www.wholeprotect.co.uk/faset-certification**

According to FASET research, **falls from height are still the leading cause of death in the workplace**. FASET members undergo a rigorous audit accredited by SSiP and mutually recognised with other health and safety assessment schemes.

FASET membership is a symbol of trust and ensuring complete peace of mind when choosing contractors.



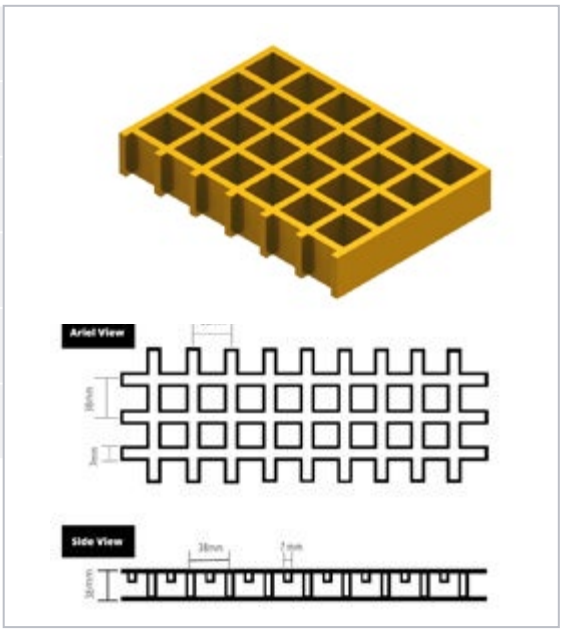
wHOLE.Protect is brought to you by Composite Profiles UK, a member of FASET awarded highly commended in 2021.

2. PRODUCT PROFILES

WHOLE.PROTECT STANDARD

The 38mm² grate covers the voids to improve safety for people on site, and to prevent larger potentially dangerous debris from falling through onto lower levels.

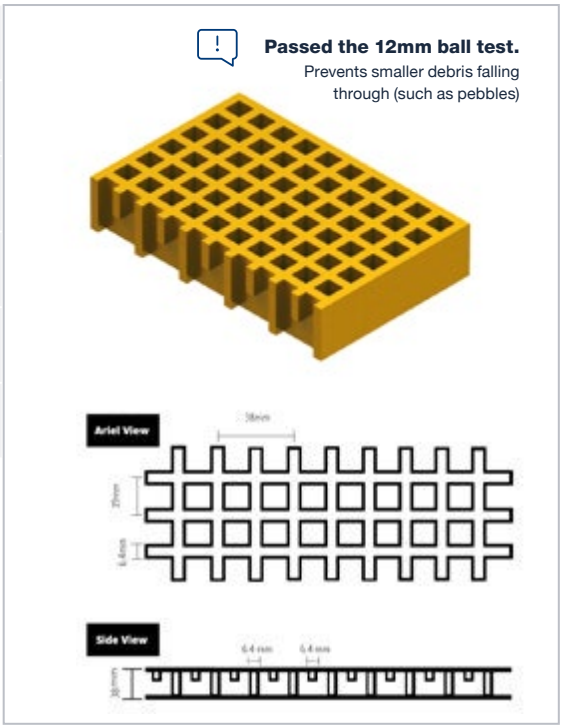
Product Name	wHOLE.**Protect Standard**
Product ID	**WP04SD**
Depth	38mm
Mesh	38mm²
Weight	19.5kg per m²
Surface covered	29%



WHOLE.PROTECT MICRO

With an even smaller grate of 19mm², the wHOLE.**Protect Micro** passed the 12mm ball-bearing test assuring that even the smallest pieces of debris are prevented from falling onto the deck below, whilst still being large enough to allow for cables and air flow.

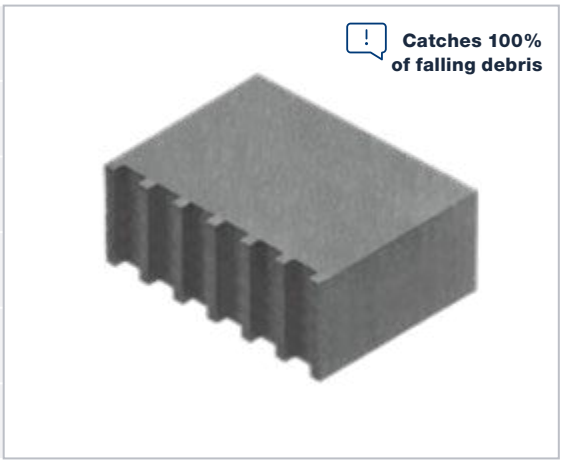
Product Name	wHOLE.**Protect Micro**
Product ID	**WP11MC**
Depth	38mm
Mesh	19mm²
Weight	23.5kg per m²
Surface covered	58%



WHOLE.PROTECT SOLID

Want total peace of mind? Our wHOLE.**Protect Solid** offers complete protection – allowing you to protect every void, and avoid every injury.

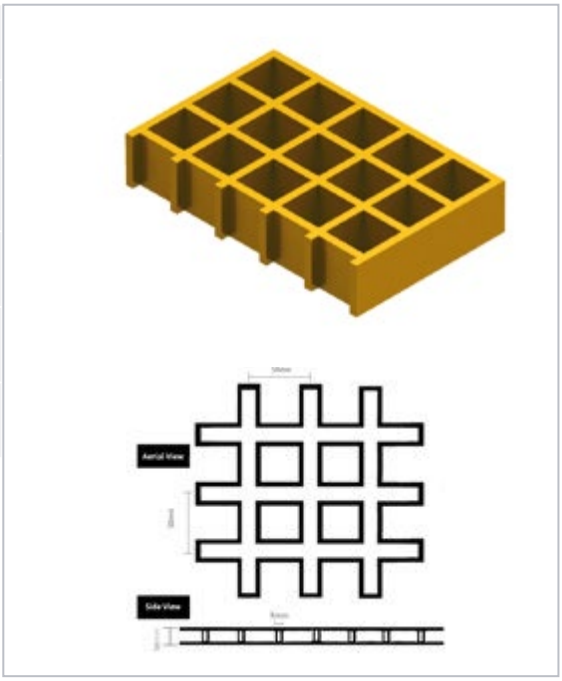
Product Name	wHOLE.**Protect Solid**
Product ID	**WP04ST**
Depth	41mm
Mesh	Solid. Catches 100% of falling debris
Weight	22kg per m^2
Surface covered	100%



