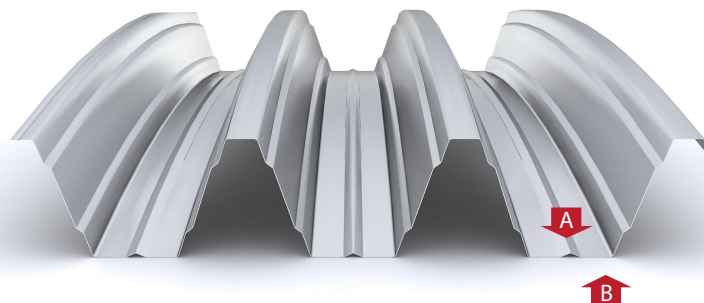


INCO 155.3 Curved[®]

SELF-SUPPORTING ROOFING

Product



Perforated



Overlap

Working Length: 840 mm
Height Profile: 155 mm

Description

INCO 155.3 metallic roof for use as free-standing roof for spans of between 16 and 23 metres. A light roof which eliminates the need for a support structure. Quicker assembly, reduced costs, structural savings and improved aesthetics.

Free-standing roofs are available galvanized and in different primed colours. Improved acoustics can be obtained with perforated steel. Uses include roofing for padel courts and sports centres. Some of its uses include covering basket courts, futsal or sport centers.

Applications

- Industrial: hangars, plants, water tanks.
- Agricultural: stables, sheds.
- Commercial: open spaces, sport, walled.
- Public: schools, gymnasium, pavilions.

Complementary Articles

- Flat Cellular Polycarbonate
- Tight Joint INCO 155.3 Upper/ Lower Trimming

Related Documents

- General Catalogue
- Technical Sheet
- Technical Dossier
- Declaration of Performance (DDP / DOP)

Material

Steel	EN 10346
Organic Coating	EN 10169
Dimensional Tolerance	EN 10346
Reaction to Fire	EN 14782

Finishing

- Galvanized
- Standard Organic Coating / High Organic Coating
- Specialty Materials: Corten Steel and Magnelis
- Perforated for Acoustic Solutions

Manufacturing Conditions

Manufacturing Length	Min. / Max. 2.200 / 24.000 mm
Thickness Range	0,60 0,70 0,80 1,00 1,20 1,50 mm
Minimal Order	250 m ²
Package Weight	1.500-2.000 kg
Colour	White RAL 9003. Other on demand
Colour Position	A

Transport Conditions

Thickness(mm)	Surface* (m ²)	Thickness(mm)	Surface* (m ²)
0,70	1.100	1,20*	900
0,80	1.200	1,50*	800
1,00*	1.200		

* special transport for spans > 13 m

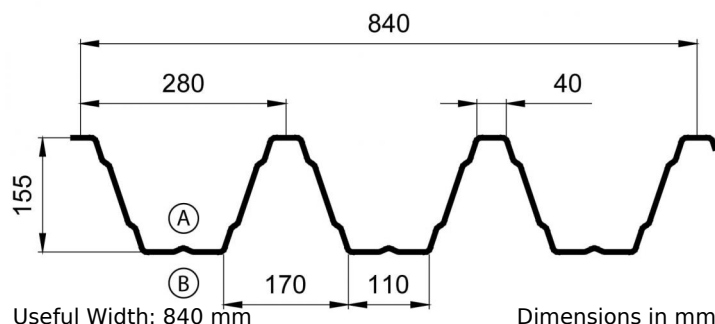
Rev. 2021.11

INCO 155.3 Curved®

SELF SUPPORTING ROOFING ($f_y = 280 \text{ N/mm}^2$)



Profile Dimensions



Material Characteristics

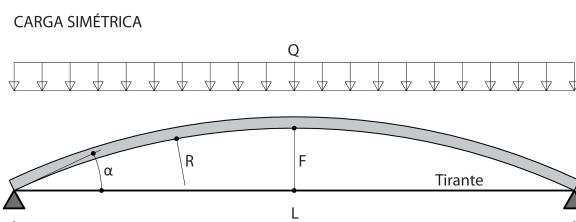
Material	Steel
Elastic limit (N/mm^2)	280
Elasticity modulus (N/mm^2)	2.100.000
Density (Kg/m^3)	7.850

Effective Values

Thickness (mm)	Weight (daN/m^2)	Gross Area (mm^2/m)	M. Inertia (mm^4/m)			M. Resistant (mm^3/m)	
			Gross	Effective +	Effective -	Effective +	Effective -
0,70	9,81	1.250	3.350.623	2.916.680	2.724.710	29.957	34.836
0,80	11,21	1.429	3.829.309	3.450.391	3.251.666	35.906	41.724
1,00	14,01	1.786	4.786.712	4.768.768	4.887.140	51.566	54.888
1,20	16,82	2.143	5.744.164	5.902.309	5.556.108	64.709	66.955
1,50	21,02	2.679	7.180.459	7.605.500	7.194.412	84.555	85.151

Usage Table

Maximum load (daN/m^2)



