

Application for Approval of Details Reserved by Condition

Town and Country Planning Act 1990 (as amended); Planning (Listed Buildings and Conservation Areas) Act 1990 (as amended)

Publication of applications on planning authority websites

Please note that the information provided on this application form and in supporting documents may be published on the Authority's website. If you require any further clarification, please contact the Authority's planning department.

Site Location

Disclaimer: We can only make recommendations based on the answers given in the questions.

If you cannot provide a postcode, the description of site location must be completed. Please provide the most accurate site description you can, to help locate the site - for example "field to the North of the Post Office".

Number

Suffix

Property Name

Address Line 1

Address Line 2

Address Line 3

Town/city

Postcode

Description of site location must be completed if postcode is not known:

Easting (x)

Northing (y)

Description

Applicant Details

Name/Company

Title

First name

Surname

Company Name

Address

Address line 1

Address line 2

Address line 3

Town/City

Country

Postcode

Are you an agent acting on behalf of the applicant?

Yes

No

Contact Details

Primary number

Secondary number

Fax number

Email address

Agent Details

Name/Company

Title

First name

Surname

Company Name

Address

Address line 1

Address line 2

Address line 3

Town/City

Country

Postcode

Contact Details

Primary number

Secondary number

Fax number

Email address

Description of the Proposal

Please provide a description of the approved development as shown on the decision letter

Reference number

Date of decision (date must be pre-application submission)

Please state the condition number(s) to which this application relates

Condition number(s)

Has the development already started?

- Yes
 No

If Yes, please state when the development was started (date must be pre-application submission)

Has the development been completed?

- Yes
 No

Part Discharge of Conditions

Are you seeking to discharge only part of a condition?

- Yes
 No

Discharge of Conditions

Please provide a full description and/or list of the materials/details that are being submitted for approval

Details of proposed building materials for the following areas:

Roof:- KS1000RW profile sheet Goosewing Grey RAL 7038 - Kingspan RW data sheet.pdf

Southern Elevation:- KS1000RW profile sheet Silver RAL 9006 - Kingspan RW data sheet.pdf

Valet Building:- Roof profiled sheet Silver RAL 9006 - 32-1000 Roof Data Sheet.pdf Walls profiled sheet Silver RAL 9006 - 32-1000 Wall Data Sheet.pdf

Site Visit

Can the site be seen from a public road, public footpath, bridleway or other public land?

- Yes
 No

If the planning authority needs to make an appointment to carry out a site visit, whom should they contact?

- The agent
 The applicant
 Other person

Pre-application Advice

Has assistance or prior advice been sought from the local authority about this application?

- Yes
 No

Declaration

I / We hereby apply for Approval of details reserved by a condition (discharge) as described in this form and accompanying plans/drawings and additional information. I / We confirm that, to the best of my/our knowledge, any facts stated are true and accurate and any opinions given are the genuine options of the persons giving them. I / We also accept that: Once submitted, this information will be transmitted to the Local Planning Authority and, once validated by them, be made available as part of a public register and on the authority's website; our system will automatically generate and send you emails in regard to the submission of this application.

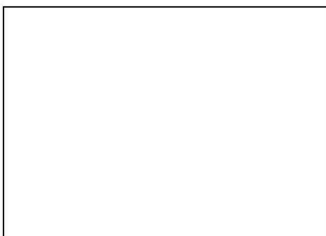
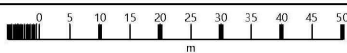
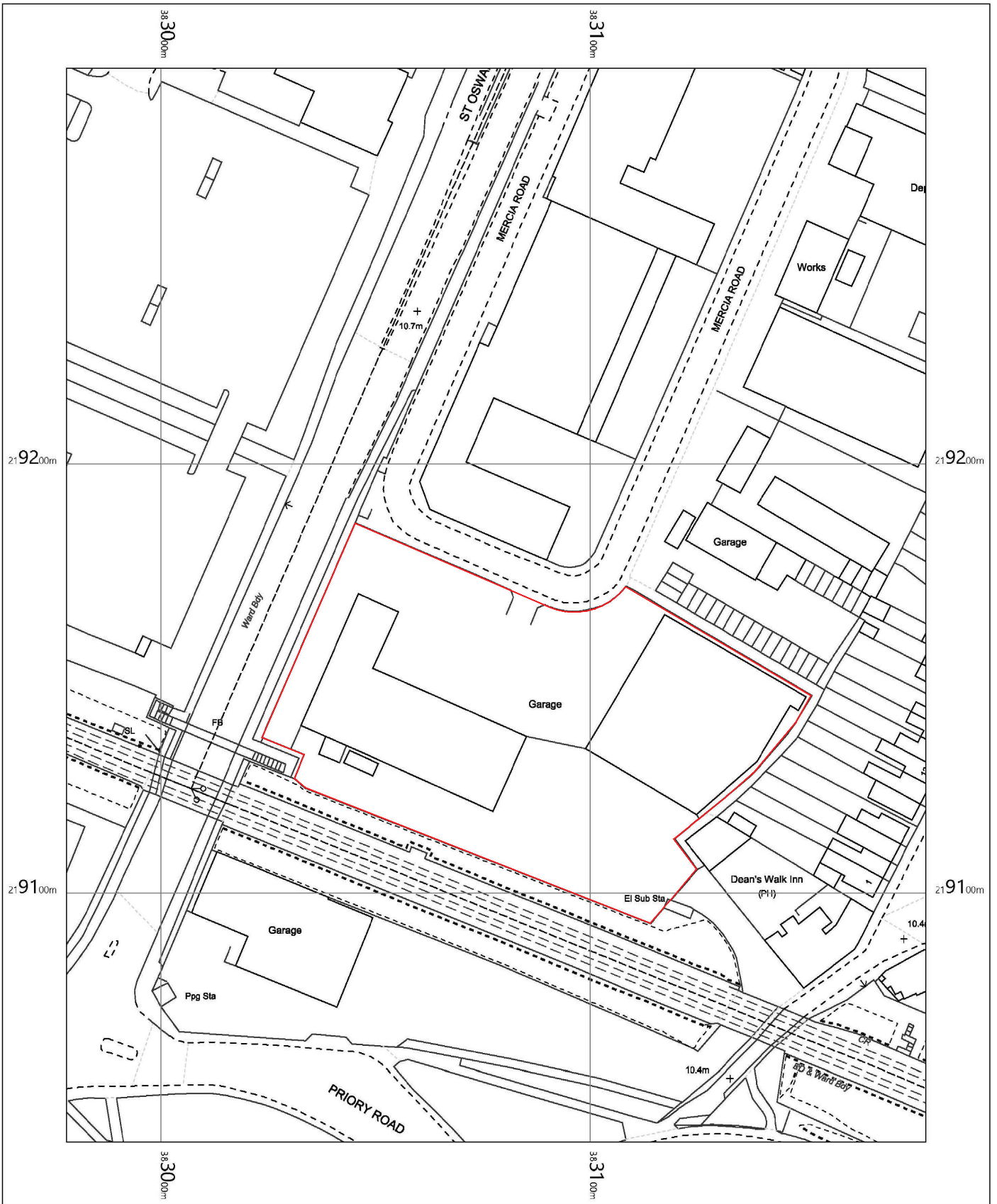
I / We agree to the outlined declaration

Signed

Keith Waterson

Date

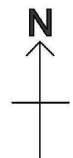
30/08/2022



OS MasterMap 1250/2500/10000 scale
 Thursday, December 23, 2021, ID: BW1-01010168
 maps.blackwell.co.uk