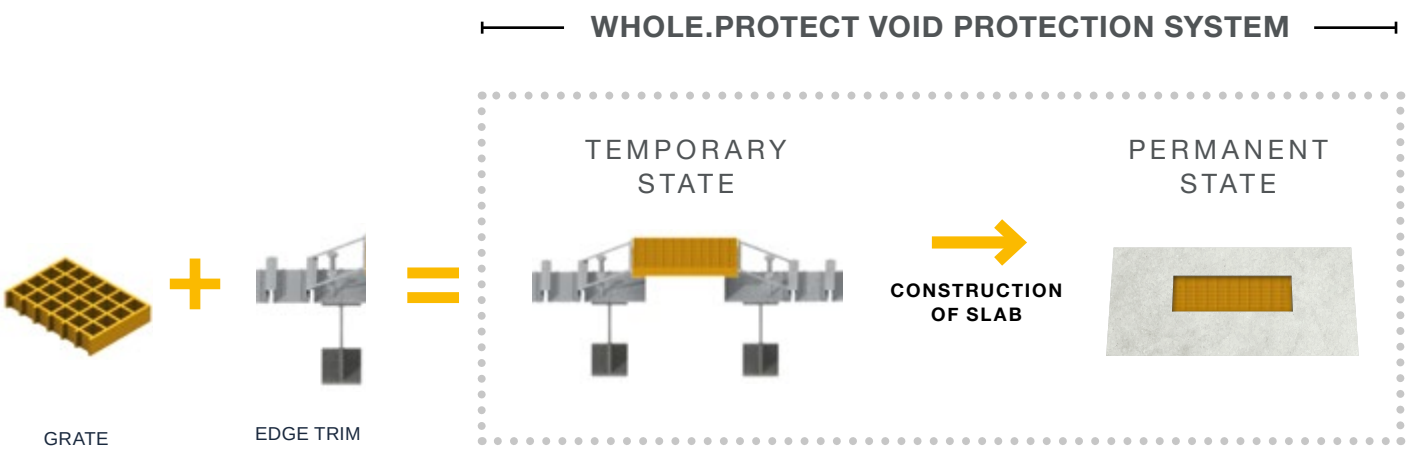
WHOLE.PROTECT MAXI

The wHOLE.**Protect Maxi** is a deeper profile which provides added strength across longer spans saving on steel costs and providing flexibility for applications.

Product Name	wHOLE.**Protect Maxi**
Product ID	**WP05MX**
Depth	50mm (60mm an option - call to discuss)
Mesh	50mm^2
Weight	23.5kg per m^2
Surface covered	29%



3. TECHNICAL DATA & STRUCTURAL CALCULATIONS

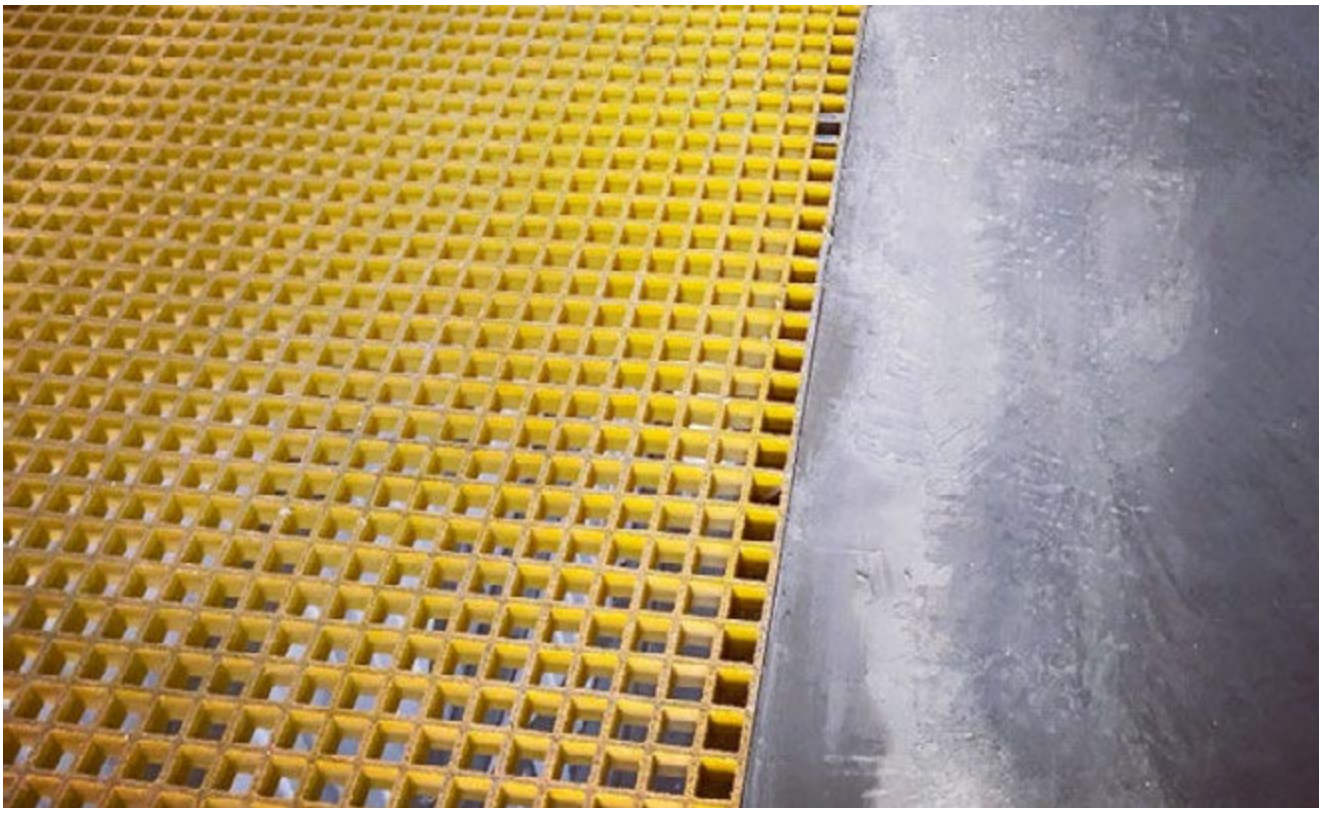


PERMANENT STATE

WHOLE.PROTECT SYSTEM - AFTER CONCRETE

After the concrete slab is cast, the supporting ledge created by the edge shutter permanently supports the GRP grating.

Please note - The design of the concrete slab and supporting structure is to be undertaken by a third party.



