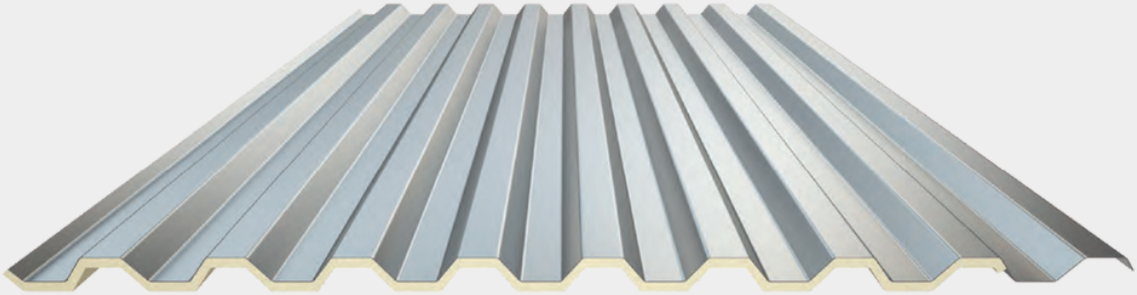
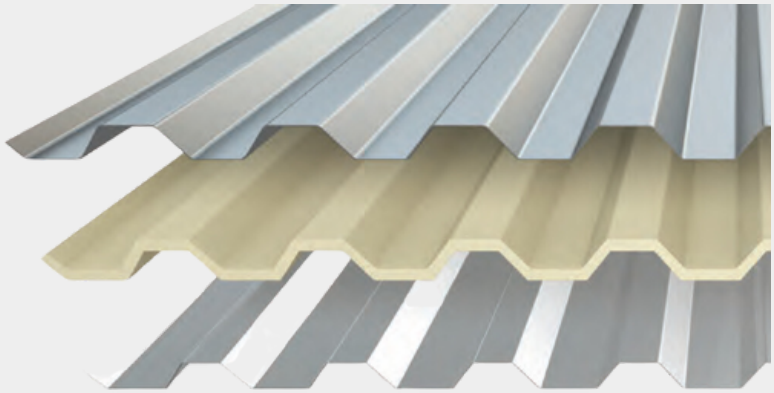
DALAL
STEEL INDUSTRIES





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Contact us

For more info

info@dalalsteel.com

www.dalalsteel.com

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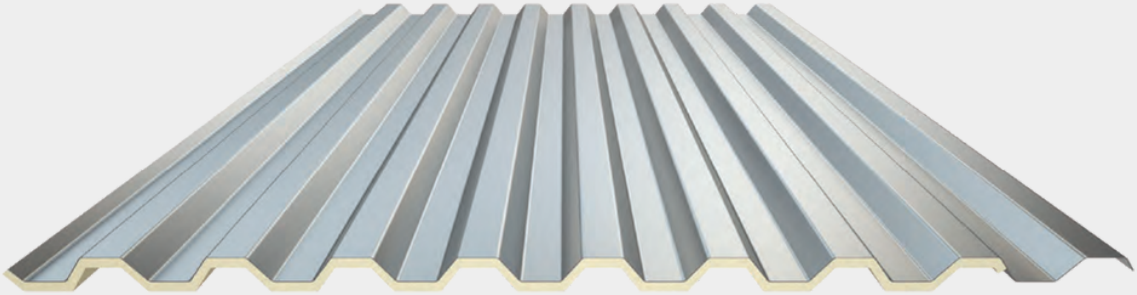

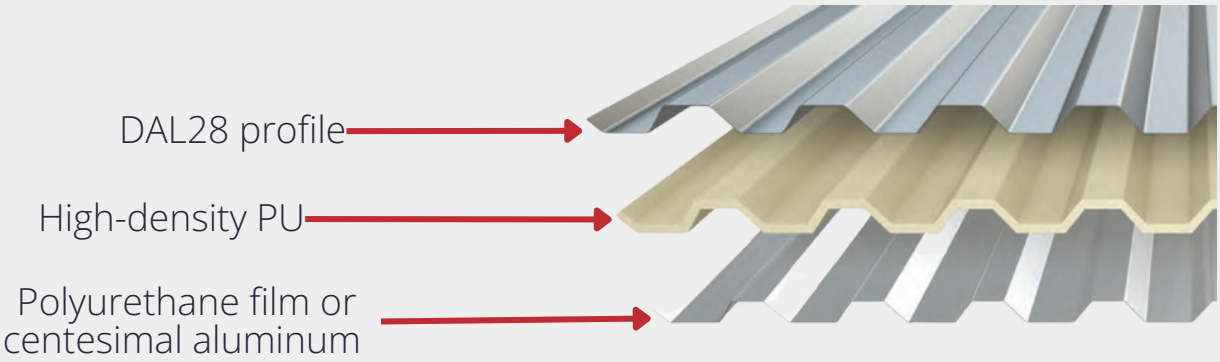

Features

Profile height	28mm + 10 mm of insulation
Effective width	893 mm
Minimum length / maximum length	1600 / 13200 mm
Minimum slope	7%
Indicative weight DAL28 aluminum 0.6mm	2.5Kg/m^2
Indicative weight DAL28 steel 0.5mm	5.8Kg/m^2
Workings	Notching, controlled straining, overlapping
Optional applications on inner side	Aluminum foil
Recommended use	Roofing & cladding
Polyurethane density	60Kg/m^3
Thermal conductivity	0.023W/mk
Polyurethane thickness	10mm
Materials	raw & prepainted aluminum, preoainted steel, aluzinc, copper
Heat Transmission U	2.30W/m^2k
Fire class according to UNI EN 13501-5:2009	BRoof (T3)

