



DURASER[®]

FRP ROOFING &
CLADDING SHEETS



POLSER[®]



Duraser is the trademark of Polser FRP Panels Inc. which denotes the opaque FRP/GRP (glass fiber reinforced plastic) roofing and cladding sheets that are produced in the modern continuous lamination lines. Most of the company's production of Duraser sheets are being exported to European countries. The main ingredients of Duraser sheets are high quality polyester resins and glassfiber reinforcements which provide high mechanical strength properties to the product.

General Description:

Duraser GRP sheets are modern building products which have many different fields of application. They bring solutions to the projects where classical metal, fiber cement and asbestos based products are not ideal fits for the requirements.

Low thermal conductivity: Thanks to its low thermal conductivity both in single and double skin applications where in between two Duraser sheets glass wool or rock wool is laid the ambient temperature is maintained much better than the metal sandwich panels.

Resistance to corrosion: Even though GRP sheets are resistant to general corrosion of chemicals and sea water, Duraser sheets can be coated with film and/or gel coat on both sides in order to improve their performance further.

No need for maintenance: Only general and periodical cleaning of the roof is sufficient.

Biological resistance: Duraser sheets have perfect resistance against micro organisms, algae, mildew and fungus.

Light and strong: For new roofing projects Duraser sheets save from the cost of construction since they do not require a heavy structure to carry out their weight. For over roofing projects Duraser sheets might be produced with a matching profile to be installed on an existing roof. Thanks to the light weight of the material they do not create an excessive additional weight on the existing construction.

Minimum waste: Since the sheets are produced according to ordered lengths the scrap from installation becomes a minimum.

They reduce the noise due to rain

Wide choice of colors: Duraser sheets can be produced at many RAL colors. Please contact our sales department to get further information.

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Dimensional Tolerances

Unit Weight : $\pm 10\%$

Average Thickness : $\pm 15\%$

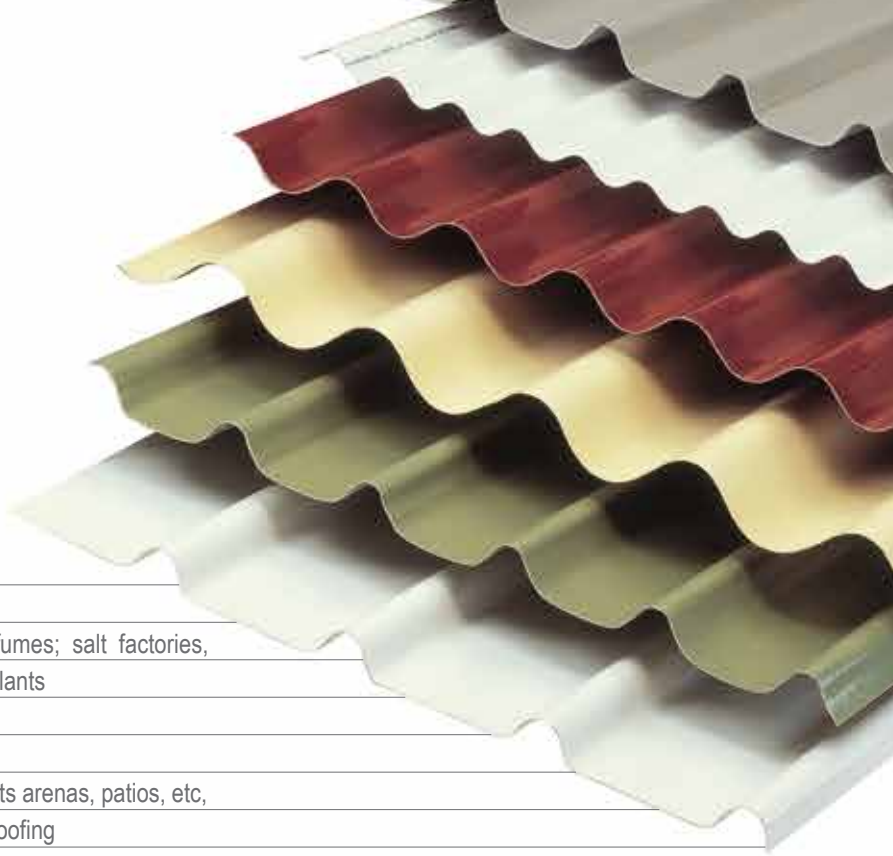
Width : $\pm 1\%$

Length : Up to 2.5 m 0 mm + 20 mm

> 2.5 m 0 + ± 0.8

Common Applications:

- Industrial buildings, factories and warehouses,
- Industrial buildings which have exposure to the corrosive fumes; salt factories, fertilizer factories, paper mills, chemical plants, petrochemical plants
- All types of farm buildings
- Cladding and louvers of cooling towers
- Applications where a light weight roofing sheet is required; sports arenas, patios, etc,
- As over roofing sheets for renovation of old metal or asbestos roofing



Technical Specifications

- Standard Colours : RAL 5015 - 7035 - 8011
8012 - 9016
- Surface (top/bottom) : Standart, protective film,
U.V resistant film,
U.V resistant gelcoat.
- Standard thickness : 1.50 - 1.80 - 2.00 mm (up to 3.00 mm)
- Standard length : According to the requirement
(max.13 mt. due to transportation limits)
- Specific weight : 1.50 - 1.65 gr/cm³
- Service temperature : - 40°C, +120°C
- Bending strength : ≥ 100 Mpa (ISO 14125)
- Tensile strength : ≥ 50 Mpa (ASTM D 638)
- Modulus of elasticity : ≥ 4500 Mpa (ISO 14125)
- Thermal linear expansion coeff: $2.7 \times 10^{-2} \text{ } ^\circ\text{C}^{-1}$
- Water absorption : % 0.2
- Barcol hardness : > 40 Barcol
- Self ignition temperature : 487 °C
- Heat transmission coeff : $\sim 5 \text{ W/m}^2 \text{ } ^\circ\text{K}$



Optional Product Specifications

■ DURASER ST:

Standart Duraser sheets which are produced with orthophtalic polyester resins.

■ DURASER M:

Duraser sheets which are produced with orthophtalic polyester resins. The top surface is coated with Melinex 301 polyester film.

■ DURASER MX:

Duraser sheets which are produced with orthophtalic polyester resins. The top surface is coated with Melinex 389 high UV resistant polyester film.

■ DURASER JUV:

Duraser sheets which are produced with orthophtalic polyester resins. The top surface is coated with high UV resistant ISO NPG gelcoat.

■ DURASER JUV PLUS:

Duraser sheets are produced with orthophtalic polyester resins. The top and bottom surfaces are coated with UV resistant ISO NPG gelcoat.

■ DURASER FR:

Duraser sheets which are produced with fire retardant resins and protected by fire retardant gelcoat on top surfaces.

■ DURASER ACOR:

Duraser sheets which are produced with isophtalic resins and protected by ISO NPG gelcoat on top surfaces against wheathering.

■ DURASER ACON:

Duraser sheets which are produced with orthophtalic polyester resins. The top surface is protected by polyester film. Bottom surface is coated by a special type of felt which can absorb the condensation that might develop under the sheet.

	Surface Coating	UV Resistance	Fire Grade	Corrosion Resistance
Duraser ST	—	Good	B2 DIN 4102	Good
Duraser M	Melinex 301 Film	Good	B2 DIN 4102	Good
Duraser MX	Melinex 389 Film	Very Good	B2 DIN 4102	Good
Duraser JUV	Gelcoat	Very Good	B2 DIN 4102	Good
Duraser JUV Plus	Gelcoat / Gelcoat	Very Good	B2 DIN 4102	Good
Duraser FR-B2	Gelcoat	Very Good	B2 DIN 4102 Teil 7	Good
Duraser FR-C3	Gelcoat	Very Good	Class 3 BS 476/7	Good
Duraser FR-C1	Gelcoat	Very Good	Class 1 BS 476/7	Good
Duraser FR-M2	Gelcoat	Very Good	M2 No RA01-153	Good
Duraser FR-CA	Gelcoat	Very Good	FS<25 ASTM E-84	Good
Duraser ACOR	Gelcoat	Very Good	B2 DIN 4102	Very Good
Duraser ACON	Melinex 301 Film	Good	B2 DIN 4102	Good

Durapan GRP Sandwich Panels

Durapan sandwich panels combines the advantages of Duraser GRP sheets as high performance skins and 40 kg/m³ PU/PIR foams for superior heat insulation.



Product Structure

- Top and bottom GRP surfaces coated with Diamond Shield high UV protection layer
- Top and bottom GRP sheets contain woven roving reinforcement for high mechanical strength.
- The density of PU/PIR is 40 gr/cm³.