1:1250 scale print at A4, Centre: 383078 E, 219167 N

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Insulated Panels
UK & Ireland

Protected by



QuadCore[®] KS1000 RW Roof Panel Product Data Sheet



POWERED BY
QuadCore[®]
TECHNOLOGY



Product Data

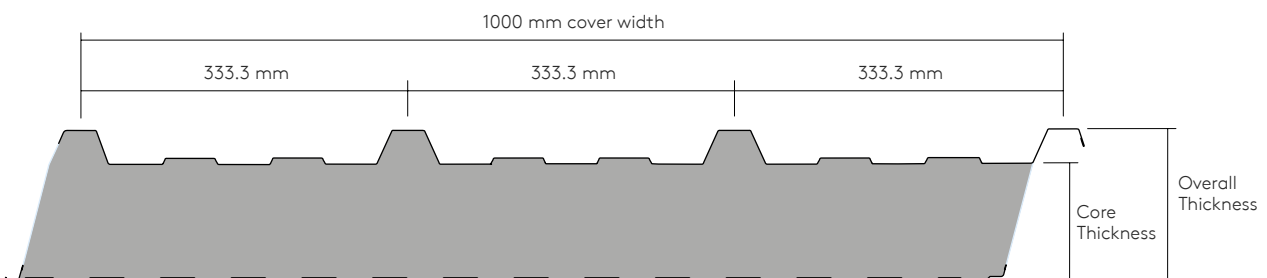
Applications

QuadCore® KS1000 RW Roof Panels are through-fix, trapezoidal profiled, insulated roof panels which can be used for building applications with roof pitches of 4° or more after deflection.

Available Lengths

Standard Lengths (m)	1.8 - 14.5
Longer Lengths (non-standard) (m)	14.5 - 29.2
Shorter Lengths (non-standard) (m)	Below 1.8

Note: Additional costs and transport restrictions may apply for non-standard lengths. All lengths may change for export (outside of the UK).



Dimensions, Weight & Thermal Performance

Core Thickness (mm)	40	53	60	73	80	91	100	115	120	137	150
Overall Thickness (mm)	71	84	91	104	111	122	131	146	151	168	181
U-Value (W/m²K)	0.47	0.35	0.31	0.25	0.23	0.20	0.18	0.16	0.15	0.13	0.12
Weight Steel External Sheet (kg/m²)	9.0	9.5	9.7	10.2	10.5	10.9	11.3	11.8	12.0	12.7	13.2

QuadCore® KS1000RW Roof Panels have a Thermal Conductivity (λ) of 0.018W/m.K

QuadCore® KS1000 RW Roof Panels have a Thermal Transmittance (U-Value), calculated using the method required by the Building Regulations Part L2 (England & Wales), Building Standards Section 6 (Scotland), Part L (Republic of Ireland) and Part F2 (Northern Ireland).

Insulation Core

QuadCore® KS1000 RW Roof Panels are manufactured with an HCFC, CFC and HFC free QuadCore® insulation core.



Certification and Testing

Reaction to Fire

QuadCore® KS1000 RW Roof Panels are classified B-s1,d0 according to the European Reaction to Fire classification system (Euroclasses) BS EN 13501-1: 2007+A1: 2009, under the certified name KS1000/2000 RW QuadCore® and BS EN 13501-1:2018 under the certified name KS1000 RW when using the following internal liners:

- CLEANsafe 15, CLEANsafe 25, CLEANsafe 55, CLEANsafe 120 and AQUAsafe 55.

Please contact Kingspan Tech-eXchange for information relating to the external face.

Roof Applications

QuadCore® KS1000 RW Roof Panels are tested to:

- BROOF(t4) to BS EN 13501-5: 2016 under the certified name KS1000 RW for panel thicknesses 40 - 150mm and roof pitch of 0° - 10°.
- BROOF(t4) to BS EN 13501-5: 2016 under the certified name KS1000 RW for panel thicknesses 40 - 150mm and roof pitch of >10°.

Fire Resistance

Fire resistance classifications are subject to panel thickness, orientation, method of assembly, and steel coating. Please contact Kingspan Tech-eXchange for project specific details.

Insurer Approvals

QuadCore® KS1000 RW Roof Panels are tested to:

- LPS 1181 series of fire growth standards for LPCB approval.
- LPS 1181 Part 1: Issue 1.2 requirements and tests for use as the external envelope of buildings certified to:
 - LPS 1181-1 Grade EXT-B under the certified name QuadCore® KS1000 RW (Roof Panel) for thicknesses 40 - 150mm.
- FM 4471 Class 1 panel roofs under the certified name KS1000 RW for thicknesses 80 - 150mm.

- FM 4880 Class 1 fire rating of building panels or interior finish materials, unlimited height under the certified name KS1000 RW for thicknesses 40 - 150mm.
- FM 4882 Class 1 interior wall panels in smoke sensitive occupancies (pharmaceutical manufacturing & storage areas, and food preparation & storage areas or similar occupancies) under the certified name KS1000 RW for thicknesses 40 - 150mm.

Insurer approvals are subject to panel thickness, cover width, orientation, method of assembly, steel coating and manufacturing facility. Please contact Kingspan Tech-eXchange for project specific details.



Environmental

Kingspan Insulated Panels produced in the UK are certified to BES 6001 (Framework Standard for the Responsible Sourcing of Construction Products) 'Very Good'. QuadCore® Insulated Panel systems have Environmental Product Declarations in accordance with the requirements of EN 15804: 2012+A1: 2013 for 100mm thickness.

All Kingspan Insulated Panels manufacturing facilities across the UK and Ireland are powered by 100% renewable energy. In addition, Kingspan Insulated Panels procure steel that is made from 15 - 25% recycled content. Kingspan Insulated Panels directly contribute to BREEAM® / LEED® credits.

Air Leakage

An air leakage rate of 3m³/hr/m² at 50Pa or less can be achieved when using Kingspan insulated roof and wall panels.

For information on detailing required to achieve lower air leakage rates please contact Kingspan Tech-eXchange.

Acoustic

Sound Reduction Index (SRI)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SRI (dB)	20	18	20	24	20	29	39	47

QuadCore® KS1000 RW Roof Panels have a single figure weighted sound reduction $R_w = 25$ dB. Results are based on panels of similar profile and core material.

Product Data

Materials

Substrate

Metallic protected steel to BS EN 10346: 2015.

Please contact Kingspan Tech-eXchange for information on other substrates.

Coatings – External Weather Sheet

- Kingspan XL Forté: Consists of a multi-layer organic coating, embossed with a traditional leather-grain finish.
- Kingspan Spectrum: Consists of a coated semi-gloss finish with slight granular effect.

Coatings – Internal Liner Sheet

- Kingspan CLEANsafe 15: The coating has been developed for use as the internal lining of insulated panels. Standard colour is “bright white” with an easily cleaned surface.
- Kingspan CLEANsafe 120: The coating has been developed for use as the internal lining of insulated panels where a high level of cleanliness and hygiene is required, and the panels are to be cleaned down on a regular basis.
- Kingspan AQUAsafe: The coating has been developed for use as the internal lining of insulated panels to suit high humidity internal environments.
- Kingspan AQUAsafe 55: The coating has been developed for use as the internal lining of insulated panels to swimming pool internal environments.

For Reaction to Fire performance of internal liners please see Certification and Testing section.

