BLACHOTRAPEZ

Trapezoidal metal sheet

T-14 plus

Product data sheet

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and see a 3D model

1125

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Wysokość kapitału zakładowego 181 450 100, 00 PLN, Sąd Rejonowy dla Krakowa-Śródmieścia Wydział XII Gospodarczy KRS 0000370357

General information

Trapezoidal metal sheet is unique thanks to its simplicity and expressive form. It allows making effective structures which often differ from the traditional division on a roof and a façade.

Advantages and properties

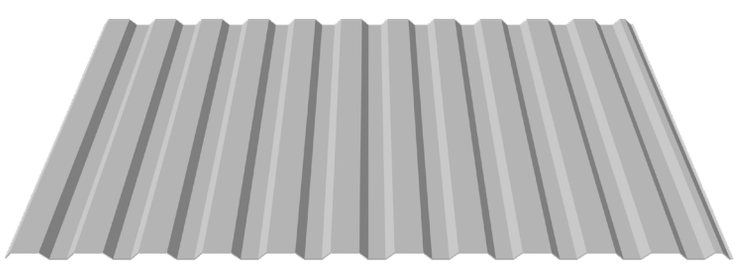
A wide range of sheet thickness, possibility to cut to size and rich colours create unlimited possibilities of its application. An important advantage of trapezoidal sheet is its rigidity and durability determined by profile height.

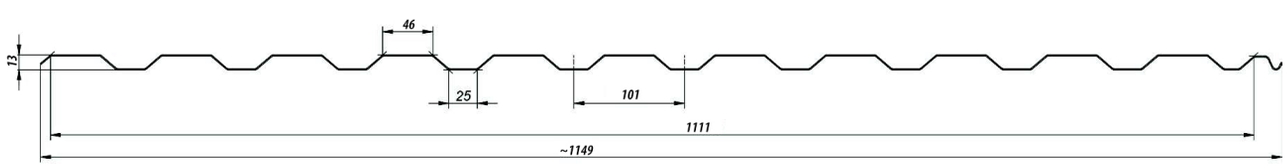
Technical details

Total width:	**~1149 mm**	Pitch:	**101 mm**
Cover width:	**1111 mm**	Width of crown:	**46 mm**
Thickness of the finished product (steel):	**0,5 - 0,7 mm**	Width of valley:	**25mm**
Thickness of the finished product (aluminium):	**0,6 mm**	Recommended length:	**max 8 mb ***
Depth of profile:	**13 mm**		

* Blachotrapez is not responsible for mechanical damage caused during transport in sheets longer than the ones recommended in the Technical Specifications of the Profile. Ordering sheets longer than recommended increases the risk of damage during transport, processing and assembly. Sheets longer than recommended may be deformed. This is due to the production technology and the expansion of the material under the influence of temperature amplitude.

T-14 plus Roof - Dimensions and welt, Cross-section





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Application

T-14 plus trapezoidal sheet metal, supplied in the form of finished elements, is used for roofing with a slope of at least 9°. These sheets are used as finishing and safety elements in buildings. Trapezoidal sheets must be used in accordance with technical projects of buildings, the manufacturer's installation instructions and recommendations, current standards, and technical and construction regulations.

Remove the anti-condensation barrier at the joints between the sheets and butting up to the eaves by cutting, so that water and moisture from the outside is not absorbed into the layer of material.

When forming trapezoidal sheets (especially with non-woven interlinings), transverse bending of U-shaped sheets can occur, for technical and technological reasons. In this event, it is necessary to use additional 19mm-long screws (to join the sheets together), in order to lay the sheets along longitudinal overlaps. This is a natural occurrence for which the Manufacturer is not responsible.

Blachotrapez recommends to purchase all materials required for one investment under one purchase order. Otherwise it is possible that the colour shades and texture will vary which shall not be attributable to the Manufacturer.