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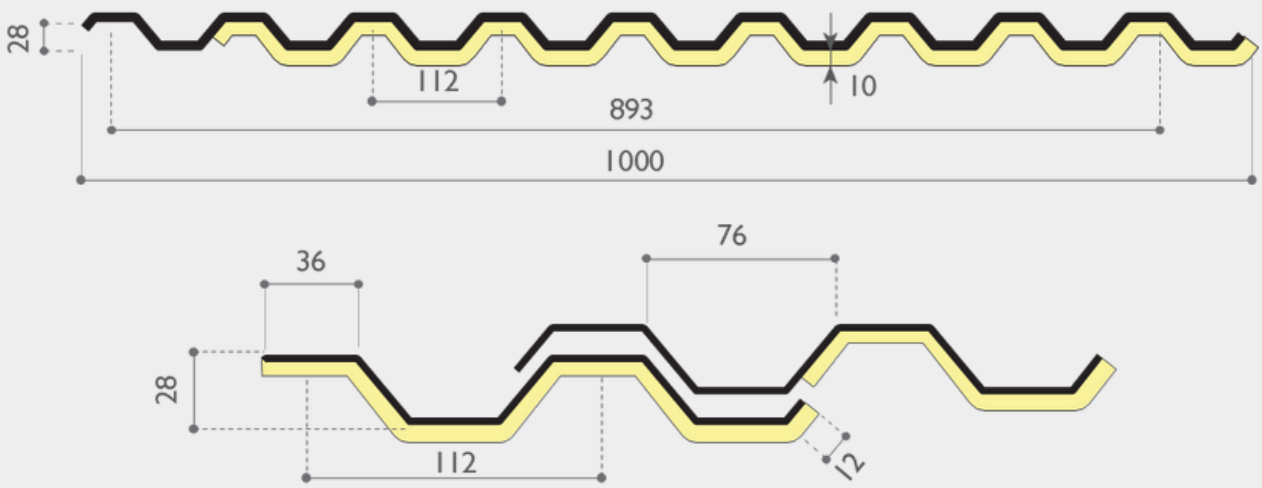

Aluminum Specifications

S mm	P Kg/m²	J Cm⁴/m	W Cm³/m	EJ kN Cm²/m	M max kN Cm/m
0.6	2.53	9.22	4.84	64.540	31
0.7	2.87	10.76	6.27	75.320	41
0.8	3.21	12.30	7.88	86.100	51
1.0	3.90	15.38	11.19	107.660	73

Maximum Distributed Load [kg/m²] on 4 Supports

i (m) **s** (mm)	**1.00** σ perm	ƒ perm	**1.20** σ perm	ƒ perm	**1.40** σ perm	ƒ perm	**1.60** σ perm	ƒ perm	**1.80** σ perm	ƒ perm
0.6	452	414	314	240	231	151	177	101	139	71
0.7	527	483	366	280	269	176	206	118	163	83
0.8	603	553	419	320	308	201	235	135	186	95
1.0	754	691	523	400	385	252	294	169	233	118

(This calculation is based on the assumption of σperm. = 6.5 kN/cm2 and ƒperm. = 1/200). The information in this calculation table should be regarded as approximate and for reference purposes only. The structural calculation is the responsibility of the designer and/or user for each specific case. They must also establish the design specifications for the specific roofing application in question.

STEEL

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DALAL STEEL INDUSTRIES

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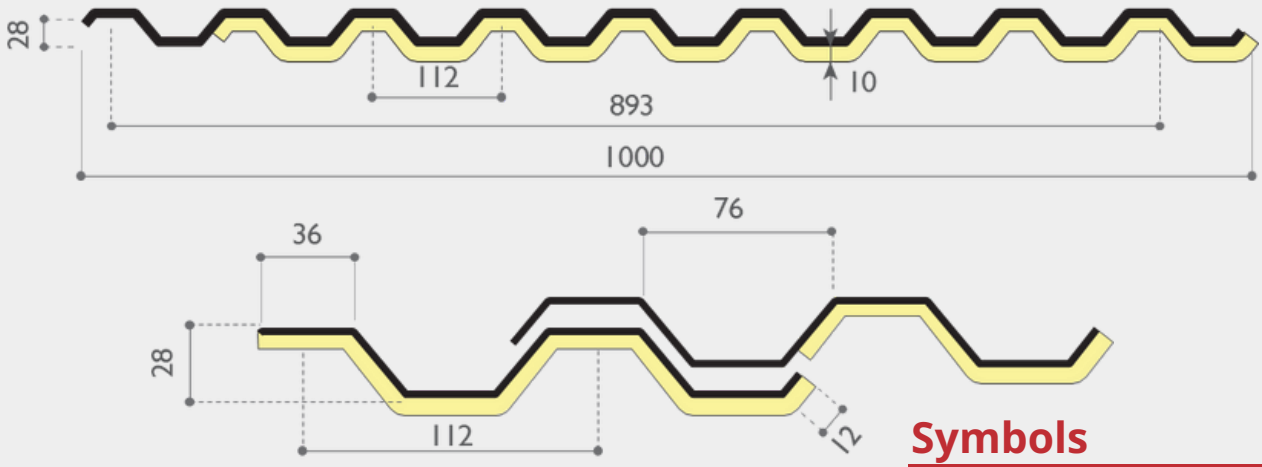


Steel Specifications

S mm	P Kg/m²	J Cm⁴/m	W Cm³/m	EJ kN Cm²/m	M max kN Cm/m
0.5	5.36	7.68	3.58	158.162	57.95
0.6	6.33	9.22	4.84	189.876	78.34
0.7	7.31	10.76	6.27	221.591	101.49
0.8	8.29	12.3	7.88	253.306	127.55
1.0	10.24	15.38	11.19	316.735	181.13

