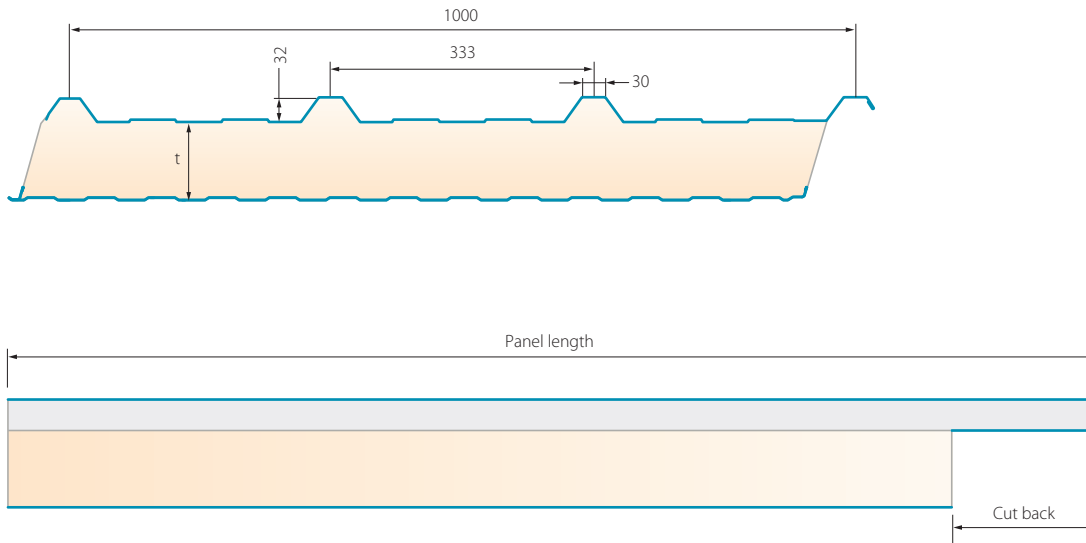


System performance data

Trisomet®



General panel information

Thickness, t (mm)	40, 60, 80, 100, 120 and 135
Maximum length (mm)*	20000
Minimum length (mm)	300
Cutback (mm)**	
Minimum	25
Maximum	250***
Weight (based on thickness mm) (kg/m ²)	
40	9.23
60	10.01
80	10.40
100	11.22
120	12.03
135	12.76

* The panel length is measured by the length of the external sheet, as shown above. Lengths over 14000 mm will be subject to additional delivery charges.

** Panels will always have one flush end and one cutback end; therefore, they will be handed and should be ordered according to the direction of lay required.

*** Recommended end laps are 50 mm for horizontal, 100 mm for vertical and 150 mm for roof applications.

Panel manufacturing tolerance

Cover width (mm)	±2
Thickness (mm)	±2
Squareness (mm)	<6
Cutback (mm)	-2 +5
Length (mm) < 3 m	±5
Length (mm) > 3 m	±10

Tolerance is in accordance with BS EN 14509.

General reference

All measurements throughout this brochure are referenced in mm unless stated otherwise. Technical illustrations are not to scale.

Span/load tables

The span tables below have been created in accordance with BS EN 14509.

The values are based on a 0.5 mm external face, a 2.0 mm minimum purlin thickness, and a maximum permitted cladding deflection of Span/200 under imposed load.

Safe imposed (positive) loads (kN/m²)

