Platinum® Plus Specification for Trisobuild® (roof system)

R - R32 - 240 - LP1000

Specification reference	70011221 - Trisobuild Roof
Date:	2020-08-17
Project name:	P10183 - Fortess Grove
Project address:	Fortess Grove, Kentish Town, London, United Kingdom
Project postcode:	NW5 2HD
Cladding area: (specified cladding, m²)	560m2 m²
Specifier company:	Premierseal Roofing
Company contact:	craig bartle
Contact phone and email:	07936368518 : craig.bartle@premierseal.co.uk

Specification status: Draft	**Created by:** Tech-Spec App	**Revision:**

System summary:	**Trisobuild™ Roof System with an external weathering profile, spacer system, insulation layer, and trapezoidal liner profile.**
External weathering profile:	R32, 0.7mm thick, Colorcoat HPS200 Ultra finish in Merlin Grey
Spacer system:	Instaloc Plus
Insulation layer:	240mm thick insulation zone (0.04W/mK) to provide a 0.18 W/m²K u-value
Liner profile:	LP1000, 0.4mm thick, Standard Lining Enamel® finish in Bright white
External fasteners:	Colour headed grade 304 austenitic stainless steel self drilling fastener. Drill point and thread form optimised to suit the support structure, with minimum 5.5mm diameter thread. 19mm diameter EPDM bonded sealing washer for increased

resistance to pull over and effective sealing against air and moisture. Coloured head to be PPC coated or injection moulded nylon encapsulated.

Internal fasteners: Mill finish grade 304 austenitic stainless steel self drilling fastener. Drill point and thread form optimised to suit the support structure, with minimum 5.5mm diameter thread. 19mm diameter EPDM bonded sealing washer for increased resistance to pull over and effective sealing against air and moisture.

Rooflights: Factory assembled in-plane rooflights (FAIRs) from Hambleside Danelaw Ltd with a Zenon Pro 24 external skin and Polycarbonate (4mm, U-value = 1.5W/mÃ ¨Â²K) internal core

Platinum Plus engineer: **Robert Taylor, T: 07900 165703, E: robert.x.taylor@tatasteeleurope.com**

Other Platinum® Plus approved products can be used if proven to be of similar performance.

Specification manager: **Jason Shears, T:07860 909798, E:jason.shears@tatasteeleurope.com**

Please contact your specification manager for a list of regional installation contractors

Quotations: Estimating T: 01244 89 2199

Alterations & variations: Any alterations required to this specification must be approved in advance by the technical department and a new specification will be issued.

* Care has been taken to ensure that the contents of this specification is accurate, but Tata Steel Europe Limited and its subsidiaries, (including Tata Steel UK Limited), do not accept responsibility or liability for errors or information that is found to be misleading.

Suggestions for, or descriptions of, the end use or application of products or methods of working are for information only and Tata Steel Europe Limited and its subsidiaries accept no liability in respect thereof.

Before using products or services supplied or manufactured by Tata Steel Europe Limited and its subsidiaries, customers should satisfy themselves as to their suitability.

Tata Steel UK Limited retain the right to amend this specification without prior notice.

For specifications over six months old we would advise a revision be obtained from the Tata Steel UK Technical Department.

Platinum Plus Guarantee:

The Platinum® Plus Guarantee provides up to 25 years on all components named within this specification.
All items specified herein can be covered by the Platinum® Plus Guarantee provided this specification is followed in its entirety and materials are installed as per Tata Steel and/or approved suppliers recommendations.
A Guarantee will not be issued if this specification is changed.
The Platinum® Guarantee must be applied for from Tata Steel on practical completion of the project.
The Platinum® Plus Engineer must be contacted at least two weeks prior to commencing on site to arrange a pre-meeting.

The following supporting documents can be found in the Appendix:	A - The Platinum® Process B - The Platinum® Plus application instructions C - The Platinum® Plus application Form D - The Confidex® application form E - Our Platinum® Plus supply chain partners F - Terms and Conditions
Quoting & ordering:	**The Platinum® Plus Guarantee reference number must be included on all correspondence to ensure the quotation is supplied in accordance with the specification requirement. Materials must be ordered as specified from the named supplier within the specification.** Materials must be ordered as specified from the named supplier within the specification.