The applied material has a wide range of applications due to the environmental classification, which is confirmed by a long warranty period depending on material (see the separate warranty form uploaded to our website www.blachotrapez.eu)

Research results / documentation

The T-14 plus has a Declaration of Performance drawn up in accordance with the applicable standards and regulations for construction products.

We also have a Hygienic Certificate issued by the National Hygiene Institute PZH. These documents are issued to implemented orders. In order to obtain them, please contact the Quality Control Department - the scheme of procedures is provided on our website.

Load tables for the T-14 plus are provided further in this product data sheet.

Additional information

For all types of profiles we have properly prepared instructions for transport, storage, cutting and maintenance of sheet metal. To familiarize yourself with the content, please visit www.blachotrapez.eu and contact our Technical and Trade Consultants or branches of our company - addresses can also be found on our website.

We also have numerous awards and certificates, which you can find on our website www.blachotrapez.eu

Load tables

Guidelines and comments on the load tables for profiled metal sheets. The load tables have been developed to be applied with the trapezoidal metal sheets produces by "BLACHOTRAPEZ" Company, which serve as single-span and continuous-span (two-span and three-span) beams. Alternative supports such as CLADDING (positive) or ROOFING (negative) have also been taken into account.

The results have been obtained on the basis of a static strength analysis of metal sheets, treated as thin-walled components, according to the algorithm developed by R.J. Garncarek, DSc, PhD, Eng, a professor of Bialystok University of Technology, in compliance with PN-EN 1993-1-3: August 2008 with further amendments, as well as PN-EN 1993-1-1and 1993-1-5.

Programmes by "KOTEX" Company [www.kotex.waw.pl] were used for calculations.
According to PN-EN 1993-1-3, the following assumptions were adopted for the calculations:

- resilient material with the yield point f_{yb} according to Table 3.1b.
- working coefficient for material $\gamma_m = 1{,}0$.

The tables contain the design loads for the ultimate limit state (ULS), expressing the permissible load bearing capacity, as well as characteristic loads for serviceability limit state (SLS), which correspond to the permissible deflections.

The permissible loads for the SLS were determined for the **L**/150, **L**/200 and **L**/300 deflections.
According the standard, the value of 10 mm was adopted as the support width at the end support and at least 60 mm as the support width at the intermediate supports.

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The following units were used in the tables:

- Sheet thickness mm
- Cross section area (gross) cm^2/m
- Moments of inertia (effective, min/max) cm^4/m
- Span spreads m
- Loads kN/m^2

Table 1 provides the ranges for the basic parameters for the metal sheets that have been analysed. The abbreviations R and F used in Table 1 stand for Roof and Façade respectively.
Table 1

Profile	Schemes	Thickness [mm]					L min	L max
		0.50	0.70	0.75	0.88	1.00	[m]	[m]
T-8	F	x					0.50	3.00
T-14+	R	x					0.50	3.00
T-18	R,F	x	x	x			0.50	3.00
T-18+	R,F	x	x	x			0.50	3.00
T-20+	R	x	x	x			0.50	4.00
T-35	R,F	x	x	x			1.00	5.00
T-35+	R,F	x	x	x			1.00	5.00
T-50	R,F	x	x	x	x	x	1.50	6.00
T-55	R,F	x	x	x	x	x	1.50	6.00

All the tables were developed for the S250, S280 and S320 steels. The span spreads values given in tables are changed every 0,25 m.

General recommendations

The design loads presented above shall be compared with the values contained in the tables – line 1, for a span length no shorter than the one adopted when designing the construction.

Linear interpolation can be used for the span spread **L**.

These tables can be used when the following conditions are met:
- the load on the adopted static schemes is a continuous uniformly distributed load
- the difference between the span lengths in multi-span schemes do not exceed 5%, in which case the longest span spread shall be adopted to determine ULS and SLS.
- the trapezoid profiles fastening method is compliant with the producer's manual.

In individual cases and depending on the nature of the problem, it is recommended to consult the producer's representative or the tables' authors.