Span condition	Core thickness (mm)	Span (m)												
		1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6
Single	40	3.31	2.74	2.32	1.99	1.73	1.51	1.33	1.09	0.88	0.71	0.58	0.47	0.39
	60	4.20	3.59	3.13	2.76	2.45	2.18	1.95	1.69	1.45	1.25	1.08	0.93	0.79
	80	5.10	4.47	3.97	3.55	3.19	2.88	2.60	2.32	2.01	1.76	1.54	1.35	1.20
	100	6.02	5.35	4.81	4.35	3.95	3.59	3.27	2.96	2.60	2.29	2.03	1.80	1.60
	120	6.94	6.25	5.67	5.17	4.72	4.31	3.94	3.60	3.20	2.84	2.53	2.26	2.03
	135	7.64	6.92	6.32	5.78	5.30	4.86	4.44	4.08	3.65	3.26	2.91	2.62	2.36
Double	40	3.06	2.33	1.84	1.50	1.25	1.06	0.91	0.79	0.69	0.61	0.55	0.49	0.44
	60	3.39	2.62	2.10	1.73	1.46	1.24	1.08	0.94	0.84	0.74	0.67	0.60	0.55
	80	3.71	2.90	2.34	1.94	1.64	1.41	1.23	1.08	0.96	0.86	0.78	0.70	0.64
	100	4.00	3.15	2.57	2.14	1.82	1.57	1.37	1.21	1.08	0.97	0.87	0.79	0.72
	120	4.28	3.40	2.78	2.33	1.99	1.72	1.51	1.33	1.19	1.07	0.97	0.88	0.80
	135	4.48	3.57	2.93	2.46	2.11	1.83	1.60	1.42	1.27	1.14	1.03	0.94	0.86
Multi	40	3.31	2.66	2.10	1.71	1.42	1.21	1.04	0.91	0.80	0.71	0.64	0.57	0.52
	60	3.82	2.93	2.34	1.92	1.62	1.39	1.20	1.06	0.94	0.84	0.76	0.69	0.62
	80	4.12	3.19	2.56	2.12	1.80	1.55	1.35	1.19	1.06	0.95	0.86	0.79	0.72
	100	4.39	3.43	2.78	2.31	1.97	1.70	1.49	1.32	1.18	1.06	0.96	0.88	0.80
	120	4.66	3.66	2.98	2.49	2.12	1.84	1.61	1.43	1.28	1.16	1.05	0.96	0.88
	135	4.85	3.83	3.13	2.62	2.24	1.94	1.71	1.51	1.36	1.22	1.11	1.02	0.93

Safe wind suction (negative) loads (kN/m²)

Span condition	Core thickness (mm)	Span (m)												
		1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6
Single	40	-3.45	-2.88	-2.46	-2.14	-1.87	-1.65	-1.47	-1.32	-1.19	-1.07	-0.97	-0.85	-0.73
	60	-4.35	-3.75	-3.29	-2.92	-2.60	-2.34	-2.11	-1.91	-1.73	-1.58	-1.44	-1.32	-1.22
	80	-5.27	-4.63	-4.13	-3.72	-3.36	-3.05	-2.77	-2.52	-2.30	-2.11	-1.94	-1.78	-1.64
	100	-6.20	-5.53	-4.99	-4.53	-4.13	-3.77	-3.45	-3.15	-2.89	-2.66	-2.45	-2.26	-2.09
	120	-7.14	-6.44	-5.86	-5.36	-4.91	-4.50	-4.13	-3.80	-3.49	-3.22	-2.97	-2.74	-2.52
	135	-7.85	-7.12	-6.52	-5.98	-5.50	-5.06	-4.65	-4.28	-3.95	-3.64	-3.36	-3.11	-2.80
Double	40	-3.10	-2.38	-1.91	-1.58	-1.35	-1.16	-1.02	-0.91	-0.82	-0.75	-0.68	-0.63	-0.58
	60	-3.44	-2.68	-2.17	-1.82	-1.55	-1.35	-1.19	-1.07	-0.96	-0.88	-0.81	-0.75	-0.69
	80	-3.76	-2.97	-2.42	-2.04	-1.75	-1.53	-1.35	-1.21	-1.10	-1.00	-0.92	-0.85	-0.79
	100	-4.07	-3.23	-2.66	-2.24	-1.93	-1.69	-1.50	-1.35	-1.22	-1.12	-1.03	-0.95	-0.89
	120	-4.36	-3.49	-2.88	-2.44	-2.11	-1.85	-1.64	-1.48	-1.34	-1.22	-1.13	-1.05	-0.97
	135	-4.57	-3.67	-3.04	-2.58	-2.23	-1.96	-1.74	-1.57	-1.42	-1.30	-1.20	-1.11	-1.04
Multi	40	-3.45	-2.70	-2.16	-1.78	-1.51	-1.31	-1.15	-1.02	-0.92	-0.84	-0.77	-0.71	-0.66
	60	-3.85	-2.98	-2.40	-2.00	-1.70	-1.48	-1.31	-1.17	-1.06	-0.97	-0.89	-0.82	-0.77
	80	-4.16	-3.24	-2.63	-2.20	-1.89	-1.65	-1.46	-1.31	-1.19	-1.09	-1.00	-0.93	-0.87
	100	-4.45	-3.50	-2.86	-2.40	-2.07	-1.81	-1.61	-1.44	-1.31	-1.20	-1.11	-1.03	-0.96
	120	-4.73	-3.74	-3.07	-2.59	-2.23	-1.96	-1.74	-1.57	-1.42	-1.31	-1.20	-1.12	-1.05
	135	-4.93	-3.92	-3.23	-2.73	-2.36	-2.07	-1.84	-1.66	-1.51	-1.38	-1.28	-1.19	-1.11