Design Criteria:

U-value (W/m²K):	**0.18** U-values computer modelled in accordance with EN ISO 10211 as stated in MCRMA Technical note 14. 0.25W/m²K is the maximum u-value allowable in accordance with Building Regulations ADL2.
Cladding material:	Colorcoat HPS200 Ultra by Tata Steel pre-finished steel
Fixing to steelwork:	Cold Rolled Steel Purlins minimum thickness 1.5mm
Steel-work tolerance:	L/200
EXTERNAL ENVIRONMENT	
Project location:	Project > 1km and < 10km of coast or estuary
This specification assumes:	A coastal and marine environment, typically C4, C5-I & C5-M as defined in EN ISO 12944-2.
INTERNAL ENVIRONMENT	
Internal environmental class (to BS EN 10169:2010):	A1 non aggressive
This specification assumes:	A1 Environment - No chemical aggressivity, periodicity of cleaning operations with a neutral cleaning agent is not more than once per month. Occasional condensation

METAL PROFILED SHEET ROOF COVERING SYSTEM

Uniclass 2015 Code:	**Ss_30_40_65_50**

To be read with Preliminaries/ General conditions.

TYPES OF CLADDING/ COVERING SYSTEM

METAL BUILT UP CLADDING:

Cladding systems to be designed and installed to meet the local Building Regulations or Technical Standards

Drawing reference(s): Tata Steel's typical construction details to be used as guidance. (download at www.tatasteelconstruction.com)

Support structure: Purlins, minimum recommended thickness of 1.5mm steel

Bearing width (minimum): 60mm

Centres: Determined in accordance with design loads and Tata Steel load/span data sheets (download at www.tatasteelconstruction.com)

Minimum design pitch: 5.5° recommended for Trisobuild; 6.5° recommended for rooflights (To BS 5427: 2016)

Minimum pitch after deflections: 4° for Trisobuild; 5° for rooflights (To BS 5427: 2016)

EXTERNAL SHEET:

Manufacturer: Tata Steel UK Limited, Shotton Works. T: +44 (0) 1244 89 2199

External profile reference: R32

External profile outer finish: Colorcoat HPS200 Ultra

Colorcoat HPS200 Ultra® by Tata Steel – a super durable pre-finished steel, with the Confidex® Guarantee of up to 40 years for the weatherside of industrial and commercial buildings with no inspection or maintenance to maintain its validity. This also includes factory cut edges for the full guarantee period. Colorcoat HPS200 Ultra® has a 200µm nominal coating thickness with the Scintilla® emboss of nominal depth 40µm, delivering colour and gloss retention in excess of Ruv4 standard to EN 10169, and having a light grey high performance backing coat to the reverse. Integral to Colorcoat HPS200® Ultra is the use of Galvalloy® hot-dip metallic coating based on a zinc (95%): aluminium (5%) ZA255 alloy manufactured to EN 10346:2015, delivering exceptional corrosion resistance performance in excess of RC5 standard to EN 10169. Colorcoat HPS200 Ultra® is a 'chrome free' product, and is fully compliant with REACH legislation.

Metal thickness: 0.7mm

Outer colour: Merlin Grey

External profile inner finish: High Performance Polyester Standard Backing Coat

Inner colour: Light Grey

Cover-width: 1000mm

Primary external cladding sheet fasteners:	Colour headed grade 304 austenitic stainless steel self drilling fastener. Drill point and thread form optimised to suit the support structure, with minimum 5.5mm diameter thread. 19mm diameter EPDM bonded sealing washer for increased resistance to pull over and effective sealing against air and moisture. Coloured head to be PPC coated or injection moulded nylon encapsulated.
Primary fasteners supplied by:	SFS or Ejot UK Ltd
Fastener location:	Fix through profile trough.
Number and location of fasteners:	Generally fix through every trough at sheet ends (i.e. 5nr per support) and at every alternate trough at intermediate supports (i.e. 3nr per support). Fastener layout should be checked against negative wind loads for the project.
End laps:	Minimum 150mm
Sealing laps:	External end laps to be fully sealed External side laps to be fully sealed
Stitching laps:	
End Laps:	N/A
External profile side lap fasteners, at maximum 450mm centres:	Colour headed grade 304 austenitic stainless steel self drilling fastener. Drill point and thread form optimised to provide functional clamping, with minimum 5.5mm diameter thread. 16mm diameter EPDM bonded sealing washer for increased resistance to pull over, combined with a free spin zone for effective sealing against air and moisture. Coloured head to be PPC coated or injection moulded nylon encapsulated.
Sidelap fasteners supplied by:	SFS or Ejot UK Ltd
Sealant type:	6x5mm high grade butyl mastic strip sealant (minimum 25 year guarantee), used for both end and side laps.
Seals supplied by:	Brett Martin (Green Strip), Ejot Uk Ltd (Blue Strip), Premier Sealants (White Strip) or SFS (Pink Strip)
Seal quality:	Ensure continuity and effectiveness of seal, especially at corner of sheets.
End laps sealant positions:	Two lines of 6 x 5mm butyl mastic strip sealant (green, blue, white or pink strip as above, with minimum 25 year guarantee) placed between sheets prior to fixing, approximately 10 mm from the sheet ends at the top and bottom of the lap. Position sealant in straight, unbroken lines. Place into troughs. Do not allow to stretch or to sag into position.
Side laps sealant positions:	One continuous run of 6 x 5mm butyl mastic strip sealant (green, blue, white or pink strip as above, with minimum 25 year guarantee) to underlap crown, positioned on weather side of stitching fastener
SPACERS:	