Symbols

S= sheet thickness
P= unit weight
J= moment of inertia
W= modulus of bending resistance
EJ= bending stiffness
M max= permitted bending moment (s perm. = 13,73 kN/cm2)
i= centre distance between supports
s perm.= unit safety load
ƒ perm.= max permitted straining

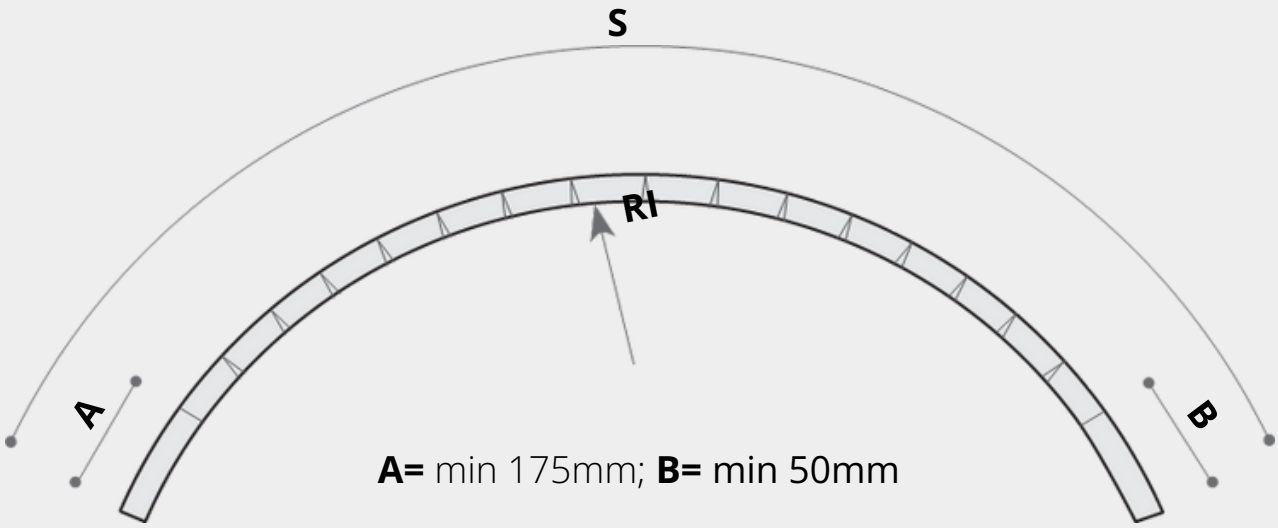
Maximum Uniform Load [kg/m²] on 4 Supports

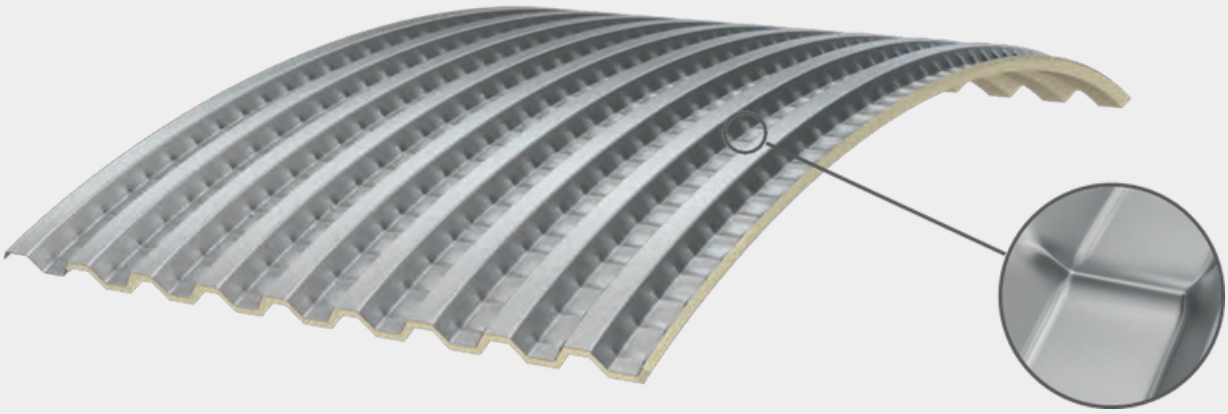
i (m) **s** (mm)	**1.00**		**1.25**		**1.50**		**1.75**		**2.00**		**2.25**		**2.50**		**2.75**		**3.00**	
	σ perm	ƒ perm	σ perm	ƒ perm	σ perm	ƒ perm	σ perm	ƒ perm	σ perm	ƒ perm	σ perm	ƒ perm	σ perm	ƒ perm	σ perm	ƒ perm	σ perm	ƒ perm
0.5	501	1032	321	528	223	306	164	193	126	129	99	91	80	66	66	50	56	38
0.6	678	1239	434	634	301	367	221	231	169	155	164	109	108	79	90	60	75	46
0.7	878	1446	562	740	390	428	287	270	219	181	173	127	140	93	116	70	98	54
0.8	1103	1653	706	846	490	490	360	308	276	207	218	145	177	106	146	79	123	61
1.0	1567	2067	1003	1059	696	612	512	386	392	258	309	181	251	132	207	99	174	76

(This calculation is performed under the dual hypothesis of σperm = 1,400 kg/cm2 = 13.73 kN/cm2 and ƒperm = 1/200). The information provided in this calculation table should be regarded as approximate and for reference purposes only. The responsibility for structural calculations lies with the designer and/or user in each specific case, and they are also tasked with defining the application design specifications for the roofing.