T-14 PLUS ROOF														
S 250 GD				**single-span beam**										
Thickness	**A_{gross}**	**Mass**	**J_x min/max**	**Limit state**	**Acceptable continuous load q [kN/m²] evenly distributed over span L [m]**									
[mm]	[cm^2/m]	[kg/m^2]	[cm^4/m]		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
0,50	5,46	4,31	1,54 1,67	SGN	13,40	5,96	3,35	2,15	1,49	1,10	0,84	0,66	0,54	0,44	0,37
				SGU L/150	12,96	4,02	1,74	0,90	0,52	0,33	0,22	0,15	0,11	0,08	0,06
				SGU L/200	10,04	3,08	1,31	0,67	0,39	0,25	0,16	0,12	0,08	0,06	0,05
				SGU L/300	6,92	2,07	0,88	0,45	0,26	0,16	0,11	0,08	0,06	0,04	0,03

T-14 PLUS ROOF														
S 250 GD				**double-span beam**										
Thickness	**A_{gross}**	**Mass**	**J_x min/max**	**Limit state**	**Acceptable continuous load q [kN/m²] evenly distributed over span L [m]**									
[mm]	[cm^2/m]	[kg/m^2]	[cm^4/m]		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
0,50	5,46	4,31	1,54 1,67	SGN	10,19	5,10	3,02	2,00	1,43	1,08	0,84	0,68	0,55	0,45	0,38
				SGU L/150	10,19	5,10	3,02	2,00	1,25	0,79	0,53	0,37	0,27	0,20	0,16
				SGU L/200	10,19	5,10	3,02	1,62	0,94	0,59	0,40	0,28	0,20	0,15	0,12
				SGU L/300	10,19	4,98	2,10	1,08	0,62	0,39	0,26	0,19	0,13	0,10	0,08

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S 250 GD				three-span beam										
Thickness	A_{gross}	Mass	J_x min/max	Limit state	Acceptable continuous load q [kN/m^2] evenly distributed over span L [m]									
[mm]	[cm^2/m]	[kg/m^2]	[cm^4/m]		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
0,50	5,46	4,31	1,54 1,67	SGN	12,36	6,32	3,74	2,48	1,78	1,34	1,04	0,84	0,69	0,57	0,48
				SGU L/150	12,36	6,32	3,23	1,69	0,98	0,62	0,41	0,29	0,21	0,16	0,12
				SGU L/200	12,36	5,71	2,48	1,27	0,74	0,46	0,31	0,22	0,16	0,12	0,09
				SGU L/300	12,18	3,80	1,65	0,85	0,49	0,31	0,21	0,15	0,11	0,08	0,06

T-14 PLUS ROOF														
S 280 GD				single-span beam										
Thickness	A_{gross}	Mass	J_x min/max	Limit state	Acceptable continuous load q [kN/m^2] evenly distributed over span L [m]									
[mm]	[cm^2/m]	[kg/m^2]	[cm^4/m]		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
0,50	5,46	4,31	1,54 1,67	SGN	14,64	6,51	3,66	2,35	1,63	1,20	0,92	0,72	0,59	0,48	0,41
				SGU L/150	12,96	4,02	1,74	0,90	0,52	0,33	0,22	0,15	0,11	0,08	0,06
				SGU L/200	10,04	3,08	1,31	0,67	0,39	0,25	0,16	0,12	0,08	0,06	0,05
				SGU L/300	6,92	2,07	0,88	0,45	0,26	0,16	0,11	0,08	0,06	0,04	0,03

