



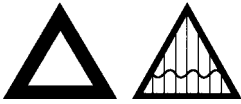
DESIGN + CONSTRUCTION

*Fiber-cement corrugated sheet ESAL Profile 8*



ESAL d.o.o. Anhovo  
Vojkova 9  
SI - 5210 Deskle  
Slovenia





## Technical data

Corrugated sheet ESAL Profile 8 is environmentally friendly fibre-cement, manufactured from Portland cement and water, reinforced with natural and synthetic fibres.

### Quality

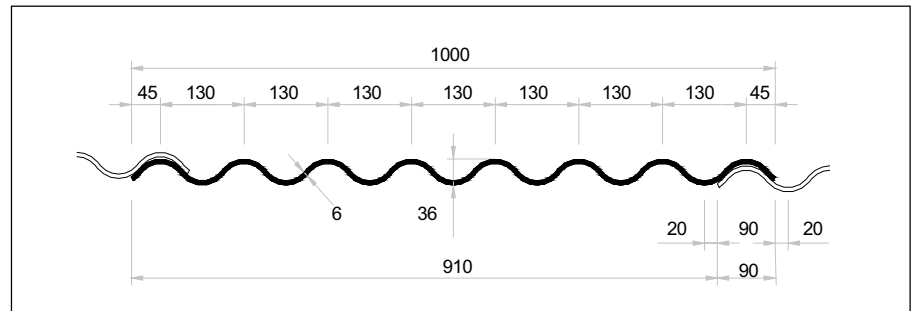
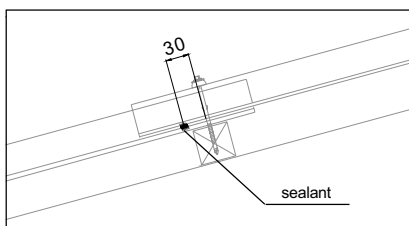
The quality of corrugated sheets ESAL Profile 8 complies with European product standard EN 494 requirements for Class B1X.

### Minimum roof pitch

ESAL Profile 8 can be laid on constructions where the roof pitch is min. 7°. Consideration should also be given to the length of the roof and the exposure of the site. Where slopes are between 7° and 10°, the end lap should be sealed with a mastic ribbon - polyisobutylene - based material, which has a rubbery, tacky consistency.

End lap of the corrugated sheets ESAL Profile 8 is min. 20 cm. Where heavy climatic conditions are expected the end lap should be increased (up to max. 30 cm) and end laps should be sealed up to 15°.

On roof, where snow build-up might occur at eaves or heavy wind-driven rain is expected, we recommend double skin roof.



Overall width/nominal	1000 mm
Net covering width	910 mm
Standard length	1250 mm
Effective cover area (end lap 20 cm)	0,956 m <sup>2</sup> /sheet
Mass	16,8 kg/sheet
Thickness (nominal)	6,0 mm
Apparent density	min. 1,6 g/cm <sup>3</sup>
Pitch of corrugation	130 mm
Height of corrugation	30 mm
Side lap	90 mm
Moment of resistance	42 cm <sup>3</sup> /m
Breaking load according to EN 494	min. 2500 N/m
Bending moment according to EN 494	min. 55 Nm/m
Weight as laid	0,18 kN/m <sup>2</sup>
Ventilation area	150 cm <sup>2</sup> /m