UNIFORM CURVATURE BY NOTCHING

DAL28





Uniform Curvature by Notching

Ri	Aluminum	Other Materials
I m	max 3m	max 3m
2-3m	max 3m	max 3m
3-4m	max 5m	max 5m
4-6m	max 6m	max 6m
6-7m	max 8m	max 8m (non standard tooling)

PARTIAL NOTCHING

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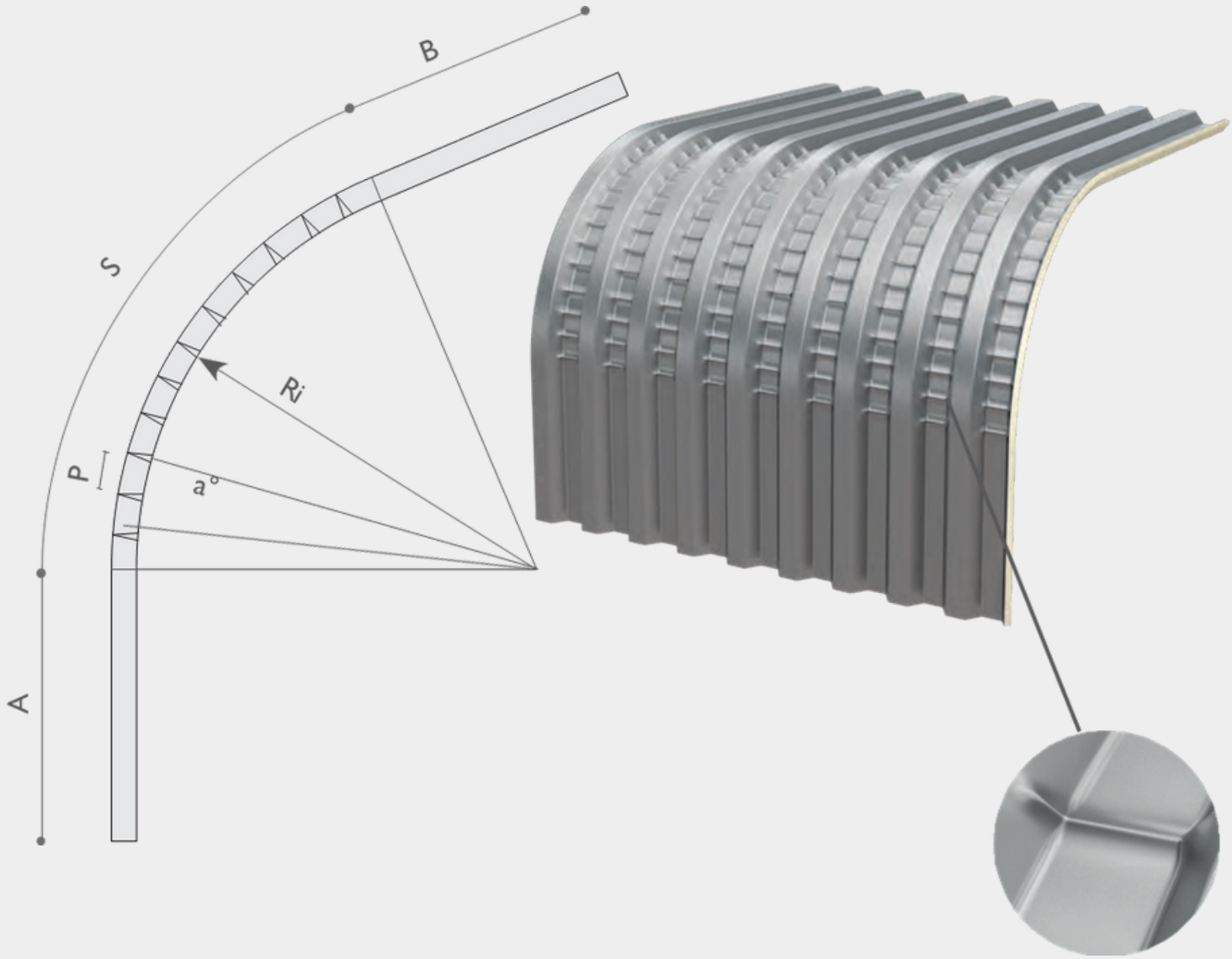

Partial Notching

A	Beigining part	min 175 max 2000mm
B	Final part	min 175 max 2000mm
S	Curved development	min 100mm
A+B+S	Total development (aluminum)	max 5000mm
A+B+S	Total Development (other materials)	max 5000mm
Ri	Internal radius	min 400mm
P	Imprint distance	min 35mm
a°	Deflection angle	min1°-max3°(steel) min1°max4°(aluminum)