Manufacturer:	Tata Steel UK, Shotton Works. T: +44 (0) 1244 89 2199
Alternative suppliers:	Please contact the Technical department
System:	Instaloc Plus
Bar:	Manufactured from 1.25mm high tensile hot-dip galvanised steel (S390GD+Z275 to EN 10346: 2015), incorporating a 40mm spigot end for easy on-site construction and to form a continuous level support. Stock lengths are 1200mm and 3600mm.
Bracket:	Manufactured from 1.6mm high tensile galvanised steel (S390GD+Z275 to EN 10346 :2015)
Bracket height (min):	240mm
Bracket spacing (max):	Typically 1200mm centres, however spacings should be checked against design loads.
NOTE: Loading of spacer system during construction phase:	Where the contractor wishes to load out packs of sheets onto the spacer system then, in order to maintain the integrity of the system, it is usually necessary to provide additional support for the bar.
Note: Bracket spacing over rooflight area:	For safety reasons it is recommended practice to position brackets to either side of the rooflight tiers to typically 1200mm.
Fasteners (spacer bracket to purlin):	Mill finish grade 304 austenitic stainless steel self drilling fastener, 2nr per bracket. Drill point and thread form optimised to suit the support structure, with minimum 5.5mm diameter thread. 15mm diameter EPDM bonded sealing washer for increased resistance to pull over.
Fasteners supplied by:	Please contact the Technical department
MINERAL WOOL THERMAL INSULATION:	
Standard To BS EN 13162	
Type:	Glass-wool insulation
Manufacturer:	Knauf Insulation, Saint-Gobain ISOVER, or Superglass Insulation Limited
	Or similar performing product
Insulation thickness (mm):	240
	(the above thickness based on a thermal conductivity = 0.040 W/mK.)
U-value (W/m²K):	0.18
	Calculated in accordance with the Building Regulations 2000, Approved Document L2 2010, allowing for bridging effects of spacers and profiles
Placement:	Install insulation as work proceeds ensuring all edges are close butt-jointed to achieve continuity between spacers.
	Insulation quilt to be cut and tucked under Spacer bar so that there is no air gap

	under the bar. Keep dry.
STEEL LINING:	
Manufacturer:	Tata Steel UK Limited, Shotton Works T: 01244 89 2199
Liner profile reference:	LP1000
Internal finish:	Standard Lining Enamel
	Tata Steel Colorcoat PE15® pre-finished steel using hot-dip galvanised steel EN 10326:2015 substrate.
Metal thickness:	0.4mm
Internal colour:	Bright white
Primary sheet fixings:	Mill finish grade 304 austenitic stainless steel self drilling fastener. Drill point and thread form optimised to suit the support structure, with minimum 5.5mm diameter thread. 19mm diameter EPDM bonded sealing washer for increased resistance to pull over and effective sealing against air and moisture.
Fasteners supplied by:	SFS or Ejot UK Ltd
Number and location of fasteners:	Minimum 3nr fixings per sheet at all supports, based on minimum 19mm washers. The fastener must be located at least 30mm from the end of the sheet for double- and multi-span conditions and at least 100mm for single span conditions. The number of fixings per sheet must be increased proportionally when the sheet is cut at rake i.e. at hips.
End laps:	Not less than 60mm for double and multi span layout, Not less than 200mm for single span layout
Non-fragility classification:	Liner panel to achieve minimum Class C non-fragile assembly when tested to ACR(M) 001:2005 'Test for Fragility of Roofing Assemblies (second edition).
Joint sealing:	Joint sealing is required.
	See WATER VAPOUR AND AIR SEALING USING METAL LINER.
SOUND TRANSMITTANCE / REDUCTION:	
Weighted sound reduction Index:	47.6 Rw dB
	For information on individual frequency ratings please contact the Technical Department on 01244 89 2199.
	The acoustic performance of the profiled metal cladding construction detailed above has been predicted using the 2016 version of the computer programme developed by the Department of Applied Acoustics at the University of Salford under a research contract funded by the Metal Cladding and Roofing Manufacturers Association.
	Laboratory measurements should be used to provide definitive acoustic data.