Panel End Cut Back

Standard Cut Back Eaves	50mm, 75mm, 100mm
Class A End Lap	75mm, 150mm

For further information in relation to end laps please contact Kingspan Tech-eXchange.

Product Tolerances

Cut to Length	± 5mm
Cover Width	± 2mm
Thickness (Core ≤ 100mm)	± 2mm
Thickness (Core > 100mm)	± 2%
End Squareness	± 3mm

Handling

QuadCore® KS1000 RW Roof Panels can be manufactured in both left to right handed (LH) and right to left handed (RH).

Quality & Durability

QuadCore® KS1000 RW Roof Panels are manufactured from the highest quality materials, using state of the art production equipment to rigorous quality control standards, complying with BS EN ISO 9001 standard, ensuring long term reliability and service life. The panels are also being manufactured under Environmental Management System Certification BS EN ISO 14001. Compliant to BS OHSAS 18001 Occupational Health and Safety. QuadCore® KS1000 RW Roof Panels are CE marked to BS EN 14509: 2013.



Warranty

QuadCore® Assured Warranty is supported by Independent Third-Party Certification which is recognised by the Worldwide Property Insurance Market as a measure of both robust Quality and Fire Performance. Each product is independently tested and once certified the manufacturing processes audited to ensure on-going compliance, which along with internal management systems, enables full product traceability. This warranty provides additional reassurance as it is supported by a Third-Party Insurance which covers three key areas:

- **Insurance-Backed Thermal & Structural Performance:** The QuadCore® Insulated Panels have been independently certified that they will perform for a minimum period of 25 years. An optional thermographic imaging service is also available.
- **Insurance-Backed Fire Performance:** We warrant that our QuadCore® Insulated Panels are tested and certified to Loss Prevention Certification Board (LPCB) property insurance standard LPS 1181 Part 1: Issue 1.2 ‘Series of fire growth tests for LPCB approval and listings of construction product systems’ Grade EXT-B when installed according to the appropriate specification.
- Our QuadCore® Insulated Panels are produced at ‘Net Zero Energy’ manufacturing facilities. Kingspan Insulated Panels sites in the UK and Ireland operate a strict landfill avoidance policy and offer packaging and offcut waste take backs schemes. We warrant a panel take-back scheme to enable our QuadCore® Insulated Roof & Wall panels to be reused or recycled at the end of their warranty period of 25 years. This facilitates a more circular end of life solution for our product.

Please contact Kingspan Tech-eXchange for further information.

Packing

QuadCore® KS1000 RW Roof Panels are stacked weather sheet to weather sheet (to minimise pack height). The top and sides are protected by either cardboard or polystyrene and spiral wrap stretch polyfilm. The number of panels in a pack will vary depending on thickness.

Core Thickness (mm)	40	53	60	73-80	91	100-120	137-150
No. of Panels per Pack	17	15	13	11	9	7	6

Note: Applies to UK pack sizes. Please contact Kingspan Tech-eXchange for export information.

Sea Freight

Fully timber crated packs are available on projects requiring delivery by sea freight shipping, at additional costs. Alternatively, steel containers can be used. Special loading charges apply.

Delivery

All deliveries (unless indicated otherwise) are by road transport to project site. Off-loading is the responsibility of the client.

Site Installation Procedure

Site assembly instructions are available from Kingspan Tech-eXchange.

Product Data

Load / Span Tables

Structural Tables

External sheet 0.5mm (steel), internal sheet 0.4mm (steel).

Unfactored load / span tables (to be compared against calculated design wind load values unfactored).

Single Span

Core Thickness (mm)	Load Type	Span (m)									
		Uniformly distributed imposed load (kN/m ²)									
		1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2
40	Pressure	3.24	2.68	2.26	1.93	1.50	1.17	0.91	0.71	0.56	-
	Suction	4.34	3.63	3.09	2.67	2.33	1.92	1.57	1.30	1.09	-
53	Pressure	3.86	3.27	2.80	2.43	2.04	1.63	1.31	1.06	0.86	0.69
	Suction	5.23	4.46	3.87	3.39	2.99	2.58	2.15	1.80	1.53	1.31
60	Pressure	4.21	3.60	3.11	2.71	2.34	1.89	1.54	1.26	1.03	0.85
	Suction	5.72	4.92	4.29	3.78	3.35	2.85	2.41	2.07	1.78	1.53
73	Pressure	4.85	4.19	3.67	3.23	2.87	2.38	1.97	1.64	1.37	1.15
	Suction	6.65	5.80	5.12	4.55	3.88	3.23	2.73	2.34	2.04	1.79
80	Pressure	5.19	4.52	3.98	3.52	3.13	2.67	2.22	1.86	1.56	1.32
	Suction	7.15	6.27	5.56	4.96	4.12	3.43	2.90	2.49	2.16	1.90
91	Pressure	5.69	5.00	4.43	3.94	3.53	3.11	2.62	2.22	1.88	1.60
	Suction	7.94	7.03	6.27	5.43	4.43	3.69	3.12	2.68	2.33	2.05
100	Pressure	6.14	5.42	4.83	4.32	3.87	3.49	2.96	2.52	2.15	1.85
	Suction	8.60	7.65	6.81	5.84	4.77	3.97	3.37	2.89	2.52	2.21
115	Pressure	6.86	6.11	5.48	4.93	4.44	4.01	3.52	3.03	2.61	2.26
	Suction	9.61	8.42	7.49	6.36	5.20	4.34	3.68	3.17	2.75	2.42
120	Pressure	7.09	6.33	5.68	5.12	4.62	4.18	3.71	3.20	2.77	2.40
	Suction	9.61	8.42	7.49	6.59	5.39	4.50	3.82	3.28	2.86	2.51
137	Pressure	7.87	7.08	6.39	5.78	5.24	4.76	4.32	3.80	3.31	2.90
	Suction	9.61	8.42	7.50	6.76	5.86	4.90	4.16	3.58	3.11	2.74
150	Pressure	8.47	7.64	6.93	6.29	5.71	5.19	4.73	4.27	3.74	3.29
	Suction	9.62	8.43	7.50	6.76	6.15	5.20	4.41	3.80	3.31	2.91

- 1 Values have been calculated using the method described in BS EN 14509: 2013, for medium coloured panels.
- 2 The following deflection limits have been used:
 - Pressure loading $l/200$.
 - Suction loading $l/150$.
- 3 All panel thicknesses have been calculated with a minimum support width of 50mm. Larger support widths are possible.
- 4 The actual wind suction load resisted by the panel is dependent on the number of fasteners used and the purlin thickness as well as the fastener material.
- 5 The fastener calculation should be carried out in accordance with the appropriate standards.
- 6 For intermediate values linear interpolation may be used.
- 7 The allowable steelwork tolerance between bearing planes of adjacent supports is ± 5 mm.

Structural Tables

External sheet 0.5mm (steel), internal sheet 0.4mm (steel).

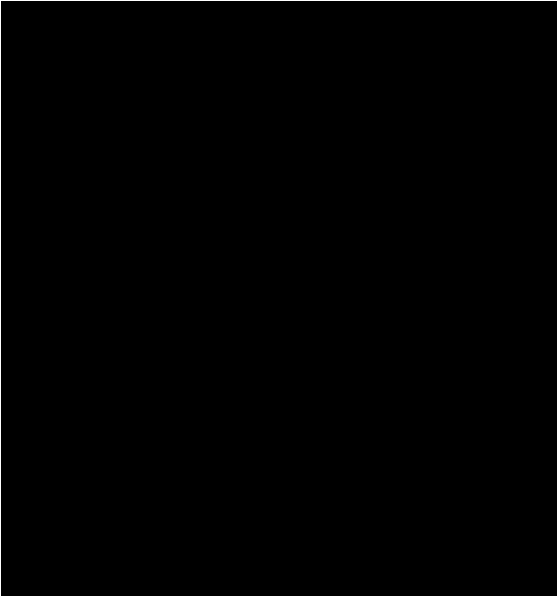
Unfactored load / span tables (to be compared against calculated design wind load values unfactored).