Durapan Product Types

(As per TS EN 13501 flame retardancy standart)

- Durapan ST ES3d0 PUR 40 mm
- Durapan FR CS3d0 PIR 40 mm
- Durapan ST ES3d0 PUR 50 mm
- Durapan FR CS3d0 PIR 50 mm

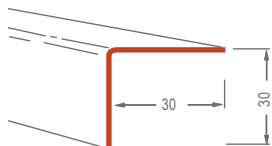
Durapan Profile Types

- 4 Ribs 35/1000
- 5 Ribs 32/1000

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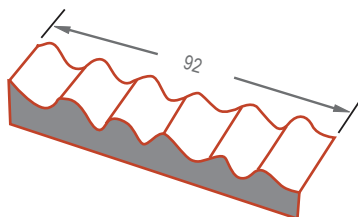
Accessories

All types of accessories are available for Duraser sheets ridge capping, corner piece and gutters are produced with a gelcoated surface. When requested the ridge capings might be produced at any required angle, color and as translucent. Gutters and corner pieces might be produced according to the required dimensions.



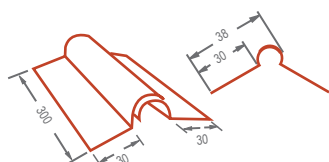
Corner Piece

These roofing accessories are available in required dimensions, angles and in various colors.



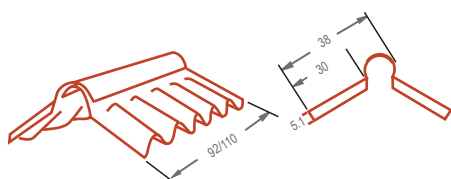
Flat /corrugated closure piece

These accessories can be produced according to required dimensions and angles which match to translucent or opaque roofing sheet profiles.



Flat ridge capping

This type of ridge capping can be used with every type of profile and at every roof slope.



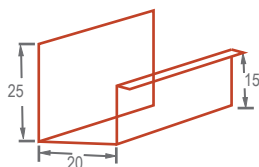
Corrugated ridge capping

This type of ridge capping can be produced for every sheet profile and can be used at any roof slope.



Trapezoidal / corrugated ridge capping

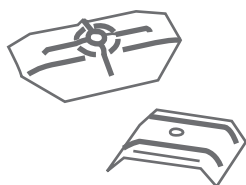
This type of ridge capping can be produced for every sheet profile and it has a fixed angle.



Gutter

Gutters might be produced at every color and length. The inner weathering surface is coated with ISO NPG gelcoat.

Washers matching the color of Duraser Sheets



Self-drilling screw



EPDM foam filler



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1. Cutting

Sheets can be cut using power or hand saws. Saw blades should be fine-toothed carbide type or a safety fabric reinforced abrasive disc. Face shields and appropriate safety equipment should be worn by all operators.



2. Drilling

All sheets should be pre-drilled not less than 4 cm from the sheet end and the holes drilled a minimum of 1.6 mm larger than the fastener diameter.



3. Fastening

When possible, fasteners should be installed at high point of the corrugation with spacings of 15 cm to 20 cm on the center at sheet end and 30 to 40 cm on center for immediate purlins and siding applications.



5. Installation

Under no circumstances should sheets be allowed to support undistributed loads such as the weight of a human body. Use roof ladders for installation. Clean all waste material on the sheets after installation is complete.

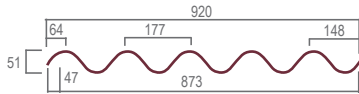
IMPORTANT: Necessary care has been given in order to provide an accurate information. Yet Polser FRP Panels Inc. does not accept any responsibility for the accuracy of the information given in this document. Polser retains the right to make any changes on the information given in this brochure without prior acknowledgement.





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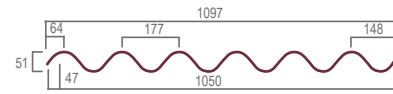
Profile Types and Load Span Tables



CODE 602
Duraser 177 / 51 P5
Fiber cement profile



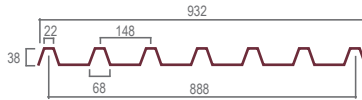
 Single Span							 Multiple Spans							Sheet Weight kg/m ²
*Load kg/m ²							*Load kg/m ²							
SPAN - CM							SPAN - CM							
75 100 125 150 175 200							75 100 125 150 175 200							
t = 1.5 mm 774 326 167 98 61 41							t = 1.5 mm 1464 617 315 183 115 77							2.64
t = 1.8 mm 929 391 201 116 73 49							t = 1.8 mm 1757 741 380 220 138 92							3.18
t = 2.0 mm 1033 435 223 129 82 54							t = 2.0 mm 1952 824 422 245 153 103							3.59