LOAD CAPACITIES - PERMANENT STATE

Loading calculations have been conducted by an independent third party.

UNIFORMED LOAD CAPACITY (KG/M²)

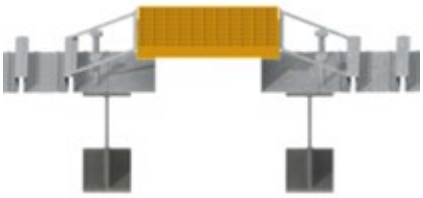
	Product Name	Type	Mesh Size	Grating Depth	300mm Span	450mm Span	600mm Span	750mm Span	900mm Span	1000mm Span	1200mm Span
	wHOLE.**Protect Standard**	WP04SD	38mm x 38mm	38mm	23,132	6,790	2,825	1,404	859	605	390
	wHOLE.**Protect Micro**	WP11MC	19mm x 19mm	38mm	24,643	7,130	2,966	1,475	902	636	410
	wHOLE.**Protect Solid**	WP04ST	Solid top (38mm² mesh core)	41mm	23,132	6,790	2,825	1,404	859	605	390
	wHOLE.**Protect Maxi**	WP05MX	50mm x 50mm	50mm	48,800	15,485	6,800	3,425	2,100	1,510	850

CONCENTRATE LOAD CAPACITY (KG)

	Product Name	Type	Mesh Size	Grating Depth	300mm Span	450mm Span	600mm Span	750mm Span	900mm Span	1000mm Span	1200mm Span
	wHOLE.**Protect Standard**	WP04SD	38mm x 38mm	38mm	1,455	1,020	725	521	430	317	275
	wHOLE.**Protect Micro**	WP11MC	19mm x 19mm	38mm	1,530	1,070	762	547	455	333	290
	wHOLE.**Protect Solid**	WP04ST	Solid top (38mm² mesh core)	41mm	1,455	1,020	725	521	430	317	275
	wHOLE.**Protect Maxi**	WP05MX	50mm x 50mm	50mm	3,400	1,862	1,180	803	568	460	324

Please note:

- *These figures are based on a deflection length of 0.75% of the span (BS Standard). For example, 734kg on a 300mm span will deflect at 2.4mm - (300/125).*
- *The load tables above show maximum clear spans for various loading example/requirements in accordance with BS 4592-2006. For pedestrian traffic, the deflection of a floor panel under the design load shall not exceed 10mm or 1/200 of the span - whichever is the lesser. The difference in level between a loaded and a neighbouring un-loaded panel shall not exceed 4mm.*
- *These figures cannot be guaranteed as they were taken in a test environment and cannot factor in other operational conditions.*



TEMPORARY STATE

WHOLE.PROTECT WITH EDGE TRIM

The wHOLE.**Protect** system in its temporary state has undergone independent structural engineer testing* by Parallax Structures to ensure suitability for pre- slab construction.

LOAD CAPACITIES - TEMPORARY STATE

UNIFORM LOAD CAPACITY (KG/M²)

Product Name	Type	Mesh Size	Grating Depth	1200mm Span
wHOLE.**Protect** Standard	WP04SD	38mm x 38mm	38mm	152.96

The uniform distributed load capacity of wHOLE.**Protect** prior to concrete is 1.5kN/m² with a maximum single span of 1200mm. It can be safely used as a working platform comparable to the composite metal deck in its temporary state.

CONCENTRATE LOAD CAPACITY (KG)

Product Name	Type	Mesh Size	Grating Depth	1200mm Span
wHOLE.**Protect** Standard	WP04SD	38mm x 38mm	38mm	91.77

The maximum concentrated load that can be applied to the wHOLE.**Protect** system directly above the point of support on the edge trim is 0.9kN.

** Please note: these figures cannot be guaranteed as they were taken in a test environment and cannot factor in other operational conditions.*

WHOLE.PROTECT EDGE TRIM SELECTOR

Edge trim depth	Galv. steel edge trim thickness (mm)		
	1.2	1.6	2.0
	Maximum cantilever (mm)		
130	100	x	195
150	50	100	185
200	50	100	160
250	50	x	135
300	x	50	100
350	x	x	50

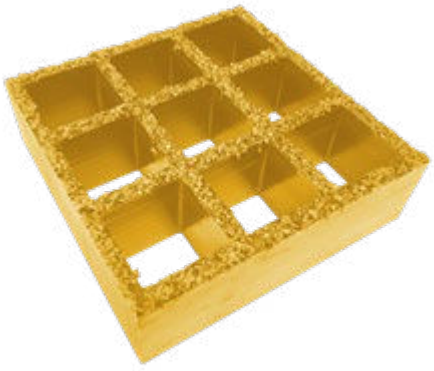
x - Not recommended

EDGE TRIM CONSTRAINTS:

- Minimum basic yield strength, 280 N/mm^2.
- An absolute minimum 1.2mm material thickness to be used.
- The edge trim and restraint straps must be fixed to the composite deck or primary steel structure in accordance with TATA requirements.
- In the event that the edge trim becomes damaged during construction, the GRP grating should NOT be loaded and the damaged edge trim section is to be replaced prior to further loading of the GRP grating.
- Edge trim is to be restrained at 600mm centres along its length in accordance with TATA ComFlor requirements.
- Edge trims to have a minimum 50mm bearing beyond the deck recess to receive the GRP grating and the trim is to be fixed to the top of the steel members in the same manner as the decking and restrained by the restraint straps @ 600 c/c. The design of these fixings is outside the scope of these calculations.
- The analysis and calculations assume continuity of the edge trim where fixed to the beams and the edge trim is designed based on the maximum moments for plastic failure.
- Consider 1m width of edge trim with load distributed evenly along length via GRP grid. Grating to have 55mm bearing with load applied centrally through bearing of GRP.

SPANNING CAPABILITIES

- GRP grating has a maximum span of 1200mm on the short span before supports are required. We can accommodate almost any length with adaptations. Please speak with us to discuss your requirements.



ORIGINAL STATE

WHOLE.PROTECT GRATE ONLY

The wHOLE.**Protect** Void Protection System uses high performance GRP (glass reinforced plastic) grating panels.

SLIP RESISTANT GRP GRIT TOP GRATING:

wHOLE.**Protect** products are made as a single mould of cross-threaded GRP (glass reinforced plastic) with a grit coating making it super strong, durable and slip resistant.