Double Span

Core Thickness (mm)	Load Type	Span (m)									
		Uniformly distributed imposed load (kN/m ²)									
		1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2
40	Pressure	3.24	2.68	2.24	1.85	1.56	1.34	1.16	1.02	0.90	0.80
	Suction	4.07	3.27	2.71	2.29	1.98	1.74	1.54	1.38	1.25	1.14
53	Pressure	3.81	3.02	2.46	2.05	1.74	1.50	1.30	1.15	1.02	0.91
	Suction	4.24	3.43	2.86	2.43	2.11	1.86	1.66	1.49	1.35	1.24
60	Pressure	3.97	3.15	2.58	2.15	1.83	1.58	1.38	1.22	1.08	0.97
	Suction	4.32	3.50	2.92	2.50	2.17	1.91	1.71	1.54	1.40	1.28
73	Pressure	4.23	3.38	2.77	2.33	1.99	1.72	1.50	1.33	1.18	1.06
	Suction	4.45	3.63	3.04	2.61	2.27	2.01	1.80	1.63	1.48	1.36
80	Pressure	4.38	3.51	2.88	2.42	2.07	1.79	1.57	1.39	1.24	1.11
	Suction	4.50	3.68	3.09	2.65	2.32	2.05	1.84	1.66	1.52	1.39
91	Pressure	4.60	3.70	3.05	2.57	2.20	1.91	1.68	1.49	1.33	1.19
	Suction	4.47	3.67	3.09	2.66	2.32	2.06	1.85	1.68	1.53	1.41
100	Pressure	4.78	3.85	3.18	2.69	2.30	2.00	1.76	1.56	1.40	1.26
	Suction	4.60	3.78	3.19	2.75	2.41	2.14	1.92	1.74	1.59	1.46
115	Pressure	5.06	4.09	3.40	2.87	2.47	2.15	1.89	1.68	1.50	1.35
	Suction	4.65	3.83	3.24	2.80	2.46	2.18	1.96	1.78	1.63	1.50
120	Pressure	5.15	4.17	3.46	2.93	2.52	2.19	1.93	1.72	1.54	1.39
	Suction	4.64	3.83	3.25	2.80	2.46	2.19	1.97	1.79	1.63	1.51
137	Pressure	5.45	4.44	3.70	3.14	2.70	2.36	2.08	1.85	1.66	1.49
	Suction	4.65	3.85	3.27	2.83	2.48	2.21	1.99	1.81	1.66	1.53
150	Pressure	5.68	4.63	3.86	3.28	2.83	2.47	2.18	1.94	1.74	1.57
	Suction	4.63	3.84	3.26	2.82	2.48	2.21	1.99	1.81	1.66	1.53

- 1 Values have been calculated using the method described in BS EN 14509: 2013, for medium coloured panels.
- 2 The following deflection limits have been used:
 - Pressure loading $l/200$.
 - Suction loading $l/150$.
- 3 All panel thicknesses have been calculated with a minimum support width of 50mm. Larger support widths are possible.
- 4 The actual wind suction load resisted by the panel is dependent on the number of fasteners used and the purlin thickness as well as the fastener material.
- 5 The fastener calculation should be carried out in accordance with the appropriate standards.
- 6 For intermediate values linear interpolation may be used.
- 7 The allowable steelwork tolerance between bearing planes of adjacent supports is ± 5 mm.

Contact Details

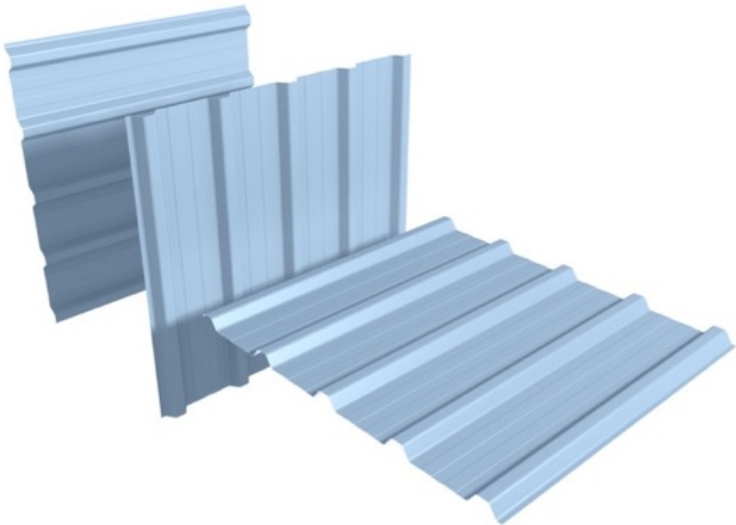
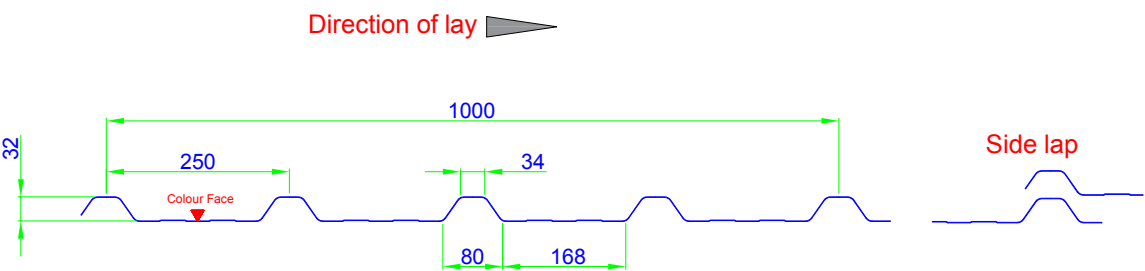


For the product offering in other markets please contact your local sales representative or visit www.kingspanpanels.com

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TF32/1000R

Description	
Application	Single skin or insulated twin skin roofs and walls. Minimum roof pitch 4°, 6° if rooflights included Walls can be vertically or horizontally laid.
Profile depth	32mm
Profile cover width	1000mm
Profile pitch	250mm
Nominal profile weight	0.5mm = 4.8kg/m ² 0.7mm = 6.7kg/m ²
Pack weight	Max 2.0t
Lengths	Minimum length 0.20m Maximum length 10.00m
Curve options	N/A
CE reference	TF32/1000R (Roof profile - Trapezoidal): BS EN 14782:2006
	
	
Materials	<p>Substrate: 0.7mm steel, Class1, S220GD+Z275, AZ150 or ZA255 0.5mm steel, Class1, S220GD+Z275, AZ150 or ZA255</p> <p>Paint finish options: To standard colour charts. Plastisol PVC(P), 200µm Polyester SP, 25µm High Build Polyester HBP, 50µm Colorcoat HPS200 Ultra®, 200µm</p> <p>Other: Enquire with Trimform Products for the availability of aluminium and other paint finishes such as PVdF and Agri-Steel™</p>