### Minimum roof pitch

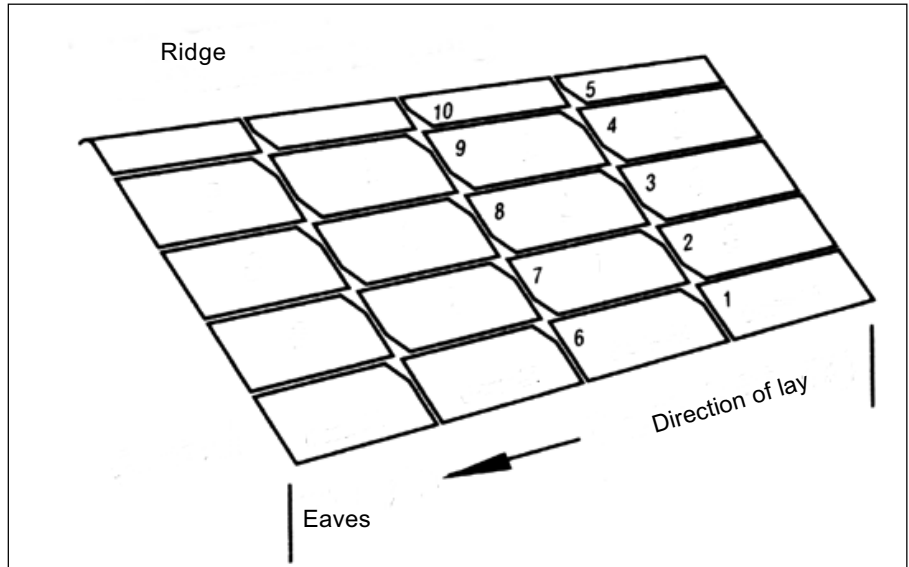
Roof length eaves - ridge	Minimum roof pitch	
	with end lap sealing	no end lap sealing
≤ 10 m	7°	10°
> 10 ≤ 20 m	8°	10°
> 20 ≤ 30 m	10°	12°
> 30 m	12°	14°

End lap is sealed with mastic ribbon dim. 7x7 mm. The sealant is placed 30 mm under the screw as shown below. The gap between the mitres should be free to allow free water flow.

### Laying the sheets

Roof sheeting should commence from one end of the building at eaves level rising vertical tiers, one sheet wide, from eaves to ridge.

The mirting plan depends on the direction of lay.



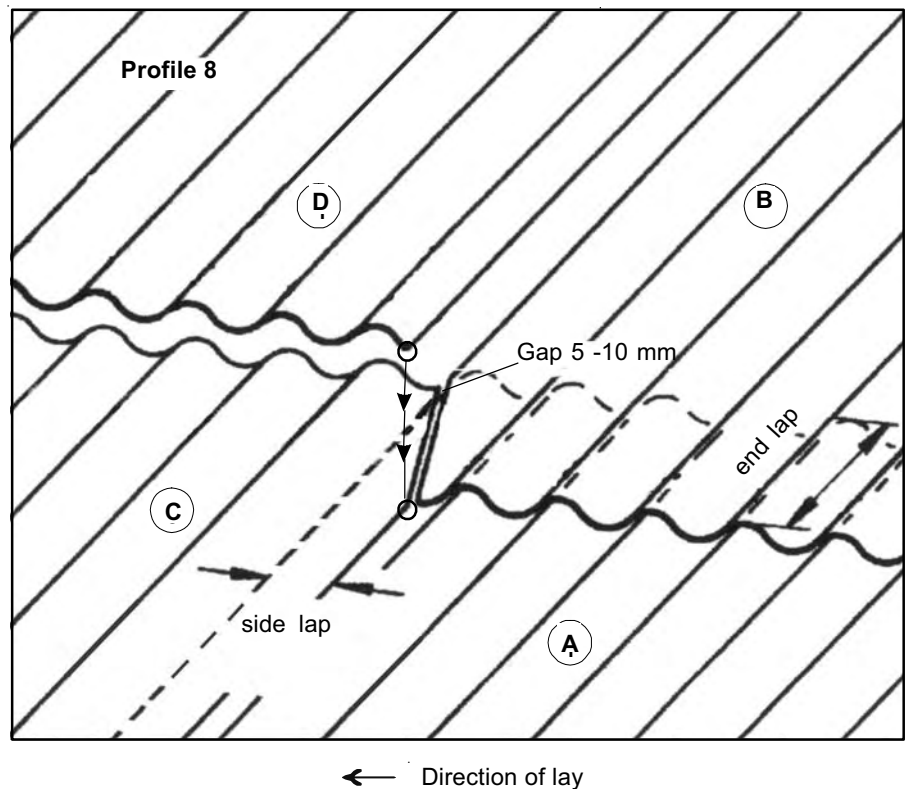
Mirting plan and installation sequence for the direction of lay

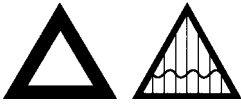
### Mirting

To avoid four thickness of sheeting at the junction of side and end laps, it is necessary for two of the sheets at each junction to be mitred at the corners so that they lie in the same plane.