Predicted SRI values should be used only to provide guidance for preliminary design and/or appraisal of cladding systems.

PROFILE FILLERS GENERALLY:

Fillers supplied by: Ejot UK Ltd, Brett Martin, Premier Sealants

Note: (Brett Martin are approved for Superseal profile fillers only)

External skin: R32

Internal skin: LP1000

Material: EPDM, MP or Superseal

Colour: Black

Thickness: 25mm

Fixing: Locate to close off corrugation cavities from the outside of the building.

Compression fix between sheets and flashings / supports.

Sealant applied to both top and bottom.

Ensure a tight fit and leave no gaps.

WATER VAPOUR AND AIR SEALING USING METAL LINER:

The envelope cladding system and its junction details must be airtight so that the air permeability of the building does not exceed 10m³/h/m² at an applied pressure of 50 Pa, in accordance with the Building Regulations for England and Wales (Part L2) and Scotland (Technical Handbook Section 6 Energy).

The liner sheet generates the air tightness within the Built-Up System.

High grade butyl mastic (minimum 25 year guarantee) is used to seal the overlap joint between adjacent sheets and flashings and sealed fillers are used at end positions.

In laboratory tests, all liner profile junctions have been shown to have an air leakage of <0.30m³/h/m.

A practical expectation for a finished building, with effective sealing at all junctions would be 5-10m³/h/m² at 50Pa.

However enhanced detailing on large shed buildings can realise air leakage performance figures of less than 3m³/h/m².

Sealant types: End laps: 4mm diameter bead butyl mastic strip sealant (minimum 25 year guarantee)

Side Laps: 50mm x 1mm butyl mastic strip sealant (minimum 25 year guarantee) with plastic backing strip.

Seals supplied by: Brett Martin (Green Strip), Ejot Uk Ltd (Blue Strip), Premier Sealants (White Strip) or SFS (Pink Strip)

Seal quality: Ensure continuity and effectiveness of seal, especially at corner of sheets. Do not over-compress.

End laps sealant positions: One line of 4mm diameter butyl mastic strip sealant (minimum 25 year guarantee) placed between sheets prior to fixing, position sealant in straight, unbroken lines. Place into troughs. Do not allow to stretch or to sag into position.

Side laps sealant positions: One continuous run of 50 x 1mm butyl mastic strip sealant (minimum 25 year guarantee) positioned on centrally over the top of the lap.

Profile fillers: Provide profiled filler blocks to close open flutes of lining panels, seal filler blocks top and bottom in continuous strip sealant. Filler blocks to be EPDM, MP or Superseal.

Fillers supplied by: Ejot UK Ltd, Brett Martin, Premier Sealants

Note: (Brett Martin are approved for Superseal profile fillers only)

Internal flashing: Provide internal flashings to ensure continuity and effectiveness of seal, especially at corners of sheets such as at roof / wall junctions and at all penetrations of pipes, ducts, rooflights, etc.

FLASHING & TRIM DETAILS:

System type: Standard Press brake 0.7mm Colorcoat® pre-finished steel flashing

Material and finish: To match outer sheet, 0.7mm minimum gauge.

Manufacturer: Tata Steel UK, Shotton Works T: 01244 89 2199

Lap joint treatment: End joints to be lapped by 150 mm and sealed, unless specified otherwise.

Where possible arrange with laps away from the prevailing wind.

Where butt joints are required, butt join and seal flashings / trims on 150 mm wide butt straps made from sheet of the same material and finish.

Design: Maximum un-stiffened leg on flashing to be 200mm.

Visible free edges to be finished with a stiffened edge or welt.

Position of fasteners: Max 450mm centres

Fasteners: Coloured injection moulded nylon encapsulated head austenitic stainless steel, minimum 304 grade self drilling fastener. Minimum 5.5mm diameter buttress thread with self-piercing drill point minimising swarf during installation, incorporating a 15mm diameter EPDM bonded sealing washer. Integral moulded head fully protecting the 15mm washer to provide superior pullover resistance and to provide an air seal and maximum resistance to water ingress.

Fasteners supplied by: SFS or Ejot UK Ltd

System type: Colorcoat® pre-finished steel fabricated items (e.g. ridge, verge, eaves details etc.)

Material and finish:	TBC
Manufacturer:	Tata Steel UK Limited, Shotton Works T: 01244 89 2199
System type:	Large openings (e.g. vents, large ducting etc.)
Material and finish:	Bespoke design and on site applied reinforced, liquid weatherproofing soaker systems
Soakers supplied by:	M R Site Services
Alternative supplier:	Jones and Woolman

DESIGN:

Roof cladding to be designed in accordance to BS 5427 and manufacturers design and installation recommendations.