TF32/1000R

Installation

TF32/1000 R: outer roof sheet: fixing guide -

Standard fixing positions



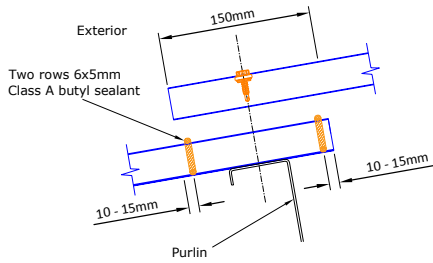
End lap fixing positions



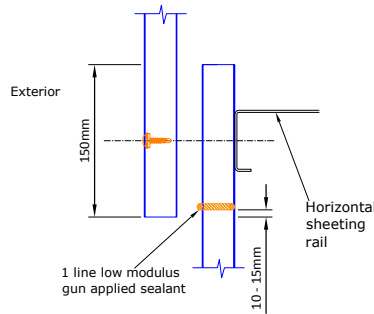
Eaves and ridge fixing positions



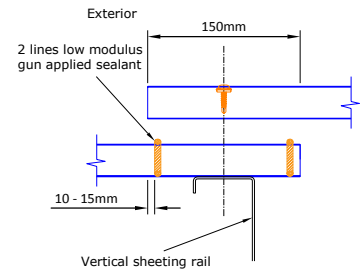
End lap - Roof



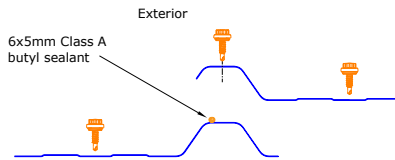
End lap - Vertical wall sheet



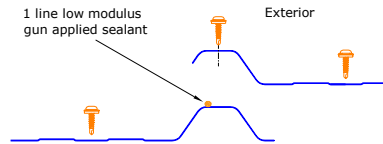
End lap - Horizontal wall sheet



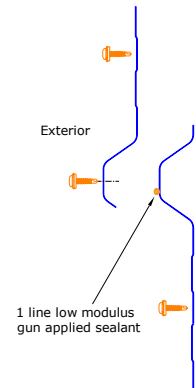
Side lap - Roof



Side lap - Vertical wall sheet



Side lap - Horizontal wall sheet



Laps/Sealants

Roof:

End laps: 150mm, 2 lines 5x6mm butyl sealant
Side laps: one full rib overlap, 1 line 5x6mm butyl sealant

Wall – vertically laid:

End laps: 100mm, 1 line low modulus gun applied sealant.
Side laps: one full rib overlap, 1 line low modulus gun applied sealant.

Wall – horizontally laid:

End laps: 150mm, 2 lines low modulus gun applied sealant.
Side laps: one full rib overlap, 1 line low modulus gun applied sealant.
Sealant strips should be overlapped by 25mm, avoid stretch of sealant at profile corners etc.
Bed filler blocks in sealant to ensure best seal.

TF32/1000R

<p>Fastener frequency</p>	<p>Roof: End laps and perimeters (ridge/eaves, penetrations): 4No/m (every trough) central to a 150mm end lap. Edge distance minimum 30mm. Standard (intermediate supports): 4No/m (every trough) Side laps: Stitch at max 450mm centres.</p> <p>Wall – vertically laid: End laps and perimeters (top/bottom of walls, penetrations): 4No/m (every trough) central to a 100mm end lap. Edge distance minimum 30mm. Standard (intermediate supports): 4No/m (every trough) or 3No/m, subject to wind load design. Side laps: When specified, stitch at max 600mm centres.</p> <p>Wall – horizontally laid: End laps and perimeters (top/bottom of walls, penetrations): 4No/m (every trough) central to a 100mm end lap. Edge distance minimum 30mm. Standard (intermediate supports): 4No/m (every trough) or 3No/m, subject to wind load design. Side laps: When specified, stitch at max 600mm centres.</p>
<p>Fastener types</p>	<p>Roof: A2 stainless steel or carbon steel 5.5mm Ø, 19mm Ø sealer washer, colour matched head Stitchers: A2 stainless steel or carbon steel 5.5mm or 6.3mm Ø, 16mm Ø sealer washer, colour matched head.</p> <p>Wall: A2 stainless steel or carbon steel 5.5mm Ø, 16mm or 19mm Ø sealer washer, colour matched head Stitchers: A2 stainless steel or carbon steel 5.5mm or 6.3mm Ø, 16mm Ø sealer washer, colour matched head. Minimum embedment to timber 40mm. Note: A4 stainless fasteners required in coastal areas (within 2km of sea water)</p>
<p>Sealant types</p>	<p>Roof: Sealant: 5 x 6mm Class A butyl</p> <p>Wall – horizontally laid: Sealant: low modulus, non-setting, neutral cure, gun applied</p>
<p>Delivery</p>	<p>Load direct to roof or store at ground level in a protected area, on bearers (placed above each other), at a slope to drain, under tarpaulin if to be stored for longer than a week. Lift with care (do not drag sheets): <6m- by site telehandler or forklift with tines set apart, 1 pack at a time, >6m by crane using slings (not chains). Load to rafter backs. Inspect packs and record any damage/shortages on delivery paperwork, backed by photos to be sent to Trimform with a report within 48 hours.</p>
<p>Site work</p>	<p>The installer must comply with current safety and CDM regulations. Guidance is available at www.mcrma.co.uk, CDM2015 tab and Roof Safety tab. Side laps should face away from the prevailing wind Before installation check that the supporting structure is in a fit condition and to an acceptable installation tolerance to receive the roof and wall construction. Fully fix as work proceeds, a profile is only walkable and non-fragile when fixed. Do not over drive fasteners causing washer dishing. Where profiles have to be cut on site:</p> <ul style="list-style-type: none"> • Use a powered nibbler, reciprocating saw or circular saw. Do not use an abrasive wheel. • Support the profile along the line of the cut. • Protect the pre-coated finishes of the profile. • Clean any swarf or debris from the pre-coated finish of the profile immediately. <p>Minor scuffing of the colour coating should not be treated. Deeper scratches which reach the substrate should be repaired with touch-up paint. The touch-up paint should only be applied to the original scratch using a fine paint brush. As touch-up paint will dry to a slightly different colour than the original coating the area which is touched up should be kept as small as possible. Keep foot traffic and following trades traffic to a minimum.</p>

TF32/1000R

Performance

Structural

The loads shown are kN/m², permissible for the profiles at the spans shown (ie load factors are within the tables, compare with unfactored loads).

- The designer must separately check fastener capacity under negative loads (wind uplift/suction).
- Minimum bearing width 40mm.
- “Single” = spanning over 2 purlins, “double” = 3 purlins, “multi” = 4 or more purlins.
- Avoid single spans wherever possible.
- In general, for foot traffic, use crawl boards or additional protection on support centres greater than 1.8 m for 0.7mm steel profiles and 1.4 m for 0.5mm steel profiles.
- Consider crawl boards or additional protection in all cases where the sheets are single spanning.
- For spans exceeding 1.8m refer to Trimform.