If safe loading shown above is not satisfactory to your requirements, it is possible to adjust performance by using alternative fastener layouts, purlin specifications and/or deflection limits. For further information please contact the Technical Department T: +44 (0) 1244 892199.

Performance benefits



Thermal performance

Trisomet® complies with the minimum requirements of the conservation of fuel and power sections of the Building Regulations for England and Wales (Part L2) and Scotland (Technical Handbook Section 6 Energy). The panel construction offers highly consistent insulation performance, and the site-formed junctions provide a practical and effective method of ensuring good thermal performance.

Thickness (mm)	U-value (W/m ² K)*	Typical application
40	0.46	Unheated building
60	0.33	Min Part L requirement for wall
80	0.25	Min Part L requirement for roof
100	0.20	Enhanced
120	0.16	Enhanced
135	0.15	Enhanced

* Figures computer modelled in accordance with EN ISO 10211 as stated in MCRMA Technical Note 14.



Fire safety

Trisomet® carries Grade EXT-B and EXT-A approval by the LPCB. Also achieves fire resistance performance of up to 4 hours integrity and 30 mins insulation dependant on panel thickness. These are attained using standard fixing and sealing methods (external side-lap stitched at maximum 300mm centres).

The panel achieves a Broof (t4) performance for the external surface spread of flame and fire penetration on a roof in accordance with BS EN 13501-5. The internal surface of the panel also complies with a Class B s2 d0 rating in accordance with BS EN 13501-1.



Acoustic performance

The acoustic performance of Trisomet® has been predicted using software developed by the Department of Applied Acoustics, University of Salford, under a research contract funded by the Metal Cladding and Roofing Manufacturers Association (MCRMA). The results in the table are based on an 80 mm core.

Frequency (Hz)	SRI Values (dB)*	Frequency (Hz)	SRI Values (dB)*
100	12.1	800	27.2
125	13.6	1,000	28.9
160	15.3	1,250	30.6
200	16.9	1,600	32.5
250	18.5	2,000	34.3
315	20.2	2,500	36
400	21.9	3,150	35.9
500	23.6	4,000	33.8
630	25.4	5,000	31.2

Weighted S.R.I RW = 28.5 dB

* The predicted sound reduction index values should only be used to provide guidance for preliminary design and/or appraisal of cladding systems.



Water penetration

In accordance with product standard BS EN 14509, the water-tightness of a system should be tested to EN 12865. The standard advises that the system should achieve water-tightness to a pressure of 600 Pa for normal conditions. Laboratory testing shows evidence that the Trisomet® system is water-tight up to a pressure of 1200 Pa, which far surpasses this requirement.



Air-tightness

The cladding panel and its junction details must be air-tight 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). In laboratory tests in accordance with EN BS 12114, the sealed panel show evidence of air leakage as low as 0.43 m³/h/m².

A practical expectation for a finished building, with effective sealing at all junctions would be 3-5 m³/h/m². However enhanced detailing practises on large shed buildings can realise air leakage performance figures of less than 3 m³/h/m².



Environmental credentials

Trisomet® is a sustainable solution with responsible sourcing and traceability of all component materials. All steel elements are produced within the Tata Steel's UK steel production, strip processing, galvanising, coating and profiling facilities. In addition the system's carbon footprint is further minimised by the manufacturing process being situated adjacent to Colorcoat® pre-finished steel production facility.

The PIR insulation within the system has zero ozone depletion potential (ODP) and a very low global warming potential (GWP) of less than 5. Both these factors support the achievement of a high BREEAM rating.

All steel elements are 100 % recyclable back into new steel products, without loss of quality. The insulation can be separated using existing scrap shredding technology, after which the materials can be recovered or recycled.