T-14 PLUS ROOF														
S 280 GD				double-span beam										
Thickness	A_{gross}	Mass	J_x min/max	Limit state	Acceptable continuous load q [kN/m^2] evenly distributed over span L [m]									
[mm]	[cm^2/m]	[kg/m^2]	[cm^4/m]		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
0,50	5,46	4,31	1,54 1,67	SGN	11,04	5,55	3,28	2,18	1,55	1,17	0,92	0,73	0,60	0,49	0,41
				SGU L/150	11,04	5,55	3,28	2,14	1,25	0,79	0,53	0,37	0,27	0,20	0,16
				SGU L/200	11,04	5,55	3,15	1,62	0,94	0,59	0,40	0,28	0,20	0,15	0,12
				SGU L/300	11,04	4,98	2,10	1,08	0,62	0,39	0,26	0,19	0,13	0,10	0,08

T-14 PLUS ROOF														
S 280 GD				three-span beam										
Thickness	A_{gross}	Mass	J_x min/max	Limit state	Acceptable continuous load q [kN/m^2] evenly distributed over span L [m]									
[mm]	[cm^2/m]	[kg/m^2]	[cm^4/m]		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
0,50	5,46	4,31	1,54 1,67	SGN	13,37	6,88	4,07	2,70	1,93	1,45	1,13	0,91	0,74	0,62	0,52
				SGU L/150	13,37	6,88	3,23	1,69	0,98	0,62	0,41	0,29	0,21	0,16	0,12
				SGU L/200	13,37	5,71	2,48	1,27	0,74	0,46	0,31	0,22	0,16	0,12	0,09
				SGU L/300	12,18	3,80	1,65	0,85	0,49	0,31	0,21	0,15	0,11	0,08	0,06

T-14 PLUS ROOF														
S 320 GD				single-span beam										
Thickness	A_{gross}	Mass	J_x min/max	Limit state	Acceptable continuous load q [kN/m^2] evenly distributed over span L [m]									
[mm]	[cm^2/m]	[kg/m^2]	[cm^4/m]		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
0,50	5,46	4,31	1,53 1,67	SGN	16,26	7,23	4,07	2,60	1,81	1,33	1,02	0,80	0,65	0,54	0,45
				SGU L/150	12,96	4,02	1,74	0,90	0,52	0,33	0,22	0,15	0,11	0,08	0,06
				SGU L/200	10,04	3,08	1,31	0,67	0,39	0,25	0,16	0,12	0,08	0,06	0,05
				SGU L/300	6,92	2,07	0,88	0,45	0,26	0,16	0,11	0,08	0,06	0,04	0,03

T-14 PLUS ROOF														
S 320 GD				double-span beam										
Thickness	A_{gross}	Mass	J_x min/max	Limit state	Acceptable continuous load q [kN/m^2] evenly distributed over span L [m]									
[mm]	[cm^2/m]	[kg/m^2]	[cm^4/m]		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
0,50	5,46	4,31	1,53 1,67	SGN	12,12	6,13	3,62	2,40	1,71	1,29	1,01	0,81	0,66	0,54	0,46
				SGU L/150	12,12	6,13	3,62	2,14	1,25	0,79	0,53	0,37	0,27	0,20	0,16
				SGU L/200	12,12	6,13	3,15	1,62	0,94	0,59	0,40	0,28	0,20	0,15	0,12
				SGU L/300	12,12	4,98	2,10	1,08	0,62	0,39	0,26	0,19	0,13	0,10	0,08

T-14 PLUS ROOF														
S 320 GD				three-span beam										
Thickness	A_{gross}	Mass	J_x min/max	Limit state	Acceptable continuous load q [kN/m^2] evenly distributed over span L [m]									
[mm]	[cm^2/m]	[kg/m^2]	[cm^4/m]		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
0,50	5,46	4,31	1,53 1,67	SGN	14,68	7,60	4,49	2,98	2,13	1,60	1,25	1,00	0,82	0,68	0,57
				SGU L/150	14,68	7,29	3,23	1,69	0,98	0,62	0,41	0,29	0,21	0,16	0,12
				SGU L/200	14,68	5,71	2,48	1,27	0,74	0,46	0,31	0,22	0,16	0,12	0,09
				SGU L/300	12,18	3,80	1,65	0,85	0,49	0,31	0,21	0,15	0,11	0,08	0,06

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