Standard GRP Grit Top	
Dry Reading	69
Wet Reading	65

Measured using the Pendulum test method (WF rubber slider)

The UK Slip Resistance Group guide to slip resistance of a floor for able bodied pedestrians:

Four S Pendulum Value	Potential for Slip
Above 65	Extremely Low
35 to 65	Low
25 to 35	Moderate
25 and Below	High

**To ensure that the above slip resistance levels are maintained, the panels should be kept clean.*

PRODUCT INFORMATION TABLE

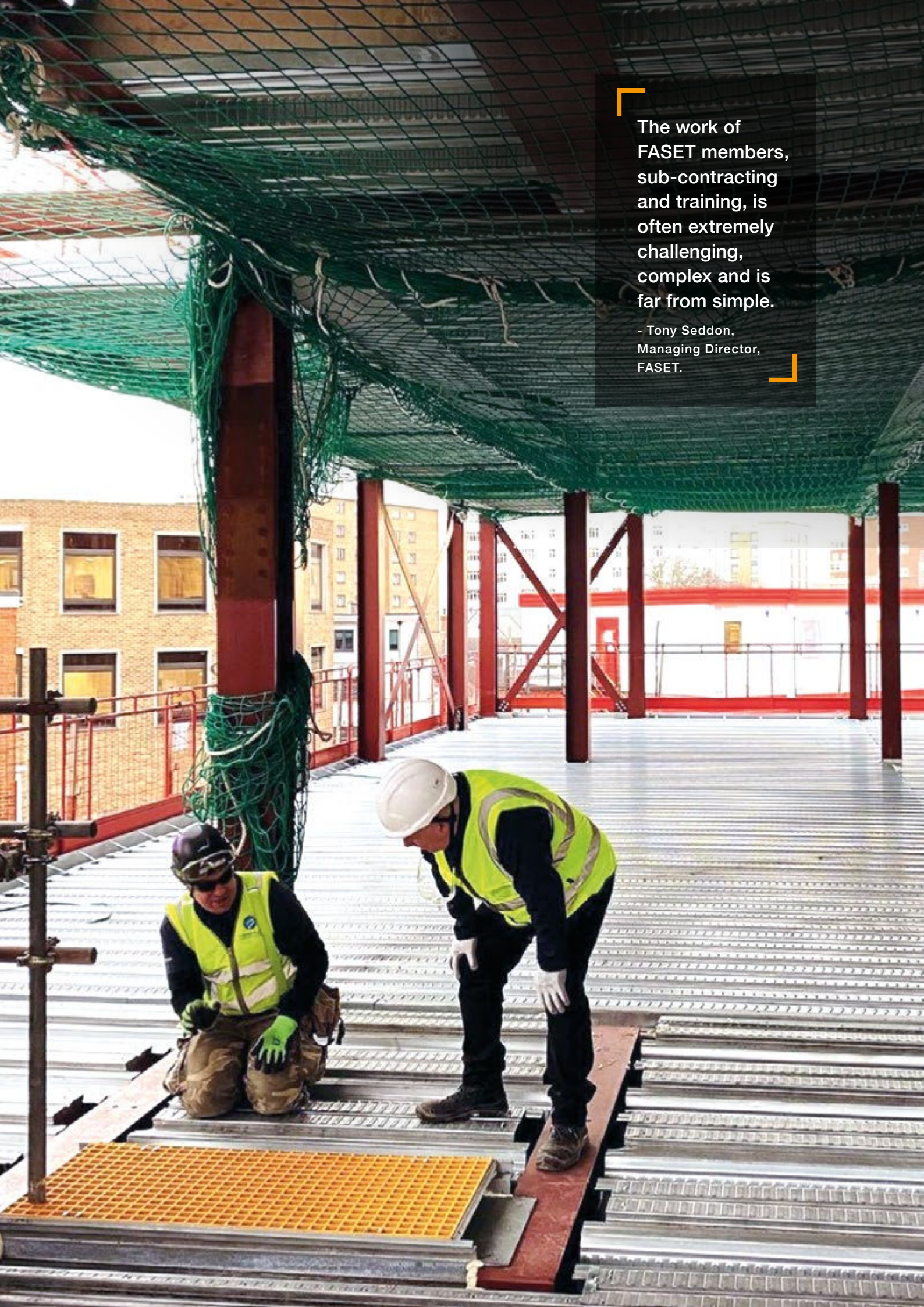
Description:	High performance composite grating system
Top finish:	Standard GRP Mesh Grit Top
Slip Resistance Values	Dry Reading - 69 Wet Reading - 65
Stock colours:	Yellow (any RAL or BS colour subject to extended lead time)
Thickness:	38mm, 41mm (38mm + 3mm), 50mm
Maximum panel sizes, dependent on grating type:	3660mm x 1220mm 3010mm x 996mm 1985mm x 996mm
Mesh patterns:	Grid 19mm^2, 38mm^2, 50mm^2
Chemical resistance:	Made from Iso resin as standard. Different chemical resistance available, please refer to the list below.
Tolerances (including cut):	+/- 7mm width, length and diagonal
Depth tolerances:	+/- 1.5mm
Service temperatures:	-50 to 105°C
Design life:	25+ years (subject to traffic analysis)
General use:	Standard pedestrian traffic
Standards: Fire:	Tested to BS 476: Part 7: 1997 Class 2

CHEMICAL RESISTANCES TABLE

Chemical	Iso concentration (%)	Temperature F/°C
Acetic Acid	50	125/52
Ammonium Hydroxide	100	160/71
Ammonium Chloride	All	170/77
Ammonium Bicarbonate	15	125/52
Ammonium Sulfate	All	170/77
Benzene	All	N/R
Benzoic Acid	SAT	150/66
Borax	SAT	170/77
Calcium Carbonate	All	170/77
Calcium Nitrate	All	180/82
Carbon Tetrachloride	1000	N/R
Chlorine Water	SAT	80/27
Citric Acid	All	170/77
Copper Chloride	All	170/77
Copper Cyanide	All	170/77
Copper Nitrate	All	170/77
Ferric Chloride	All	170/77
Ferrous Chloride	All	170/77
Formaldehyde	50	75/24
Gasoline	100	80/27
Glucose	100	170/77
Glycerin	100	150/66
Lithium Choride	SAT	150/66
Magnesium Chloride	All	170/66
Magnesium Nitrate	All	140/60
Magnesium Sulfate	All	170/77
Mercuric Chloride	100	150/66
Mercurous Chloride	All	140/50
Nickel Chloride	All	170/77
Nickel Sulfate	All	170/77
Nitric Acid	20	70/21
Oxalic Acid	All	75/24
Potassium Chloride	All	170/77
Potassium Dichromate	All	170/77
Potassium Nitrate	All	170/77
Potassium Sulfate	All	170/77
Propylene Glycol	All	170/77
Sodium Cyanide	All	170/77
Sodium Nitrate	All	170/77
Sodium Chloride	All	160/71
Vinegar	100	170/77
Zinc Nitrate	All	170/77

ALL = All concentrations
N/R = Not Recommended
SAT = Saturated Solution

The corrosion resistance data listed above is for general information only. Resin manufacturers have provided test data which indicates that the specific resin can withstand the corrosion conditions listed above. wHOLE.**Protect** believes the data to be true and accurate but no guarantee is expressed or implied as to specific performance. Testing for specific environments is recommended. Our responsibility for claims arising from breach of warranty, negligence or otherwise is limited to the purchase price of the material sold by wHOLE.**Protect**.