NOTCHING IN THE MIDDLE

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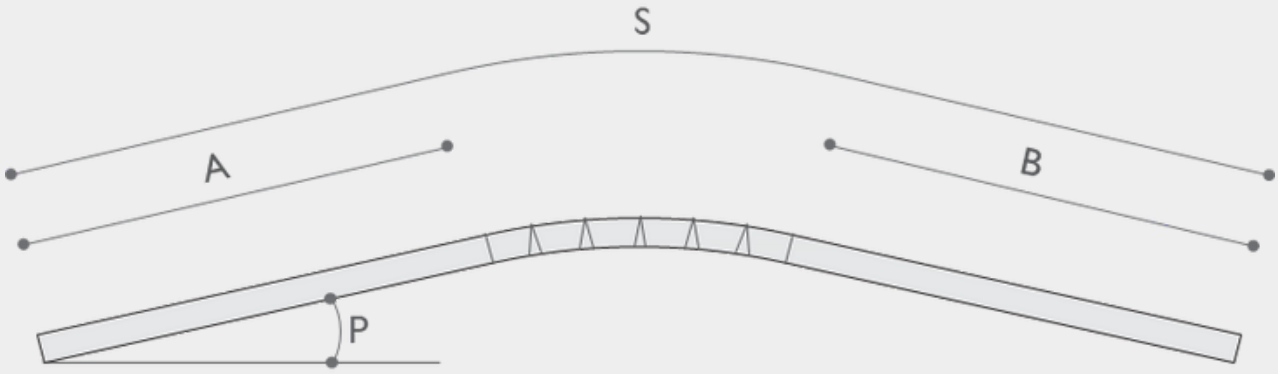
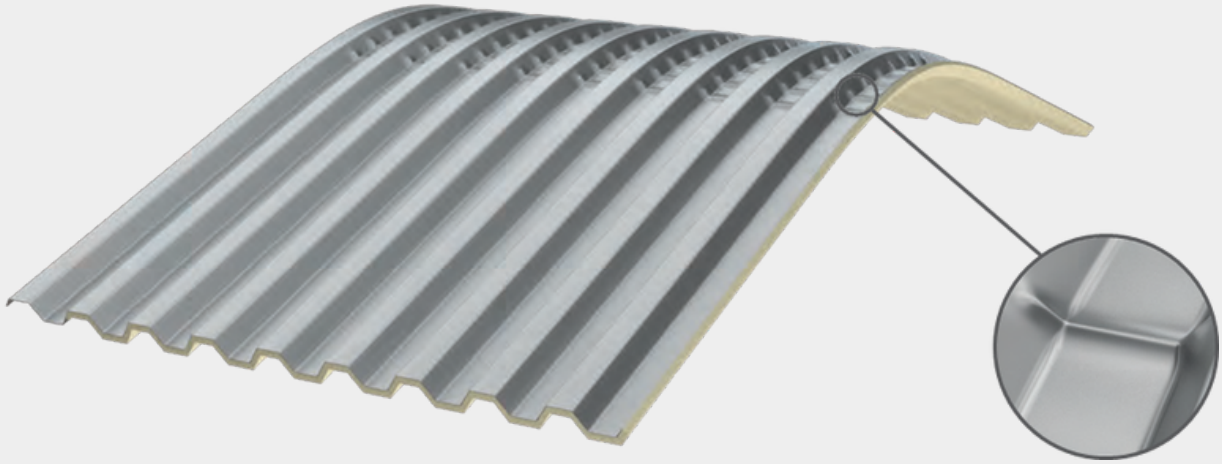


A sheet curved exclusively at its center to create the ridge and connect two slopes, accomplished by employing a series of indentations in the middle of the sheet. The length of the straight sections A and B ranges from a minimum of 175 mm to a maximum of 4000 mm



Notching in the Middle

P	S max sheet length	
	Aluminum	**Other Materials**
6-12%	max 10m	max 6m
12-15%	max 10m	max 6m
15-20%	max 8m	max 6m
20-25%	max 8m	max 4m