BS 5427:16: Appendix C.5.6.4: Partial safety factors for limit state design. Load factors included within the load/span tables:

- Variable loads factor 1.5
- Permanent load factor 1.35
- Accidental load factor 1.0
- Serviceability load factor 1.0

Table 10: Deflection:

- Roofs – imposed loads- L/200
- Roofs –wind L/90
- Walls – wind L/90

0.7mm steel

Section Properties	f _u = 220N/mm ²		E = 210kN/mm ²		Broad flange in compression		Narrow flange in compression		
	t _N mm	Weight kg/m ²	Web crushing R _{w,Rd} kN/m		M _{b,Rd} kNm/m	I _{b,Rd} cm ⁴ /m	M _{n,Rd} kNm/m	I _{n,Rd} cm ⁴ /m	
	0.7	6.70	8.786		0.980	9.811	0.925	10.326	
TF32/1000 R Roof: 0.7mm steel Negative/wind uplift	Span		1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single		3.63	3.09	2.67	2.32	2.04	1.81	1.61
	Double		2.28	2.02	1.80	1.61	1.45	1.32	1.20
	Multi		2.72	2.41	2.15	1.93	1.75	1.59	1.45
TF32/1000 R Roof: 0.7mm steel Positive/imposed downward	Span		1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single		3.43	2.92	2.52	2.19	1.93	1.71	1.46
	Double		2.35	2.08	1.86	1.67	1.50	1.37	1.24
	Multi		2.80	2.49	2.22	2.00	1.81	1.64	1.50
TF32/1000 R Roof: 0.7mm steel Positive/snow drift loads	Span		1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single		5.14	4.38	3.78	3.29	2.89	2.56	2.28
	Double		3.53	3.12	2.78	2.50	2.26	2.05	1.87
	Multi		4.21	3.73	3.33	2.99	2.71	2.46	2.25
TF32/1000 R Wall: 0.7mm steel Negative/wind suction	Span		1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single		3.63	3.09	2.67	2.32	2.04	1.81	1.61
	Double		2.28	2.02	1.80	1.61	1.45	1.32	1.20
	Multi		2.72	2.41	2.15	1.93	1.75	1.59	1.45
TF32/1000 R Wall: 0.7mm steel Positive/wind pressure	Span		1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single		3.43	2.92	2.52	2.19	1.93	1.71	1.52
	Double		2.35	2.08	1.85	1.66	1.50	1.36	1.24
	Multi		2.80	2.48	2.22	2.00	1.80	1.64	1.50

TF32/1000R

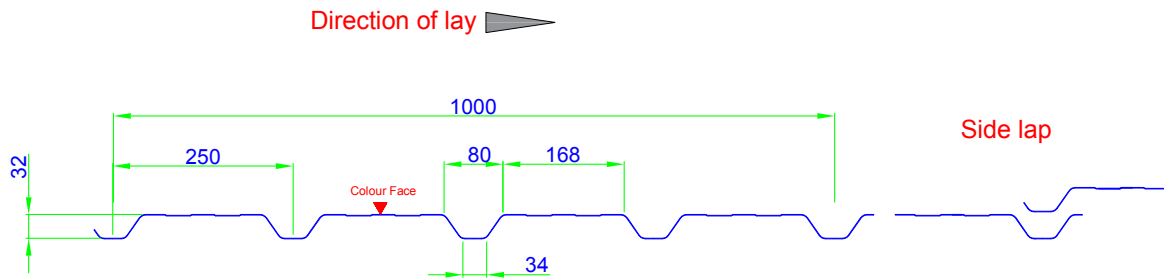
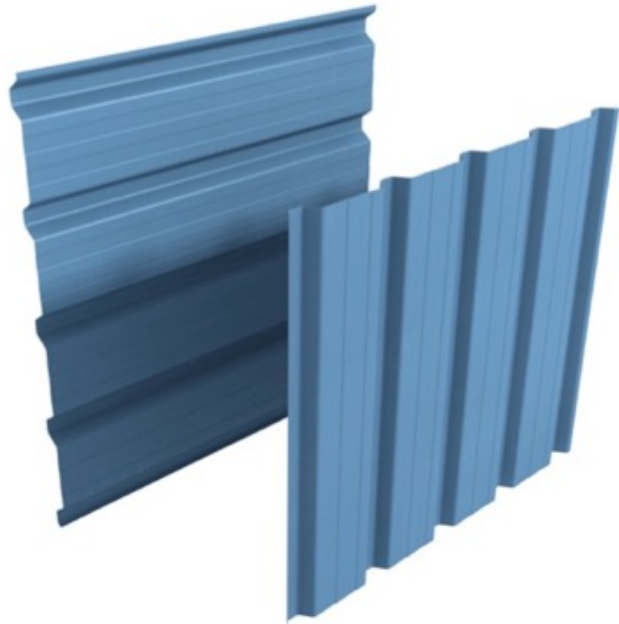
0.5mm steel								
Section Properties	$f_u = 220\text{N/mm}^2$		$E = 210\text{kN/mm}^2$		Broad flange in compression		Narrow flange in compression	
	t_N mm	Weight kg/m ²	Web crushing $R_{w,Rd}$ kN/m		$M_{b,Rd}$ kNm/m	$I_{b,Rd}$ cm ⁴ /m	$M_{n,Rd}$ kNm/m	$I_{n,Rd}$ cm ⁴ /m
	0.5	4.8	4.036		0.649	6.019	0.552	6.317
TF32/1000 R Roof: 0.5mm steel Negative/wind uplift	Span	1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single	2.40	2.05	1.77	1.54	1.35	1.20	1.07
	Double	1.19	1.06	0.95	0.86	0.78	0.71	0.65
	Multi	1.42	1.26	1.13	1.02	0.93	0.84	0.77
TF32/1000 R Roof: 0.5mm steel Positive/imposed downward	Span	1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single	2.04	1.74	1.50	1.31	1.15	1.02	0.91
	Double	1.28	1.14	1.03	0.93	0.84	0.77	0.71
	Multi	1.52	1.36	1.22	1.10	1.00	0.92	0.84
TF32/1000 R Roof: 0.5mm steel Positive/snow drift loads	Span	1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single	3.07	2.61	2.25	1.96	1.73	1.53	1.36
	Double	1.93	1.72	1.54	1.39	1.26	1.15	1.06
	Multi	2.28	2.03	1.83	1.65	1.51	1.38	1.26
TF32/1000 R Wall: 0.5mm steel Negative/wind suction	Span	1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single	2.40	2.05	1.77	1.54	1.35	1.20	1.07
	Double	1.19	1.06	0.95	0.86	0.78	0.71	0.65
	Multi	1.42	1.26	1.13	1.02	0.93	0.84	0.77
TF32/1000 R Wall: 0.5mm steel Positive/wind pressure	Span	1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single	2.04	1.74	1.50	1.31	1.15	1.02	0.91
	Double	1.28	1.14	1.03	0.93	0.84	0.77	0.70
	Multi	1.52	1.35	1.22	1.10	1.00	0.92	0.84
Non Fragility	ACR[M]001:2015 - Test For Non-Fragility of Large Element Roofing Assemblies [fifth edition] 0.7mm: Class B when screw fixed as described in the Installation section 0.5mm: Class B when screw fixed as described in the Installation section							
Durability	<p>Refer to Trimform for the durability performance of a particular material.</p> <p>In general:- PVC plastisol finishes have a surface texture (leather grain or scintilla), polyester finishes are smooth. 200µm plastisol PVC paint finishes are most tolerant of foot traffic and installation and are particularly suited to roofing. Colorcoat HPS200 Ultra® has the longest manufacturer-to-building owner guarantee (Confidex®, up to 40 years) Polyester coated materials are the most economic choice. High Build Polyester (HBP) has the best durability and tolerance of installation of the smooth finish polyester painted materials. Standing water must be avoided on pre-painted steel. Pre-painted finishes perform better if exposed to rainwash, this applies to roofs and walls. Roofs and walls should be inspected annually and any debris or items standing on the painted surface removed (build ups of moss/ leaves/ builders debris, dead birds etc). Damage to painted surfaces must be repaired.</p>							
Fire properties	<p>Plastisol coated (PVC) steel: External fire performance: European: EN14782:06:5.1.2: Class Broof t(1, 2, 3, 4). Reaction to fire: C-s3,d1 National: notional designation of AA and has a Class 0 or 'low risk' surface as defined in the various national Building Regulations.</p> <p>Polyester coated (PE) steel: External fire performance: European: EN14782:06:5.1.2: Class Broof t(1, 2, 3, 4). Reaction to fire: A2-s3,d0 National: notional designation of AA and has a Class 0 or 'low risk' surface as defined in the various national Building Regulations.</p>							