The work of FASET members, sub-contracting and training, is often extremely challenging, complex and is far from simple.

- Tony Seddon, Managing Director, FASET.

4. MODIFICATION & INSTALLATION

FABRICATION & ON SITE INSTALLATION

All panels can be modified and cut to fit the void on site by our team of specialist installers using a variety of cutting methods.

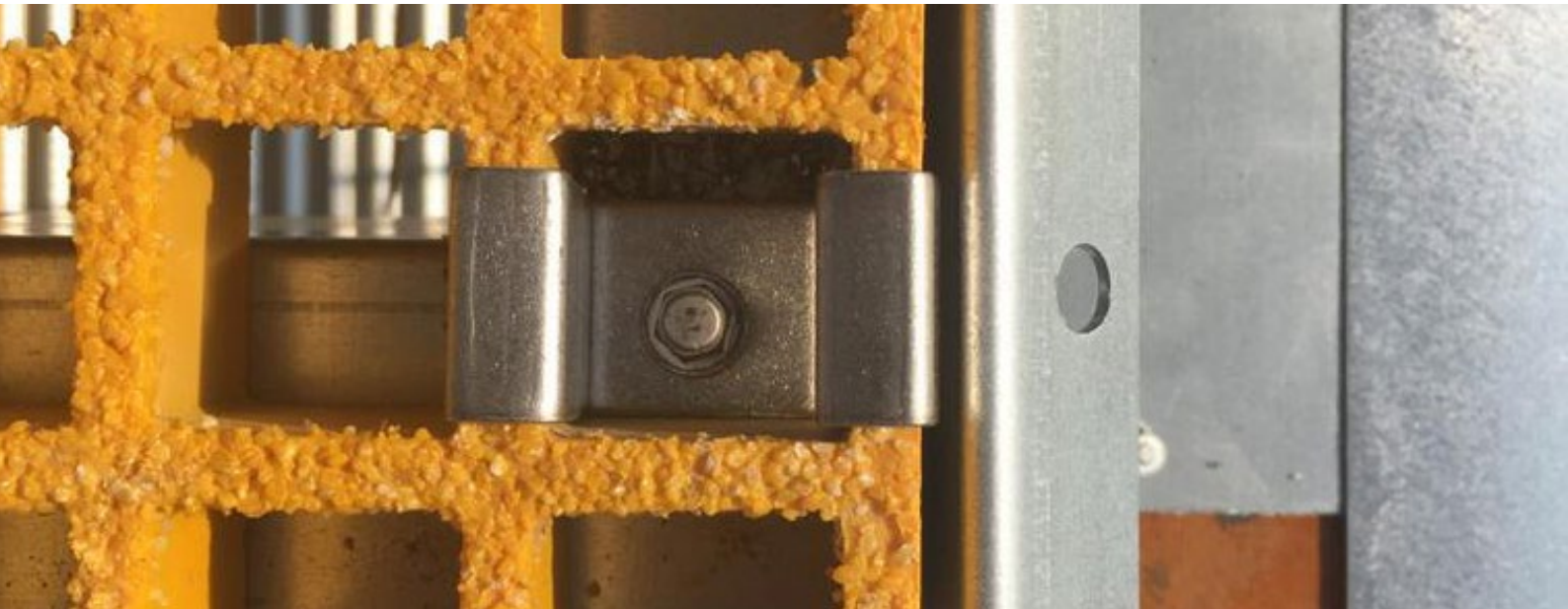
A major advantage of wHOLE.**Protect** is the off-site manufacturing of the GRP and edge shutter to suit specific void requirements.

Our teams work to exacting standards and can adapt and modify to suit design changes on site. We take pride in our craftsmanship aligning neatly cut panels with the grid cut outs - to present a tidy installation.

WHOLE.PROTECT PANEL FIXINGS

	Product Name	Type	Mesh Size	Fixing Type	Fixing Spacing
	wHOLE.**Protect Standard**	WP04SD	38mm x 38mm	M CLIPS*/# / C CLIPS+	x1 EACH CORNER THEN 1000mm MAX
	wHOLE.**Protect Micro**	WP11MC	19mm x 19mm	WASHERS & DF3-W-5.5x80o/#	
	wHOLE.**Protect Solid Top**	WP04ST	Solid		
	wHOLE.**Protect Maxi**	WP05MX	50mm x 50mm	M CLIPS*/#	

* Stitched screw length dependent on M Clip depth.
\+ Use supplied bolt
o Countersunk screws
\# If fixing direct to steel, ensure fixing is suitable to base thickness



INSTALLATION CLIPS

M-CLIP: Direct fixing to support underneath

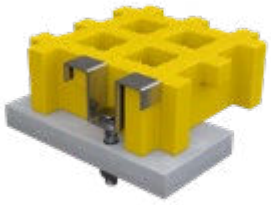
Grating	Open Mesh	Pultruded
Depth	25mm / 38mm / 50mm	25mm / 38mm

- 5.5mm diameter self-tapping screw
- Screw recessed to prevent trip hazard
- Compatible with numerous bolt and screw types
- Stainless steel 316

L-CLIP: Direct fixing to support underneath

Grating	Open Mesh
Depth	25mm / 38mm

- 5.5mm diameter self-tapping screw
- Screw sunken to prevent trip hazard
- Compatible with numerous bolt and screw types
- Stainless steel 316



TWINGRID (MINI MESH) M CLIP: Direct fixing to support underneath

Grating	TwinGrid / Mini Mesh
Depth	14mm / 30mm / 38mm

- 5.5mm diameter self-tapping screw
- Screw sunken to prevent trip hazard
- Compatible with numerous bolt and screw types
- Stainless steel 316