CONTROLLED STRAINING

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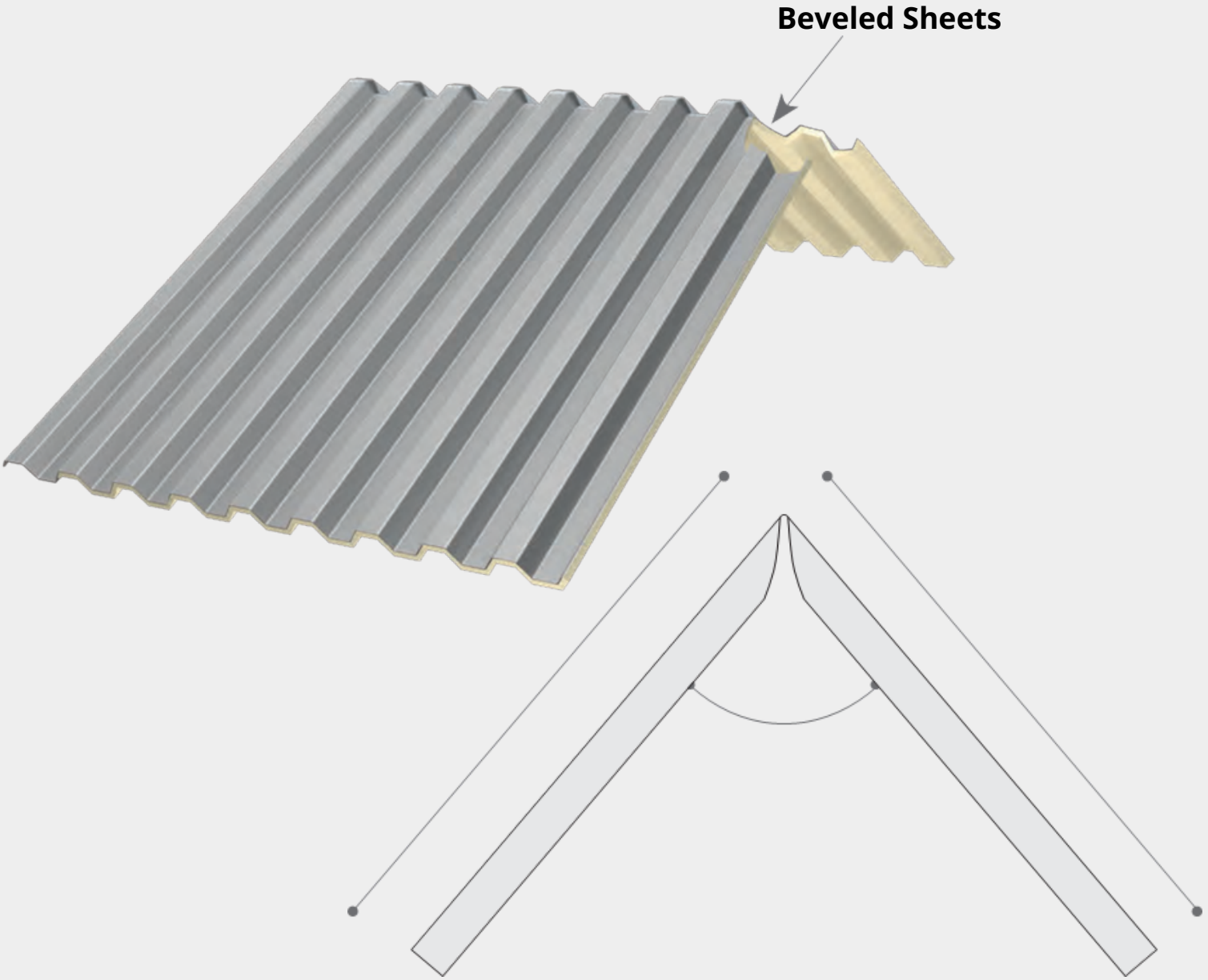
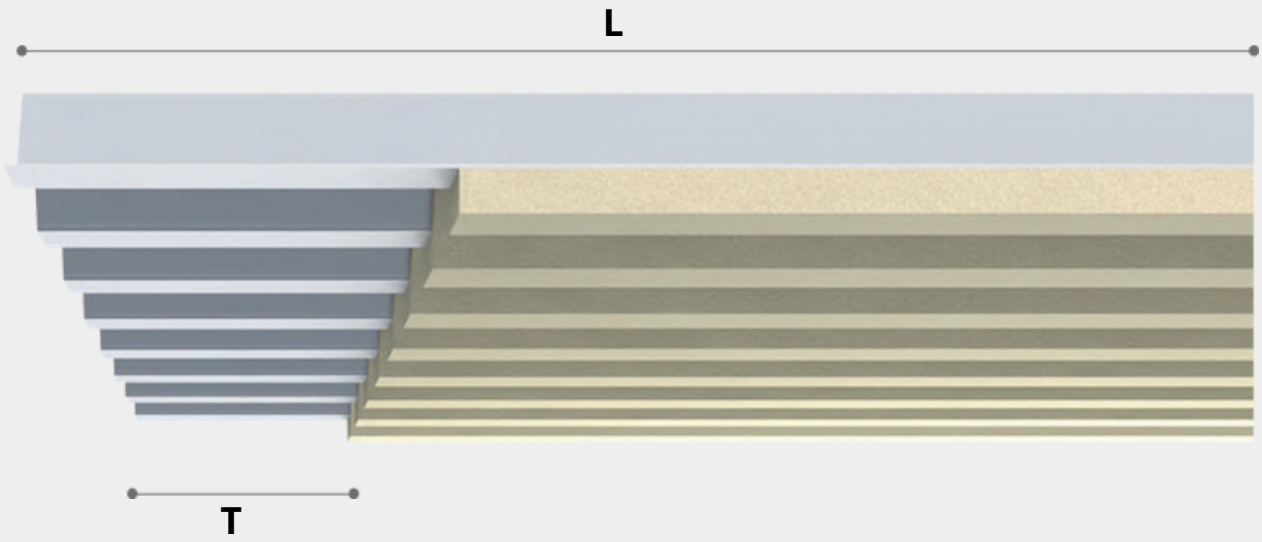
DALAL STEEL INDUSTRIES