Mitre or diagonal cut is defined by the width of the side lap (90 mm) and by the length of the end lap (min. 200 mm) as shown. Ideally the gap between mitres should be 5 -10 mm.

Mitres must not be cut in situ.





### Setting out plan

Corrugated sheets ESAL Profile 8 can be screwed onto load-bearing purlins.

Before sheeting is commenced the structure should be checked to ensure that the purlins are plane, correctly spaced and securely fixed. The position of the sheets should be properly marked on the roof surface with the use of stringline.

Purlin spacing depends on the rafter length, the length of the sheets and the end lap, the ridge solution and the overhang at the eaves. Where the rafter lengths do not accommodate an exact number of horizontal sheet courses, cutting off the top sheet course will be necessary.

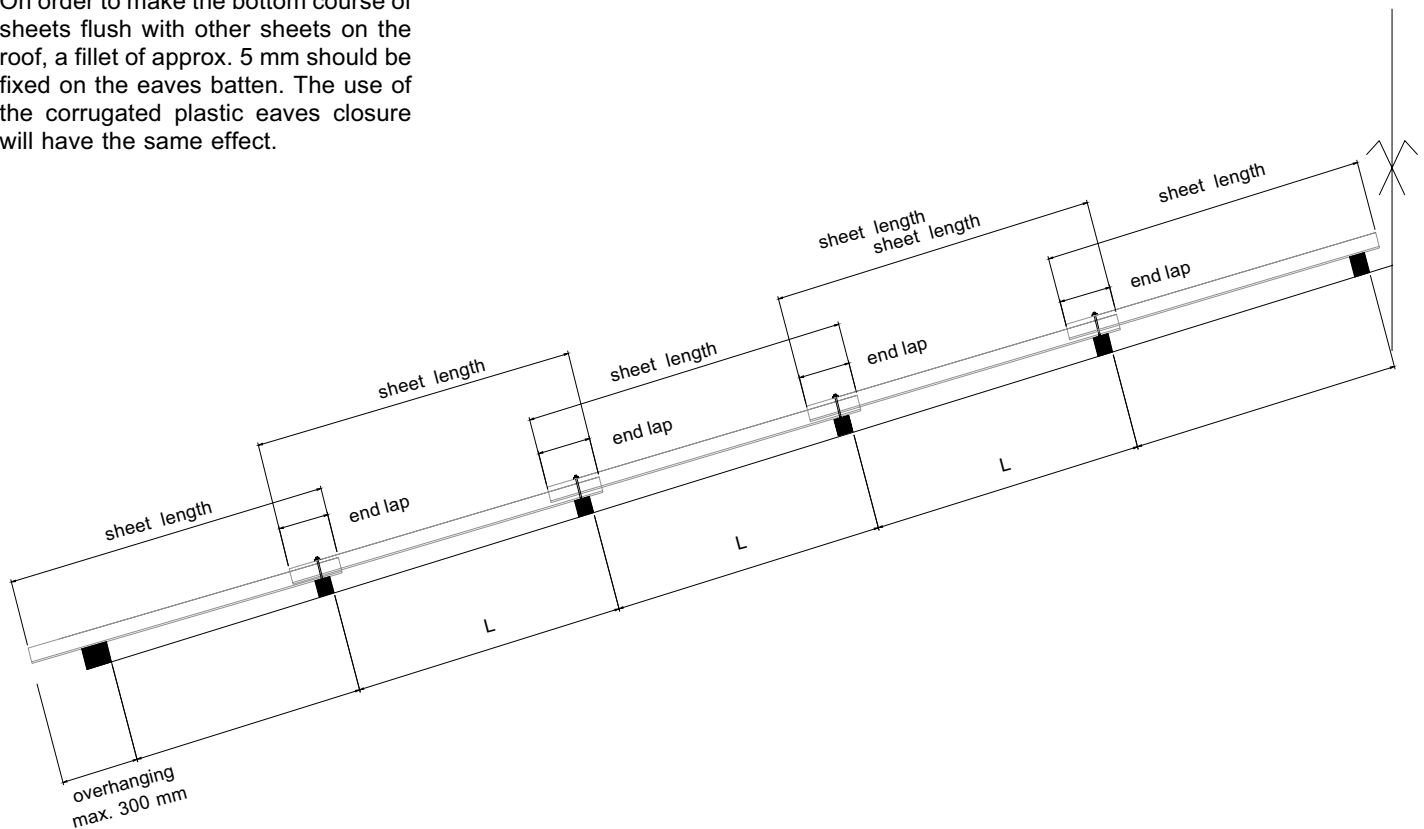
In most situations the batten size 6 x 6 cm is recommended for rafter spacing up to 1,0 m.

