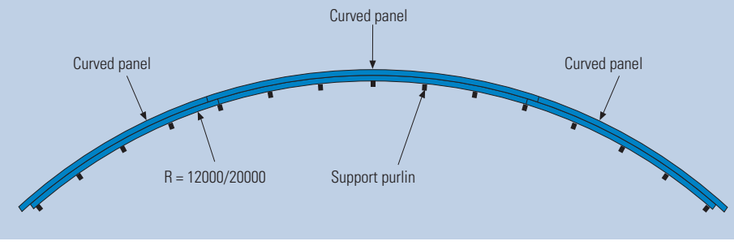
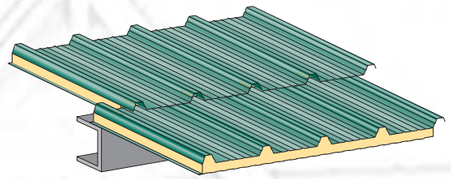
Oyster®

PUR-insulated curved roofing system

Metal sandwich panel with insulation layer in PUR or PUR and rockwool, curved lengthwise (bent radius between 3500 mm and 20000 mm) for roofing of industrial and residential buildings. The OYSTER® panel is optimal for industrial buildings with traditional asbestos cement roofing (variable length between 1.22 and 2.44 m and bent radius between 12 and 20 m). The new panel is a thermally insulated solution to replace such sheets.
It is also fit for industrial buildings with shingle roofing and pre-assembled reinforced concrete or pre-stressed concrete rafters with an usual center distance between them of 4-6 m and linked together by curved elements.
Panels should be mounted with a clear span of approximately 2÷3 m.
Ends of panels should be fastened to the support structure using adequate steel clamps. Usually, such curved elements are made of corrugated metal or asbestos cement sheets. The Oyster panel is an alternative single solution with high mechanical performances and insulating power, and it's product in three version: OYSTER® - OYSTER® FIRE - OYSTER® FIRE SOUND.
For additional technical information, refer to the OYSTER® technical manual.

FOR INDUSTRIAL BUILDINGS WITH TRADITIONAL ASBESTOS CEMENT ROOFING

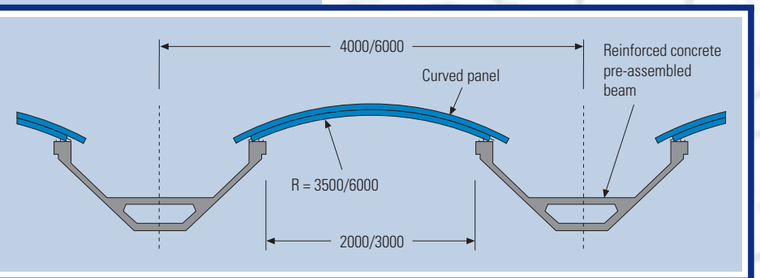


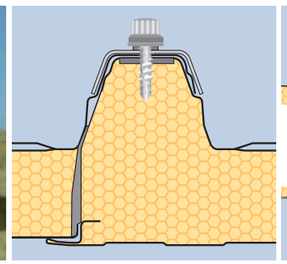


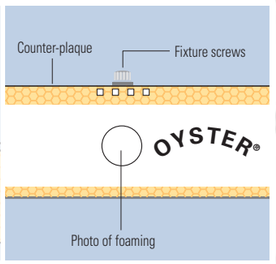
It is important for this type of roofing that the junction between panels is set in the center of the support purlin, as indicated in the picture.

The superstructure joint is fitted with a continuous seal gasket which is inserted during production. In addition, a counter-plaque is inserted in the lateral male fret in the central area of the panel; this plaque is thick enough to take the superstructure assembly screws.
The single span is fixed by stitching the central section (in the position of the counter-plaque, as in the drawing below) before securing the panels at the ends. This operation is also recommended when fixing multiple spans.

FOR INDUSTRIAL BUILDINGS WITH SHINGLE ROOFING







OYSTER®

Techical characteristics

- Max outside sheet lenght: 6 m
- Variable bent radius: 3.5 to 20 m
- Useful pitch: 1000 mm.

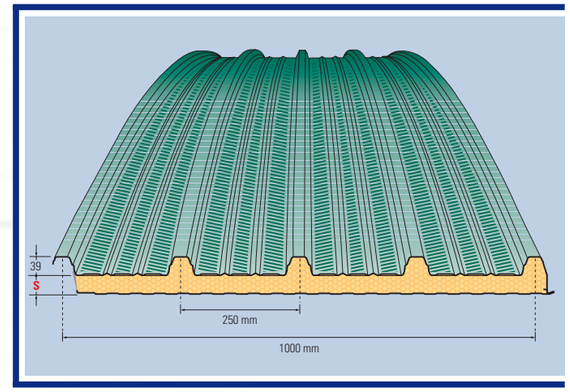
Metal cover

Outside • Prepainted galvanised steel 6/10 mm.
• Natural or prepainted aluminium 6/10 mm.

Inside • Prepainted galvanised steel 4/10 mm.

Maximum load

The tables give the max. permissible overloads in N/m² corresponding to the clear spans between the supports and the radii of curvature calculated on the basis of experimental data, in order to ensure simultaneously a camber smaller than or equal to a two hundredth of the span and a safety factor equal to or greater than three with respect to breakage. The overloads given concern the panel with both steel claddings (ext. 0.6 mm - int. 0.4 mm).
The values regarding the single span assume the existence of constraints at the two ends, such as to configure the static situation of the arc with thrust eliminated (hinges). The values concerning the multiple span assume the existence of hinges at the external supports and single supports to the internal ones.

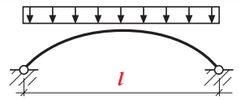


Thermal transmittance and unit panel weight

S mm	40	50	60
K = Kcal/m²h °C	0,36	0,30	0,26
K = Watt/m² °C	0,42	0,35	0,30
Panel weight kg/m²	10,81	11,19	11,57

Maximum loads table (Single span)

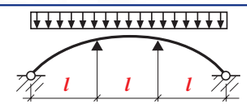
Two hinged arc (single span)
External sheet: steel 0.60 mm.
Internal sheet: steel 0.40 mm.



BENT RADIUS IN mm	S40 (span in mm.)					S50 (span in mm.)					S60 (span in mm.)				
	1000	2000	3000	4000	5000	1000	2000	3000	4000	5000	1000	2000	3000	4000	5000
3500	1043	730	532	381	264	1129	941	680	515	363	1326	1162	852	659	474
6000	679	480	312	222	161	724	644	417	302	223	811	736	529	388	293
9000	590	385	216	149	107	602	459	293	205	150	621	490	378	266	198
12000	558	356	170	112	80	578	382	236	156	114	601	433	312	204	151
16000	540	304	139	85	58	564	333	198	119	83	590	389	270	160	112
20000	532	257	124	70	46	548	289	183	101	67	585	382	256	137	92

Maximum loads table (Multiple span)

Two hinged arc with two inside supports (triple span)
External sheet: steel 0.60 mm.
Internal sheet: steel 0.40 mm.



BENT RADIUS IN mm	S40 (span in mm.)		S50 (span in mm.)		S60 (span in mm.)	
	1000	2000	1000	2000	1000	2000
3500	1317	957	1425	1188	1674	1467
6000	858	606	914	813	1024	929
9000	745	486	760	580	784	619
12000	705	450	730	482	758	547
16000	682	384	712	421	745	491
20000	672	325	692	365	738	482