THERMAL BRIDGING:

Use recommended construction details as design guidance to reduce thermal bridging.

Go to www.tatasteelconstruction.com to download typical details.

DESIGN FACTORS:

DEFLECTION OF METAL CLADDING:

Maximum permitted roof cladding deflection under distributed loads: Span/200

FIXING PANELS GENERALLY:

Cut sheets to give clean, true lines with no distortion and without damage to any protective coating.

Remove burrs and any lubricant.

Cut openings in sheets for outlets, vent pipes, flues, etc. to the minimum size necessary.

Reinforce edges of openings with suitable steel support.

Drill all holes. Remove all drilling swarf, dust and any other foreign matter before placing any membranes or insulation.

Protect sheets during fixing and up to Practical Completion against mechanical damage, corrosion and disfigurement.

Rectify any defects as quickly as possible to minimise damage and nuisance.

IN-PLANE ROOFLIGHTS

Manufacturer:	Hambleside Danelaw Ltd
Alternative suppliers:	Brett Martin Daylight Systems Filon Products Ltd NOTE: This specification is based on a Hambleside Danelaw product and should be read in conjunction their recommendations and construction details. If an alternative Approved Supplier Systems specification is required, a revised specification needs to be obtained through the Tata Steel's Technical Department.
System:	Zenon Pro 24
External sheet:	Zenon Pro 24
Weight:	2.4kg/m²
External sheet coverwidth:	1000mm
Internal core sheet:	Polycarbonate (4mm, U-value = 1.5W/mÃ ¦ Â²K)
Internal reinforcement:	High compression resistance fillers at intermediate purlin positions and box liner ends to provide the imposed load resistance required to withstand high snow loads and accidental foot traffic plus optimum support to main fastener washers ensuring a positive seal .
Internal liner sheet:	GRP clear translucent sheet for factory assembled Trisomet® rooflights
Liner sheet coverwidth:	1000mm
Liner sheet weight:	1.5kg/m²
Support spacing:	Maximum 2.05m
Primary FAIRs fasteners:	Poppy red coloured injection moulded nylon encapsulated head austenitic stainless steel, minimum 304 grade self drilling fastener. Minimum 5.5mm diameter thread, incorporating a 29mm diameter EPDM bonded sealing washer. Integral moulded head protecting and supporting the 29mm diameter washer to provide superior pullover resistance and to provide an air seal and maximum resistance to water ingress.
Primary FAIRs fasteners supplied by:	SFS, Ejot UK Ltd or PMJ-tec Ltd
Number and location of fasteners:	Fix using one fastener either side of the profile rib at every purlin position (i.e., six fasteners per panel per support). FAIRs incorporate rigid internal reinforcement at each purlin position; it is essential that these are located directly over the purlin (or on extension brackets) at the top and at each intermediate position, so that the main fastener passes through them when locating into the purlin.
External end laps:	Minimum 150mm. Stitching not required.
External side lap stitching, at maximum 450mm centres:	Poppy red coloured headed 304 austenitic stainless steel self-drilling fasteners at approx. 300 mm centres, with minimum 5.5mm diameter buttress thread with a

	flat top, incorporating a 14mm EPDM sealing washer with 40 shore hardness in conjunction with a free spin zone and under head recess for improved pull over resistance.
Stitcher fasteners supplied by:	SFS, Ejot UK Ltd or PMJ-tec Ltd
Sealing external end laps:	At end laps 2 continuous runs of 6x5mm high grade butyl mastic (minimum 25 year guarantee) applied in straight unbroken lines, positioned at a maximum of 50 mm apart centrally above and below the line of fixings. A third run of gun grade silicone sealant (ISO11600-F-25LM) to be within 15mm of the leading edge of overlapping panel.
Sealing external side laps:	Single strip of 6x5mm high grade butyl mastic (minimum 25 year guarantee) - positioned on the crown of the sheet just outside the line of sidelap fasteners. At end laps, the side lap should be positioned between every sheet.
Seals supplied by:	Brett Martin (Green Strip), Ejot Uk Ltd (Blue Strip), Premier Sealants (White Strip) or SFS (Pink Strip)
Durability:	Comprehensive 25 year durability warranty
Light transmission:	Please contact the Technical department
UV protection:	Please contact the Technical department
External fire rating:	Please contact the Technical department
Internal fire rating:	Please contact the Technical department
U-Value:	Please contact the Technical department
Note on series:	Please contact the Technical department
Purlin land:	Please contact the Technical department
Fragility class:	Please contact the Technical department