C-CLIP: For joining bound edges of 2 panels together

Grating	Open Mesh
Depth	25mm / 38mm / 50mm

- M6 Bolt with socket head
- Nut fixed in place for easy installation
- Stainless steel 316

J-CLAMP: For clamping to the underside of supports

Grating	Open Mesh	TwinGrid / Mini Mesh	Solid Top	Pultruded
Depth	25mm / 38mm / 50mm	14mm / 30mm / 38mm	28mm / 41mm / 54mm	25mm / 38mm / 50mm

- Used where direct fixing through supports are not permitted
- Can be used with most grating top clips
- Does not require tightening from underneath
- M8 & M6 bolt compatible (hex nuts required)
- Stainless steel 316

DOME FIXING (WLP): Direct fixing to support underneath

Grating	TwinGrid / Mini Mesh	Solid Top
Depth	14mm / 30mm / 38mm	28mm / 41mm / 54mm

- 5.5mm diameter self-tapping screw
- Screw recessed to prevent trip hazard
- Compatible with numerous bolt and screw types
- Stainless steel 316

5. DESIGN CONSIDERATIONS

Important factors to be considered during the early stages of design.

The Product Information and Technical Specifications in this brochure are based on the following Design Assumptions:

- wHOLE.**Protect** GRP to be supported on 4 sides and act as 2 way spanning with maximum ratio 2:1, based on a maximum span of 1200mm in any one direction. Where the opening is greater than 1200mm, intermediate support is to be provided to the wHOLE.**Protect** GRP panel in accordance with FibreGrid™ and wHOLE.**Protect** literature.
- Standard edge trim restrained at 600mm c/c with restraint straps as per TATA requirements. Note the design of these straps is outside the scope of these calculations.
- Maximum unsupported slab edge cantilever distances are in accordance with TATA ComFlor manual and wHOLE.**Protect** typical details.
- Grating acts as fall protection system installed with the composite floor deck at each level as works progress. Worst case assumption is for a person to fall on to the wHOLE.**Protect** GRP from the level above prior to the upper wHOLE.**Protect** GRP being in place.
- Global short-term serviceability of the section is not critical as the grating and edge trim is supported along its entire length by the primary steelwork. The trim provides temporary fall protection and will also be restrained by the concrete slab in the permanent condition, therefore edge trim to be checked for plastic failure capacity only. However, the local serviceability of the cross sections is to be determined within the analysis for comparison of site testing.
- Material strength S280 N/mm^2 galvanised steel.
- Section not subject to axial compression or torsional forces.
- Temporary load duration is ‘very short-term’.

YOUR QUESTIONS ANSWERED

? CAN I RUN SERVICES THROUGH THE WHOLE.PROTECT SYSTEM?

Yes. For small pipes and cables, these can potentially run through the wHOLE.**Protect** Standard (WP04SD) or wHOLE.**Protect** Micro (WP11MC) grating. However, the wHOLE.**Protect** GRP can be easily modified on site to accommodate larger services. Give us a call early and we can review each requirement specifically.

? NO GAPS - IS IT POSSIBLE TO FULLY CLOSE THE VOID?

Yes. Our wHOLE.**Protect** Solid (WP04ST) system provides complete peace of mind, offering a solid-top finish ensuring no items can pass through.

? CAN THE SIZE OF THE VOID BE MAINTAINED?

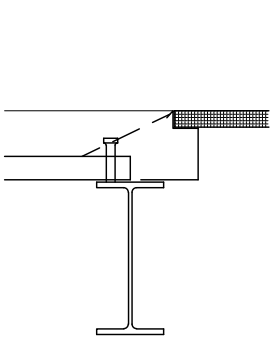
Yes, however....

- The beam size will determine the setting out of the steelwork.
- The trimming steelworks may need to be adapted to suit the specific scenario.
- Material must not be overlapped. Minimum beam width of 100mm required to avoid overlapping of material.

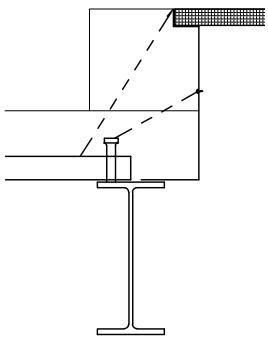
? WHAT'S THE LARGEST VOID I CAN COVER USING THE WHOLE.PROTECT SYSTEM?

For our standard wHOLE.**Protect** (WP04SD) the maximum void width is 1200 mm although we can accommodate almost any length. Should your void be larger that this, give us a call early and we can guide you through the options.

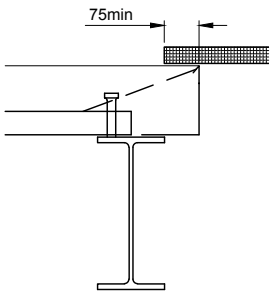
? WHICH DESIGN SCENARIO / BEARING DO YOU REQUIRE?



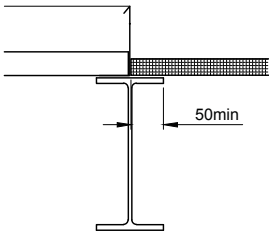
A. STANDARD BEARING ONTO TRIM



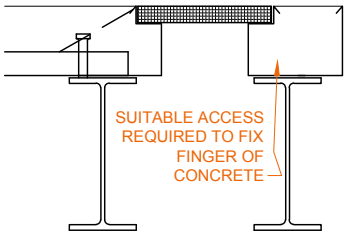
B. BEARING ONTO UPSTAND TRIM



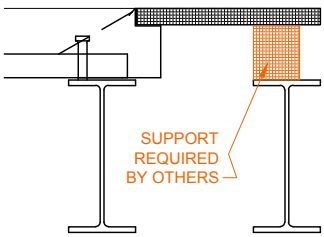
C. BEARING ONTO SLAB



D. BEARING ONTO BEAM



E. EDGE PERIMETER DETAILS



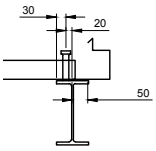
F. EDGE PERIMETER DETAILS

? WILL WHOLE.PROTECT CREATE A TRIP HAZARD?

No. Our CAD design team detail different bearing scenarios to ensure that wHOLE.**Protect** is installed as flush to the concrete slab as possible eliminating trip hazards. Call us to discuss your bearing requirement.

? WILL THE SYSTEM WORK WITH THRU-DECK SHEAR STUDS ON THE ADJACENT BEAMS?