TF32/1000R

References			
Reference Standards	<table border="1"> <tr> <td> BS EN 508-1:2014 BS EN 14782:2006 BS EN 10346: 2015 BS 5427:2016 MCRMA GD 20 Guidance document on serviceability states and deflection criteria </td> <td> BS EN 1991-1-3:2003+A1:2015 EN13501-5:2016 ACR[M]001:2014 :5th Edition. MCRMA Guidance Documents and Design Guides www.mcrma.co.uk </td> </tr> </table>	BS EN 508-1:2014 BS EN 14782:2006 BS EN 10346: 2015 BS 5427:2016 MCRMA GD 20 Guidance document on serviceability states and deflection criteria	BS EN 1991-1-3:2003+A1:2015 EN13501-5:2016 ACR[M]001:2014 :5 th Edition. MCRMA Guidance Documents and Design Guides www.mcrma.co.uk
BS EN 508-1:2014 BS EN 14782:2006 BS EN 10346: 2015 BS 5427:2016 MCRMA GD 20 Guidance document on serviceability states and deflection criteria	BS EN 1991-1-3:2003+A1:2015 EN13501-5:2016 ACR[M]001:2014 :5 th Edition. MCRMA Guidance Documents and Design Guides www.mcrma.co.uk		
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TF32/1000W

Description	
Application	Single skin or insulated twin skin walls, vertically or horizontally laid.
Profile depth	32mm
Profile cover width	1000mm
Profile pitch	250mm
Nominal profile weight	0.5mm = 4.8kg/m ² 0.7mm = 6.7kg/m ²
Pack weight	Max 2.0t
Lengths	Minimum length 0.20m Maximum length 10.00m
Curve options	N/A
CE reference	TF32/1000R (Roof profile - Trapezoidal): BS EN 14782:2006



Materials	<p>Substrate: 0.7mm steel, Class1, S220GD+Z275, AZ150 or ZA255 0.5mm steel, Class1, S220GD+Z275, AZ150 or ZA255</p> <p>Paint finish options: To standard colour charts. Plastisol PVC(P), 200µm Polyester SP, 25µm High Build Polyester HBP, 50µm Colorcoat HPS200 Ultra®, 200µm</p> <p>Other: Enquire with Trimform Products for the availability of aluminium and other paint finishes such as PVdF and Agri-Steel™</p>
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TF32/1000W