On order to make the bottom course of sheets flush with other sheets on the roof, a fillet of approx. 5 mm should be fixed on the eaves batten. The use of the corrugated plastic eaves closure will have the same effect.

### Purlins spacing calculated for end lap of 20 cm

Sheet length mm	Purlin spacing mm
1250	1050

Support centres (i.e.) purlin spacing for ESAL Profile 8 roof sheeting should be a maximum of 1050 mm for a superimposed load up to 2,0 kN/m<sup>2</sup>.



### General fixing guidance

Required number of screws per sheet should be determined taking into account wind power that depends on the location of a building and height of building above ground, type of building (open, partly open, closed), position on the roof and load-bearing capacity of one fixing place.

### Fixing material - Timber

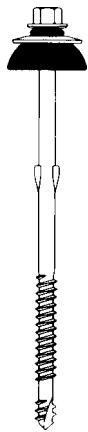
The selection of the correct sheet fastener is extremely important. Self-drilling and self-tapping fasteners are recommended to fix ESAL Profile 8 sheets to the purlins. These fasteners drill through the ESAL Profile 8 sheet, creating a 2mm oversize hole and self tap into the purlin. It is important that the fasteners are installed using the correct power tools, which should have an adjustable depth setting device to ensure the washers are seated correctly - not too loose or too tight.

#### Fastener

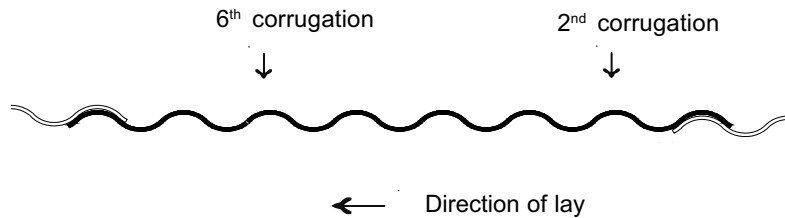
SCFW - BAZ 6,5 x 95 mm

Case hardened,  
carbon steel,  
hot dipped galvanised

Sealing EPDM washer  
with stainless steel  
backing washer

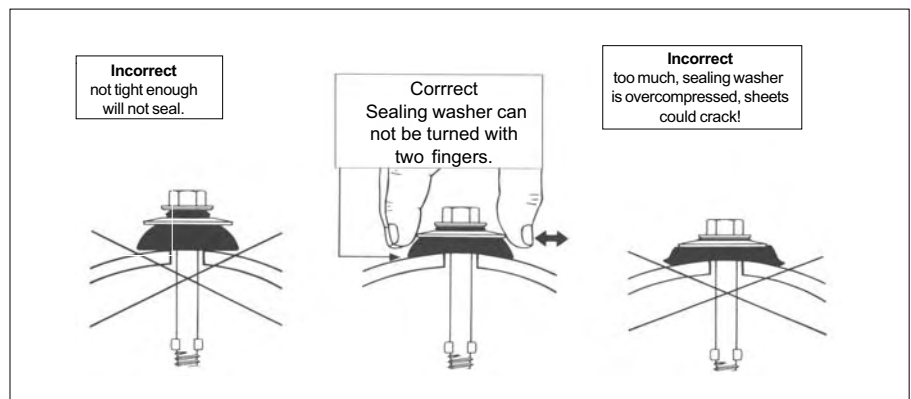
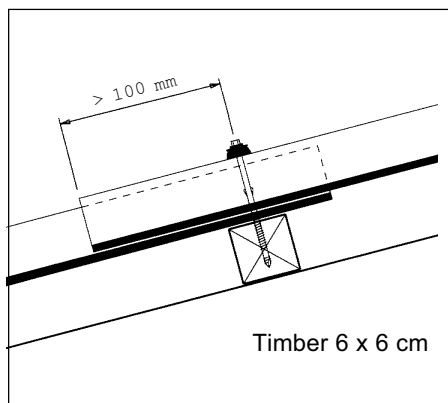
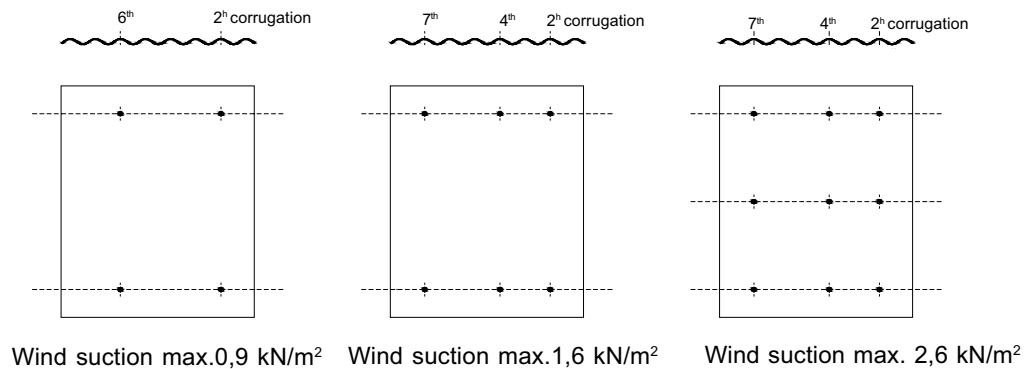