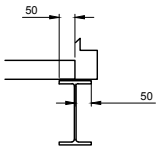
Yes. The wHOLE.**Protect** system can accommodate shear studs to the beams trimming the void, although this is dependent on the size of beam and location of the slab. It might be that the beam needs to be moved to maintain void size and accommodate shear studs. Please see diagrams below or give us a call and we'll guide you through the options.



WHOLE.PROTECT
MINIMUM BEAM SIZES AND STEEL SETTING OUT

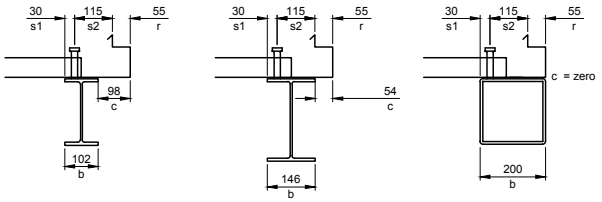
Q: ARE SHEAR STUDS REQUIRED?

Minimum beam width of 102mm required
depending on void size and slab cantilever



STUD REQUIRED

SETTING OUT OF TRIMMING STEEL TO SUIT VOID SIZE



FOR BEAMS WITH STUDS

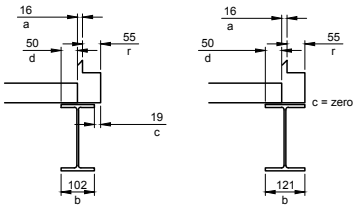
TO CALCULATE SETTING OUT FOR TRIMMING STEELS, THE FOLLOWING FORMULAE CAN BE USED.

s1 + s2 + r - b = c

- Minimum beam width required is 102mm, however a cantilever of 98mm is required.
- Maximum beam width to achieve edge of beam slab/ trim is 200mm.
- For beams over 200mm, studs can move inbound.
- A minimum bearing of 50mm is required for both deck & edge trim. The edge trim requires a 50mm projection past the recess, resulting in a minimum bottom leg of 125mm.

NO STUDS REQUIRED

SETTING OUT OF TRIMMING STEEL TO SUIT VOID SIZE



FOR BEAMS WITH STUDS

TO CALCULATE SETTING OUT FOR TRIMMING STEELS, THE FOLLOWING FORMULAE CAN BE USED.

d + a + r - b = c

- Minimum beam width required is 102mm, however a cantilever of 19mm is required.
- Maximum beam width to achieve edge of beam slab/trim is 121mm.
- For beams over 121mm, deck bearing will increase
- A minimum bearing of 50mm is required for both deck & edge trim. The edge trim requires a 50mm projection past the recess, resulting in a minimum bottom leg of 125mm.

LEGEND

CONSTANTS

a - Deck Edge to edge trim.
d - Deck Bearing = min 50mm
r - Recess in edge trim for grate bearing - 55mm
s1 - Edge of beam to stud centreline = 30mm
s2 - Stud centreline to edge trim = 115mm (to achieve full composite action)

VARIABLES

b - Width of Beam
c - Cantilever of edge trim from edge

? CAN I USE WHOLE.PROTECT SYSTEM WITH STRUCTURAL ROOF DECKING AS WELL AS FLOOR DECKING?

Yes. Although more commonly used with floor decking, we have successfully installed wHOLE.**Protect** on a range of roof decking projects. The grating can be supported either directly on the structural steelwork, directly onto the deck or on a specially adapted flashing.

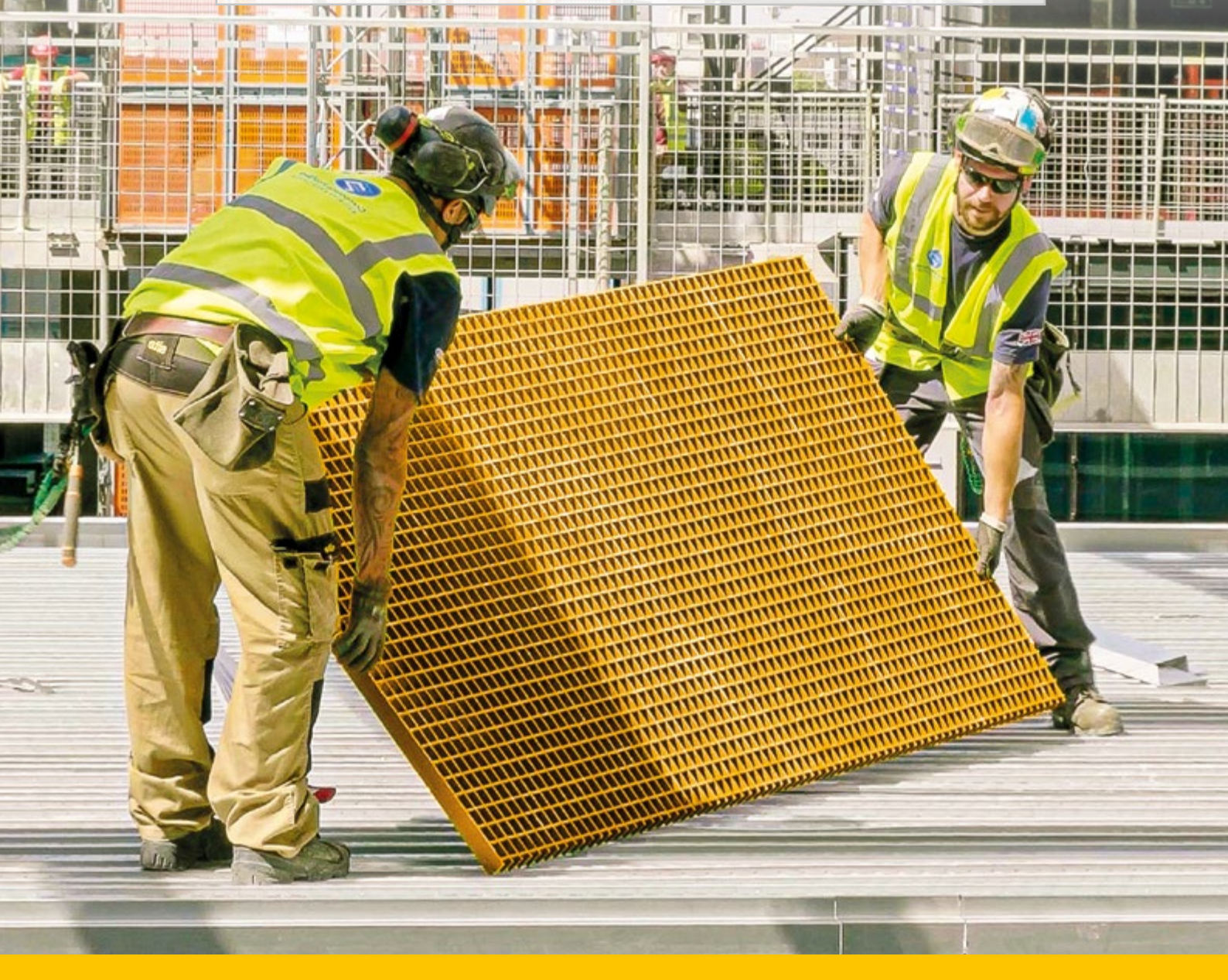
? WHAT IS THE MAXIMUM LOAD THE GRP CAN TAKE?