Notching in the Middle

	Minimum	Maximum
A	200mm	4000mm
B	20mm	4000mm
A+B	----	6000mm
C	100°	160°

PREDISPOSITION FOAMED CUT OF OVERLAP DAL28



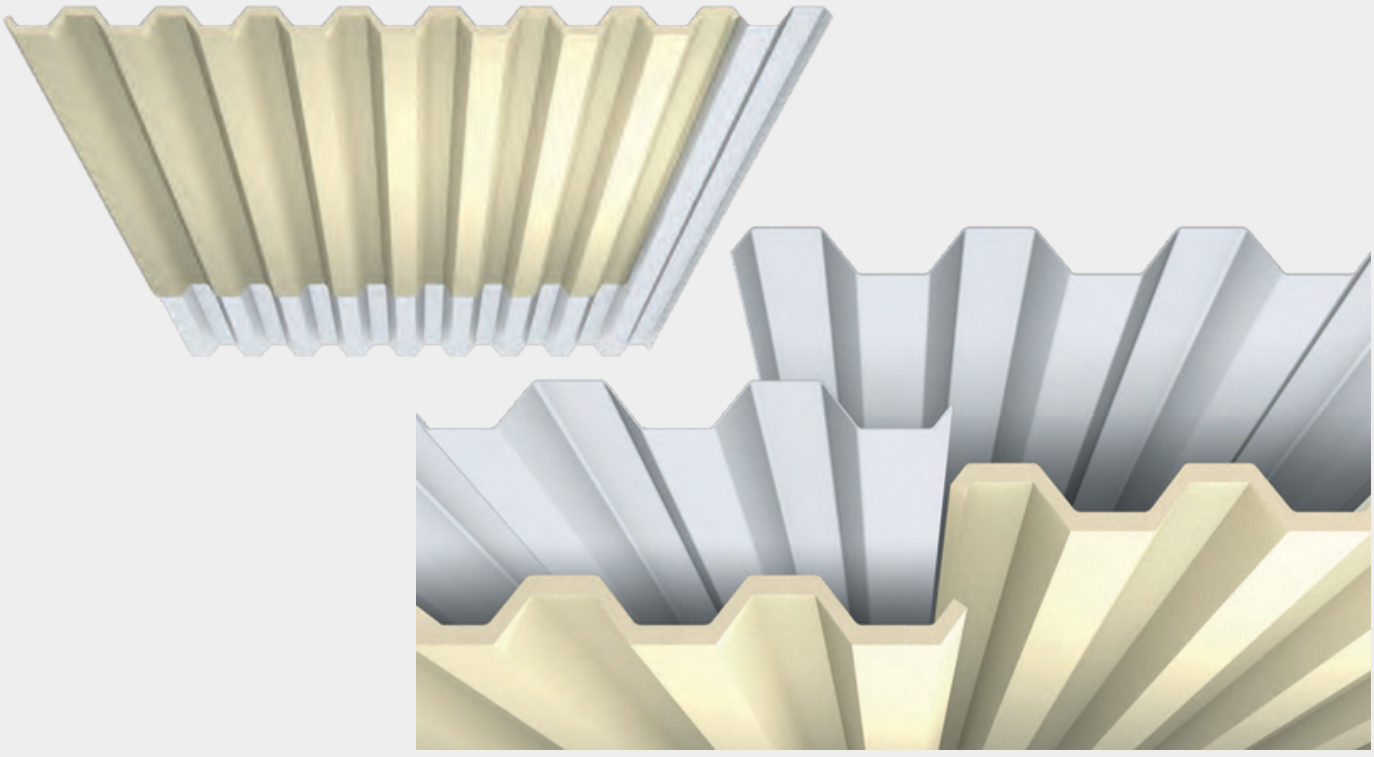
The preparation involves pre-cutting the insulating layer and applying adhesive tape to the inner surface of the metal sheet, making it easier to remove the polyurethane on-site.

For overlapping:

- Sheet length (L) ranges from a minimum of 2200 mm to a maximum of 13200 mm.
- Standard thickness (T) options include 50, 200, 250, and 300 mm.

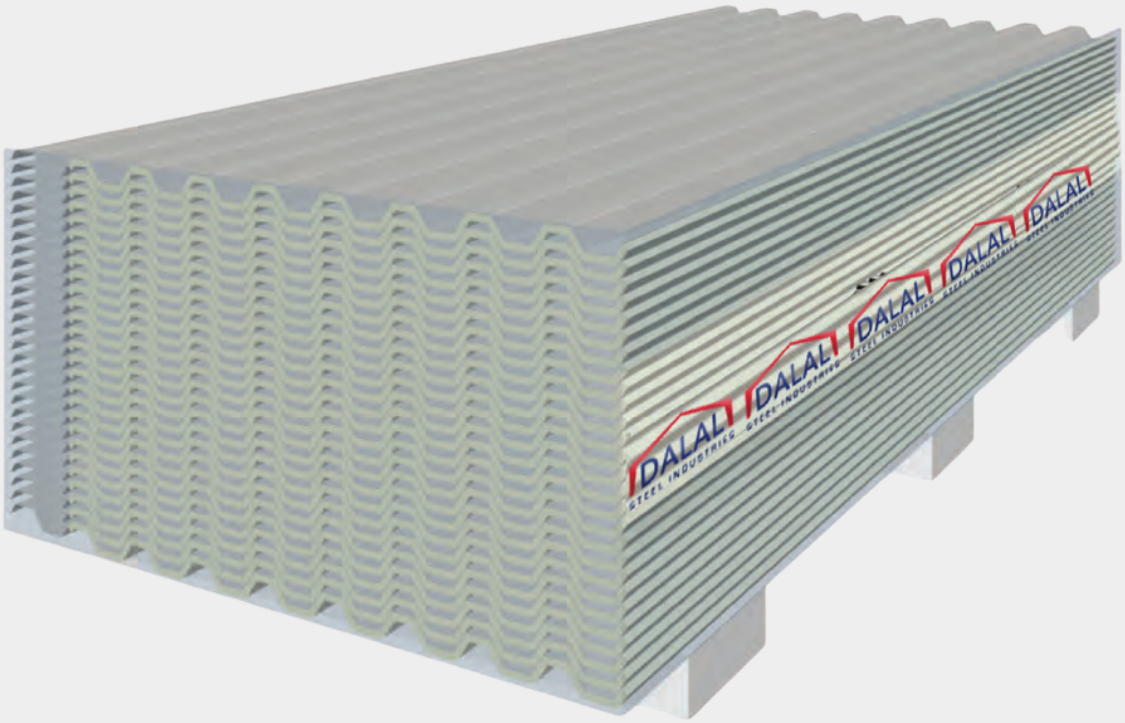
For double overlapping:

- The minimum sheet length is 2230 mm, and the maximum sheet length is 13200 mm.