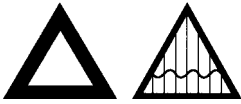
### Relative position and location of fixing



### Number and allocation of screws for closed building up to 20 m height

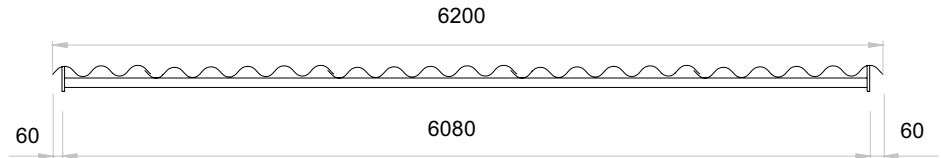
Building height	Roof pitch.	Normal	Edges	Corners
≤ 8 m	≥ 7° ≤ 25°	4	4	6
	> 35°	4	4	4
> 8 m ≤ 20 m	≥ 7° ≤ 25°	4	6	9
	> 25° ≤ 35°	4	4	6
	> 35°	4	4	4





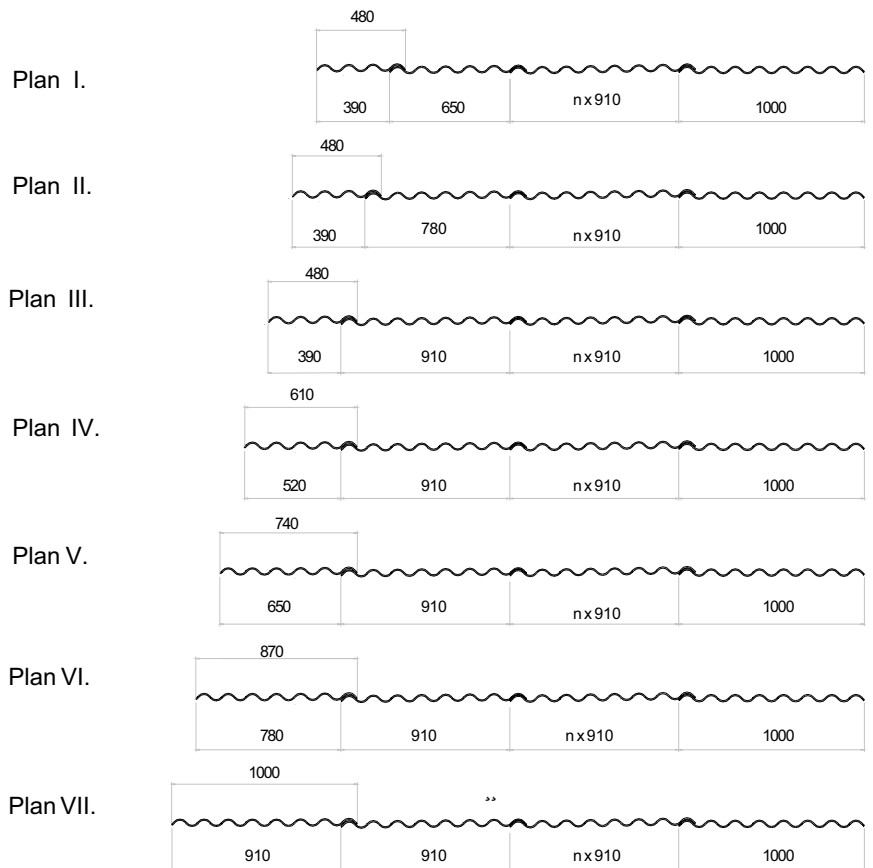
### Guideline on estimating material quantities