Installation

TF32/1000 W: outer wall sheet: fixing guide -

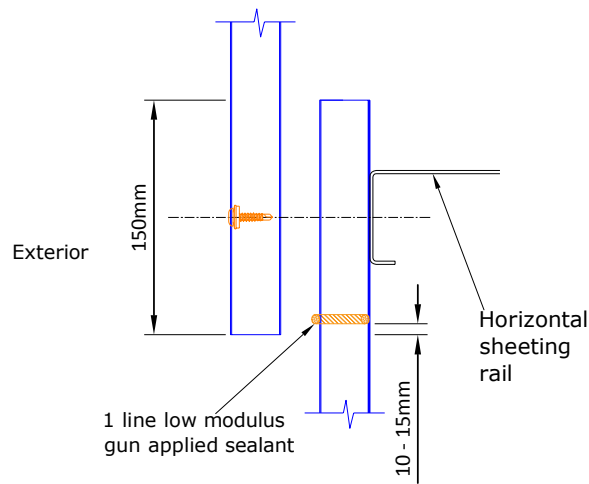
Standard fixing positions



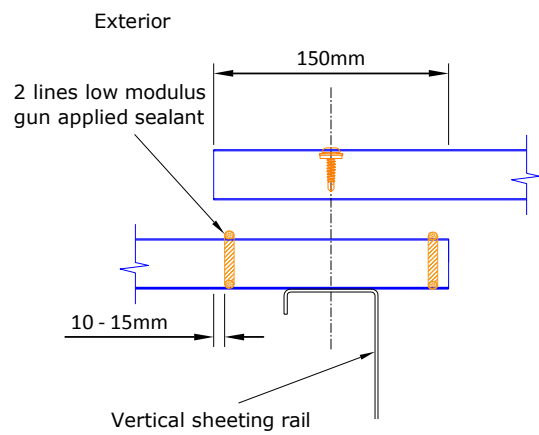
End lap fixing positions



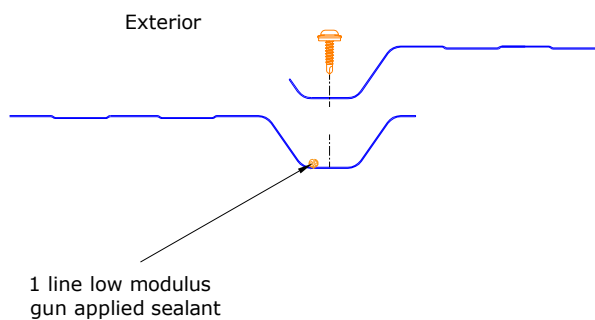
End lap - Vertical wall sheet



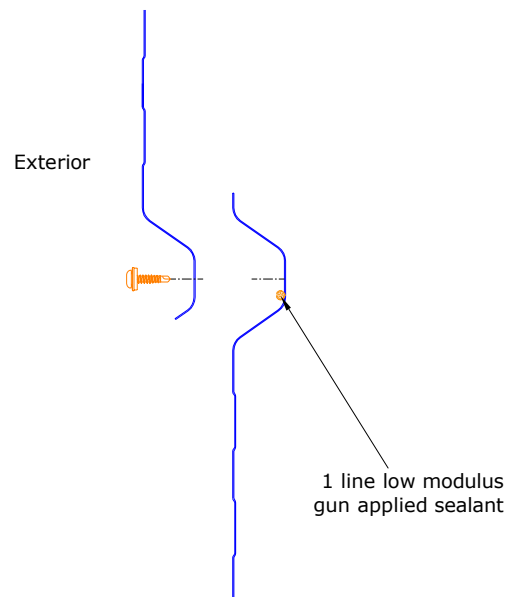
End lap - Horizontal wall sheet



Side lap - Vertical wall sheet



Side lap - Horizontal wall sheet






TF32/1000W

<p>Laps/Sealants</p>	<p>Wall – vertically laid: End laps: 100mm, 1 line low modulus gun applied sealant. Side laps: one full rib overlap, 1 line low modulus gun applied sealant. Wall – horizontally laid: End laps: 150mm, 2 lines low modulus gun applied sealant. Side laps: one full rib overlap, 1 line low modulus gun applied sealant. Sealant strips should be overlapped by 25mm, avoid stretch of sealant at profiles corners etc. Bed filler blocks in sealant to ensure best seal.</p>
<p>Fastener frequency</p>	<p>Wall – vertically laid: End laps and perimeters (top/bottom of walls, penetrations): 4No/m (every trough) central to a 100mm end lap. Edge distance minimum 30mm. Intermediate supports: 4No/m (every trough). Side laps: Stitch at max 600mm centres. Wall – horizontally laid: End laps and perimeters (top/bottom of walls, penetrations): 4No/m (every trough) central to a 100mm end lap. Edge distance minimum 30mm. Intermediate supports: 4No/m (every trough) or 3No/m, subject to wind load design. Side laps: stitch at max 600mm centres.</p>
<p>Fastener types</p>	<p>A2 stainless steel or carbon steel 5.5mm Ø, 16mm or 19mm Ø sealer washer, colour matched head Stitches: A2 stainless steel or carbon steel 5.5mm or 6.3mm Ø, 16mm Ø sealer washer, colour matched head. Minimum embedment to timber 40mm. Note: A4 stainless fasteners required in coastal areas (within 2km of sea water)</p>
<p>Sealant types</p>	<p>Low modulus, non setting, neutral cure, gun applied</p>
<p>Delivery</p>	<p>Store at ground level in a protected area, on bearers (placed above each other), at a slope to drain, under tarpaulin if to be stored for longer than a week. Lift with care (do not drag sheets): <6m- by site telehandler or forklift with tines set apart, 1 pack at a time, >6m by crane using slings (not chains). Inspect packs and record any damage/shortages on delivery paperwork, backed by photos to be sent to Trimform with a report within 48 hours.</p>
<p>Site work</p>	<p>Side laps should face away from the prevailing wind Before installation check that the supporting structure is in a fit condition and to an acceptable installation tolerance to receive the wall construction. Do not over drive fasteners causing washer dishing Where profiles have to be cut on site:</p> <ul style="list-style-type: none"> • Use a powered nibbler, reciprocating saw or circular saw. Do not use an abrasive wheel. • Support the profile along the line of the cut. • Protect the pre-coated finishes of the profile. • Clean any swarf or debris from the pre-coated finish of the profile immediately. <p>Minor scuffing of the colour coating should not be treated. Deeper scratches which reach the substrate should be repaired with touch-up paint. The touch-up paint should only be applied to the original scratch using a fine paint brush. As touch-up paint will dry to a slightly different colour than the original coating the area which is touched up should be kept as small as possible. Protect from following trades.</p>

TF32/1000W

Performance								
Structural	<p>The loads shown are kN/m², permissible for the profiles at the spans shown (ie load factors are within the tables, compare with unfactored loads).</p> <ul style="list-style-type: none"> • The designer must separately check fastener capacity under negative loads (wind uplift/suction). • Minimum bearing width 40mm. • “Single” = spanning over 2 purlins, “double” = 3 purlins, “multi” = 4 or more purlins. • For spans exceeding 1.8m refer to Trimform. <p>BS 5427:16: Appendix C.5.6.4: Partial safety factors for limit state design. Load factors included within the load/span tables:</p> <ul style="list-style-type: none"> • Variable loads factor 1.5 • Permanent load factor 1.35 • Accidental load factor 1.0 • Serviceability load factor 1.0 <p>Table 10: Deflection:</p> <ul style="list-style-type: none"> • Walls – wind L/90 							
	0.7mm steel							
Section Properties	f _u = 220N/mm ²		E = 210kN/mm ²		Broad flange in compression		Narrow flange in compression	
	t _N mm	Weight kg/m ²	Web crushing R _{w,Rd} kN/m		M _{b,Rd} kNm/m	I _{b,Rd} cm ⁴ /m	M _{n,Rd} kNm/m	I _{n,Rd} cm ⁴ /m
	0.7	6.7	8.785		0.979	9.81	0.925	10.33
TF32/1000 W Wall: 0.7mm steel Negative/wind suction	Span	1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single	3.43	2.92	2.52	2.19	1.93	1.71	1.52
	Double	2.35	2.08	1.85	1.66	1.50	1.36	1.24
	Multi	2.80	2.48	2.22	2.00	1.80	1.64	1.50
TF32/1000 W Wall: 0.7mm steel Positive/wind pressure	Span	1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single	3.63	3.09	2.66	2.32	2.04	1.81	1.61
	Double	2.28	2.02	1.80	1.61	1.45	1.32	1.20
	Multi	2.72	2.41	2.15	1.93	1.75	1.59	1.45
0.5mm steel								
Section Properties	f _u = 220N/mm ²		E = 210kN/mm ²		Broad flange in compression		Narrow flange in compression	
	t _N mm	Weight kg/m ²	Web crushing R _{w,Rd} kN/m		M _{b,Rd} kNm/m	I _{b,Rd} cm ⁴ /m	M _{n,Rd} kNm/m	I _{n,Rd} cm ⁴ /m
	0.5	4.8	4.036		0.648	6.018	0.552	6.317
TF32/1000 W Wall: 0.5mm steel Negative/wind suction	Span	1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single	2.04	1.74	1.50	1.31	1.15	1.02	0.91
	Double	1.28	1.14	1.03	0.93	0.84	0.77	0.70
	Multi	1.52	1.35	1.22	1.10	1.00	0.92	0.84
TF32/1000 W Wall: 0.5mm steel Positive/wind pressure	Span	1.20	1.30	1.40	1.50	1.60	1.70	1.80
	Single	2.40	2.04	1.76	1.54	1.35	1.20	1.07
	Double	1.19	1.06	0.95	0.86	0.78	0.71	0.65
	Multi	1.42	1.26	1.13	1.02	0.93	0.84	0.77

TF32/1000W

<p>Non Fragility to ACR[M]001</p>	<p>N/A</p>	
<p>Durability</p>	<p>Refer to Trimform for the durability performance of a particular material. In general:- PVC plastisol finishes have a surface texture (leather grain or scintilla), polyester finishes are smooth. 200µm plastisol PVC paint finishes are most tolerant of foot traffic and installation and are particularly suited to roofing. Colorcoat HPS200 Ultra® has the longest manufacturer-to-building owner guarantee (Confidex®, up to 40 years) Polyester coated materials are the most economic choice High Build Polyester (HBP) has the best durability and tolerance of installation of the smooth finish polyester painted materials. Pre-painted finishes perform better if exposed to rainwash. Damage to painted surfaces must be repaired.</p>	
<p>Fire properties</p>	<p>Plastisol coated (PVC) steel: External fire performance: European: EN14782:06:5.1.2: Class Broof t(1, 2, 3, 4). Reaction to fire: C-s3,d1 National: notional designation of AA and has a Class 0 or 'low risk' surface as defined in the various national Building Regulations. Polyester coated (PE) steel: External fire performance: European: EN14782:06:5.1.2: Class Broof t(1, 2, 3, 4). Reaction to fire: A2-s3,d0 National: notional designation of AA and has a Class 0 or 'low risk' surface as defined in the various national Building Regulations.</p>	
<p>References</p>		
<p>Reference Standards</p>	<p>BS EN 508-1:2014 BS EN 14782:2006 BS EN 10346: 2015 BS 5427:2016 MCRMA GD 20 Guidance document on serviceability states and deflection criteria</p>	<p>BS EN 1991-1-3:2003+A1:2015 EN13501-5:2016 ACR[M]001:2014 :5th Edition. MCRMA Guidance Documents and Design Guides www.mcrma.co.uk</p>
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TF32/1000W