CODE 603
Duraser 177 / 51 P6
Fiber cement profile



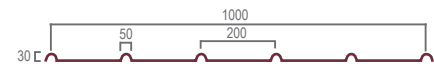
 Single Span							 Multiple Spans							Sheet Weight kg/m ²
*Load kg/m ²						*Load kg/m ²								
SPAN - CM						SPAN - CM								
75	100	125	150	175	200	75	100	125	150	175	200			
t = 1.5 mm	774	326	167	98	61	41	t = 1.5 mm	1464	617	315	183	115	77	3.15
t = 1.8 mm	929	391	201	116	73	49	t = 1.8 mm	1757	741	380	220	138	92	3.79
t = 2.0 mm	1033	435	223	129	82	54	t = 2.0 mm	1952	824	422	245	153	103	4.27



CODE 806
Duraser 38/148



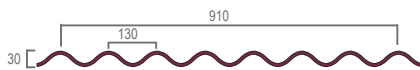
 Single Span							 Multiple Spans							Sheet Weight kg/m ²
*Load kg/m ²							*Load kg/m ²							
SPAN - CM							SPAN - CM							
75	100	125	150	175	200		75	100	125	150	175	200		
t = 1.5 mm	630	265	136	78	49	33	t = 1.5 mm	1191	502	258	149	93	62	2.79
t = 1.8 mm	754	319	163	94	59	40	t = 1.8 mm	1427	602	308	178	113	75	3.36
t = 2.0 mm	838	353	181	104	67	44	t = 2.0 mm	1586	668	342	198	124	84	3.78



CODE 950
Duraser SPG Profile



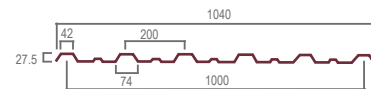
 Single Span							 Multiple Spans							Sheet Weight kg/m ²
*Load kg/m ²							*Load kg/m ²							
SPAN - CM							SPAN - CM							
75	100	125	150	175	200		75	100	125	150	175	200		
t = 1.5 mm	325	137	70	40	26	17	t = 1.5 mm	615	259	132	76	49	32	2.84
t = 1.8 mm	390	165	84	49	30	21	t = 1.8 mm	738	311	159	92	58	39	3.41
t = 2.0 mm	433	183	93	54	34	23	t = 2.0 mm	819	346	177	103	65	43	3.85



CODE 601
Duraser P8 Profile



 Single Span							 Multiple Spans							Sheet Weight kg/m ²
*Load kg/m ²							*Load kg/m ²							
SPAN - CM							SPAN - CM							
75	100	125	150	175	200		75	100	125	150	175	200		
t = 1.5 mm	310	130	66	39	24	17	t = 1.5 mm	585	247	126	73	46	31	2.84
t = 1.8 mm	372	156	81	47	29	19	t = 1.8 mm	704	297	151	87	55	37	3.41
t = 2.0 mm	414	173	89	51	32	21	t = 2.0 mm	782	330	169	98	61	41	3.85

CODE 827
Duraser 27/200 G



														Sheet Weight kg/m ²
Single Span							Multiple Spans							
*Load kg/m ²							*Load kg/m ²							
SPAN - CM							SPAN - CM							
	75	100	125	150	175	200		75	100	125	150	175	200	
t = 1.5 mm	339	143	73	42	27	18	t = 1.5 mm	641	270	138	80	50	33	2.84
t = 1.8 mm	407	171	88	50	31	21	t = 1.8 mm	769	324	166	96	60	41	3.41
t = 2.0 mm	451	190	97	56	35	24	t = 2.0 mm	854	360	185	107	68	45	3.85



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Certifications



Turkish Standards Institute
Quality Certificate
TS-EN 1013-2



Impact Resistance Certification
ACR(M) 001-200 Class B



Fire Resistance Certification
DIN 4102-B2



Fire Resistance Certification
No RA01-153 : M 2



CONSULTANCY • TESTING
Fire Resistance Certification
BS 476-7 Class 3 SAB3
Class 1 SAA



Fire Resistance
Certification
E - 84 FS<25