The maximum load varies depending on the wHOLE.**Protect** product specified and when and how it is to be used e.g. whether in its Temporary state (i.e. when we install it) or in its Permanent state (i.e. when the concrete is cast). It's best to give us a call to discuss the conditions of use. See load tables on page 10.

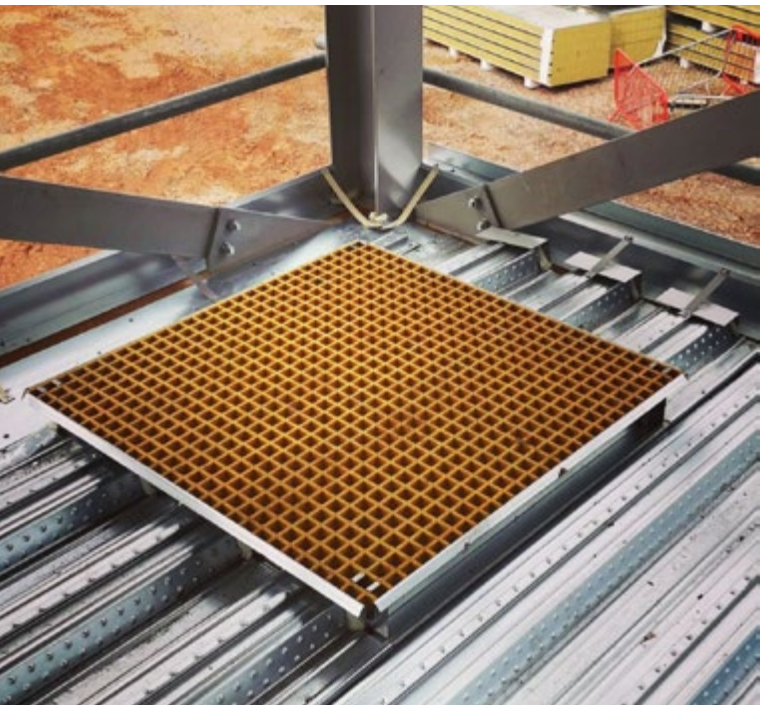
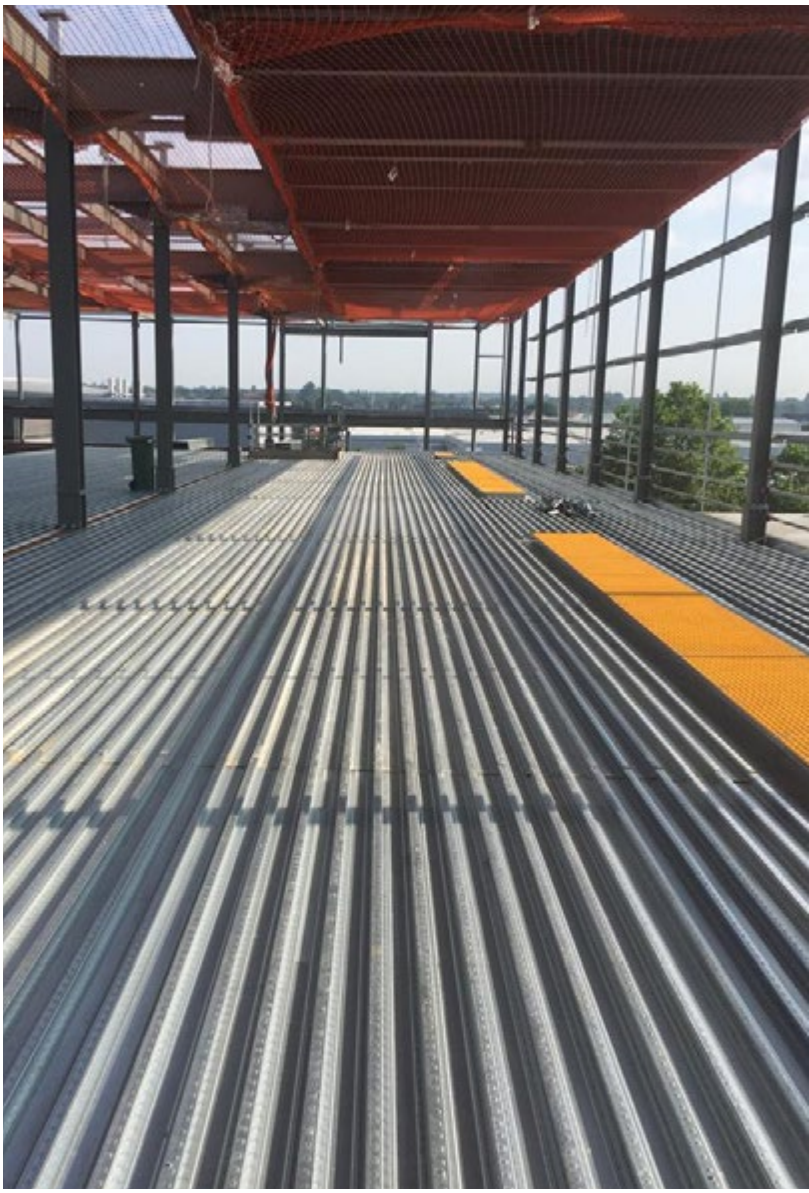
To ensure the smooth installation of wHOLE.**Protect**, coordination is required during the deck design phase.

Early engagement with the Composite Profiles team is key.

Talk to us and we can advise **01202 659 237**
sales@wholeprotect.co.uk







wHOLE.**Protect**

EXCELLENCE IN SAFETY

Please call us on **01202 659 237**
to discuss your requirements.

www.wholeprotect.co.uk | **sales@wholeprotect.co.uk**