EXAMPLE OF STANDARD PACKAGING

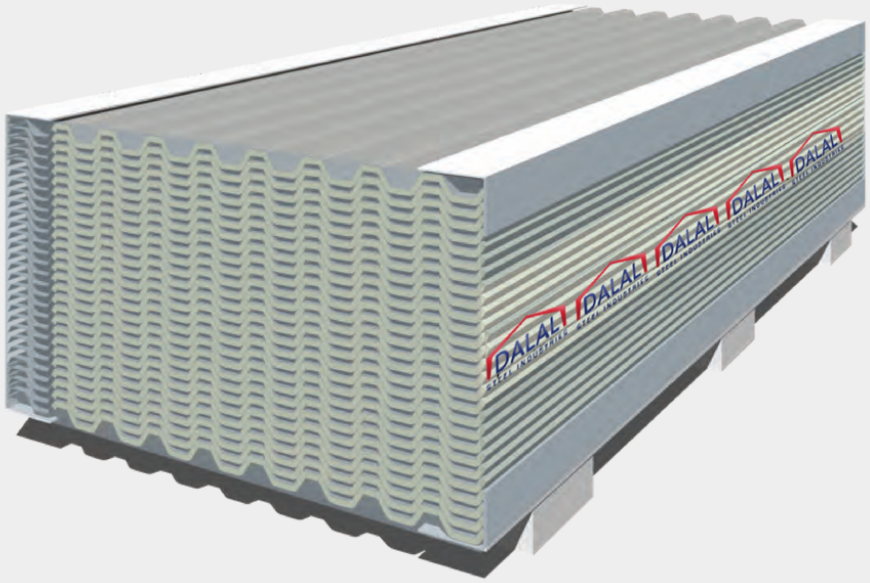
DAL28



Packaging with wooden supports and polyester surface covering cloth. DSI reserves the right to produce packages with weight up to 2,000 kg; in case of specific needs, please refer to our technical/commercial office.

Example of Special Packaging (on request)

As an illustration of customized packaging, DSI may include the placement of plates within designated metal tanks. DSI reserves the right to manufacture packages weighing up to 2,000 kg. For specific requirements, please contact our technical or commercial department. Estimated quantity per package: 27 sheets.



FIXING REQUIRMENTS

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DALAL STEEL INDUSTRIES

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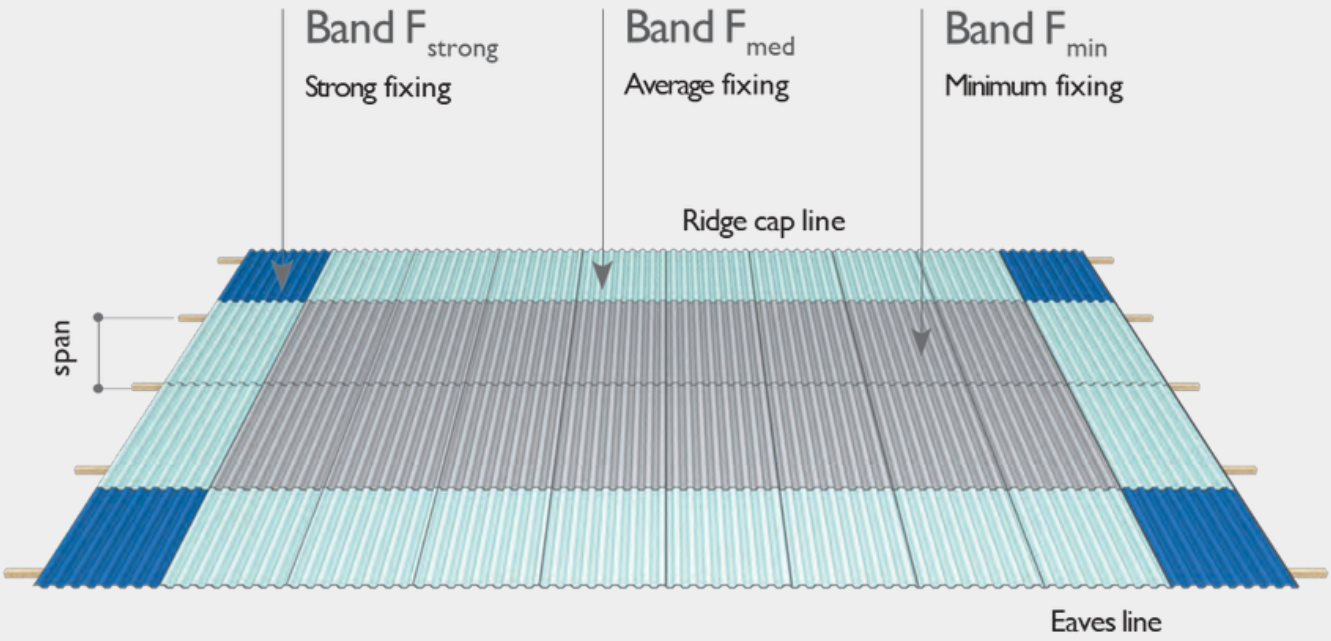
The minimum support base for DSI products on purlins should be 40 mm for metal supports and 50 mm for wooden supports. For guidance on the support spacing, please refer to the applicable charts for each DSI product. In terms of walkability, it is recommended not to exceed a support spacing of 1 meter.
Before commencing product assembly, it's advisable to lay a wire parallel to the gutter line or its inverse to ensure the roofing is perfectly aligned. The number of attachment points is determined by various factors, including:

- **Sheet length**
- **Climatic zone**
- **Mechanical properties of the fastening system**
- **Sheet placement on the roof (area)**
- **Roof slope**

As detailed in the table below, roof areas are categorized based on the level of wind-related risk.



FIXING REQUIRMENTS

DAL28

The designer should conduct a prior assessment to determine the appropriate number of fasteners. We will briefly outline a typical fastening scheme commonly used with DSI roofing systems. Please note that the number of fasteners may vary based on the span of the supporting substructure. It is recommended to ensure that the purlins, especially those related to the Fstrong and Fmed areas, are securely anchored to the structure. In cases of structures without floor slabs and areas highly exposed to strong winds, it's essential to increase the number of fasteners, including those within the Fmin area.
However, it is important to understand that DSI cannot be held responsible for any incorrect installation of its products. The responsibility for ensuring correct installation lies with the designer and/or user, who should assess individual use cases and determine specific planning applications for the roofing package.