The number of sheets in one horizontal row is defined in the table below for roofs up to 11 m wide. The required number of sheets for wider roof is simply calculated taking into account that one net covering width of the sheet is 910 ± 2 mm.



Number of sheets in one horizontal row	Number of sheets						
	Plan I.	Plan II.	Plan III.	Plan IV.	Plan V	Plan VI	Plan VII.
2	1130	1260	1390	1520	1650	1780	1910
3	2040	2170	2300	2430	2560	2690	2820
4	2950	3080	3210	3340	3470	3600	3730
5	3860	3990	4120	4250	4380	4510	4640
6	4770	4900	5030	5160	5290	5420	5550
7	5680	5810	5940	6070	6200	6330	6460
8	6590	6720	6850	6980	7110	7240	7370
9	7500	7630	7760	7890	8020	8150	8280
10	8410	8540	8670	8800	8930	9060	9190
11	9320	9450	9580	9710	9840	9970	10100
12	10230	10360	10490	10620	10750	10880	11010
13	11140	11270	11400	11530	11660	11790	11920

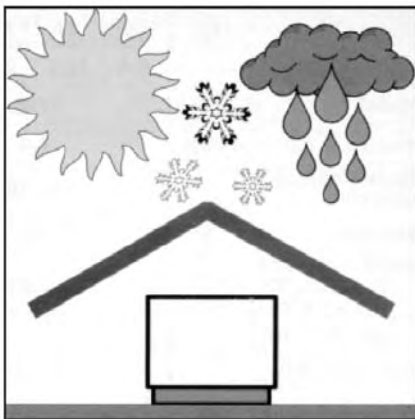
**Important**  
Minimum sheet width  
is 4 corrugations.



### Storage

Corrugated sheets should be stored as close as practically possible to area of works, on a firm, level base under cover, preferably in a building. If inside storage is not available, a tarpaulin or similar can be employed. If a tarpaulin is used, provision must be made for effective air circulation around each stack. This includes spacing the tarpaulin off the top and of the stack to avoid condensation. The plastic wrapping in sheets is only designed to protect the sheets in transit.

Ingress of moisture into corrugated sheets at this stage may detrimentally manifest itself later in efflorescence staining.



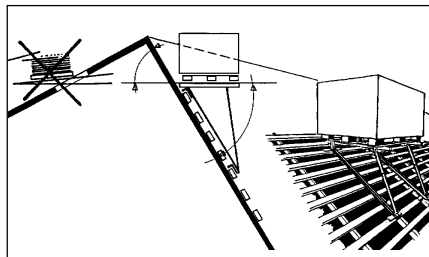
### Notes

After installation, due to the vapour permeability of fibre cement sheeting, dampness may appear on the underside of some sheets. This is a well-known temporary phenomenon, and the dampness will disappear following successive wet and dry periods. This in no way affects the weatherproof quality of the sheets.

### Safety at work

Always observe the relevant provisions of the Health and Safety at Work legislation currently in force.

Take extra care in a roof during windy, wet or frosty weather.



### Site working

To minimise nuisance dust, cut sheets with a handsaw or slow-speed reciprocating power saw. The use of angle grinders is not recommended. After cutting remove dust from the sheet to avoid staining.

Do not step on lap corrugations.

Always fix sheets fully before moving on.

When handling sheets, lift by the ends only.