Thickness (mm)	Span between supports (m)													
	10	11	12	13	14	15	16	17	18	19	20	21	22	23
0,70	255 262 16 2,00	229 227 16 2,00	208 194 16 2,00	194 182 16 2,00	178 162 16 2,00									
0,80			258 242 16 2,00	235 210 16 2,00	219 187 16 2,00	201 165 16 2,00								
1,00					288 217 16 2,00	272 197 16 2,00	258 177 16 2,00	229 175 16 2,00	208 152 16 2,00					
1,20							324 260 20 2,00	293 215 20 2,00	276 187 20 2,00	249 159 20 2,00	221 137 20 2,00	194 120 20 2,00		
1,50									402 277 24 2,00	368 240 24 2,00	317 202 24 2,00	272 172 24 2,00	229 147 24 2,00	195 125 24 2,00
Radius (mm)	11.831	13.014	14.197	15.380	16.563	17.747	18.930	21.403	23.820	26.389	29.099	31.928	34.849	38.033
Deflection (m)	1.108	1.219	1.330	1.441	1.552	1.663	1.774	1.760	1.766	1.769	1.772	1.776	1.782	1.780
Angle (°)	25,0	25,0	25,0	25,0	25,0	25,0	25,0	23,4	22,2	21,1	20,1	19,2	18,4	17,6

E	L		Q1: Maximum load ELU (daN/m^2)	Q2: Maximum load ELS ($L/250$) (daN/m^2)	DT: Tie Bar Diameter (mm)	ST: Spacing Between Tie Bars (m)
	Q1	Q2				
	DT	ST				

The values of resistance ELU and ELS at uniformly distributed load that appear in the table have been obtained by exploiting the results of experimental tests. Modifying the configuration of the tie rods indicated in the table implies re-evaluating the resistance of the roof.

Calculation Legend

v21.06.16

Combination of Actions:

PP: Own Weight ; CP: Permanent Load

ELU: $Q = 1,35 * (PP + CP) + 1,50 * \text{Live Load}$

$Q = 1,35 * (PP + CP) + 1,50 * \text{Wind} + 0,75 * \text{Snow}$

$Q = 1,35 * (PP + CP) + 1,50 * \text{Snow} + 0,90 * \text{Wind}$

ELS: $Q = 1,00 * (PP + CP) + 1,00 * \text{Use}$

$Q = 1,00 * (PP + CP) + 1,00 * \text{Wind} + 0,50 * \text{Snow}$

$Q = 1,00 * (PP + CP) + 1,00 * \text{Snow} + 0,60 * \text{Wind}$

ELU_{Asymmetric}: $Q = 1,35 * (PP + CP) + 1,50 * \text{Snow}$

Reglamentation:

UNE-EN 1993-1-3: Eurocode 3 Part 1-3

Declaration of Performance: www.incoferfil.com/dop

Calculation report request: www.incoferfil.com/cyd



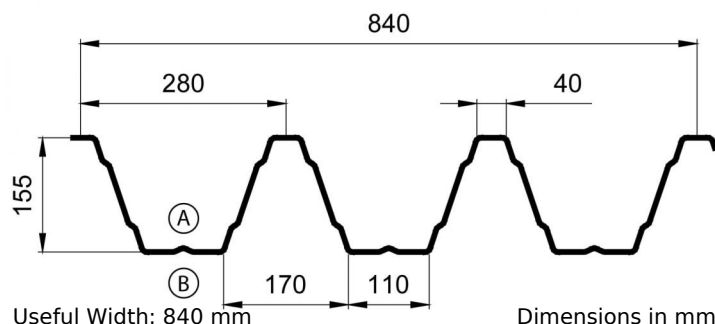
EN 14782:2006

INCO 155.3 Curved®

SELF SUPPORTING ROOFING ($f_y = 320 \text{ N/mm}^2$)



Profile Dimensions



Material Characteristics

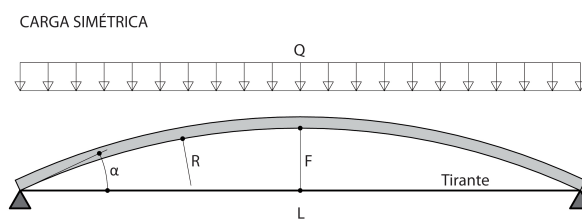
Material	Steel
Elastic limit (N/mm^2)	320
Elasticity modulus (N/mm^2)	2.100.000
Density (Kg/m^3)	7.850

Effective Values

Thickness (mm)	Weight (daN/m^2)	Gross Area (mm^2/m)	M. Inertia (mm^4/m)			M. Resistant (mm^3/m)	
			Gross	Effective +	Effective -	Effective +	Effective -
0,70	9,81	1.250	3.350.623	2.916.680	2.724.710	29.957	34.836
0,80	11,21	1.429	3.829.309	3.450.391	3.251.666	35.906	41.724
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0,80		325 277 16 2,00	293 242 16 2,00	270 209 16 2,00	247 187 16 2,00	227 164 16 2,00								
1,00				348 292 20 2,00	323 262 20 2,00	304 237 20 2,00	288 209 20 2,00	254 178 20 2,00	229 152 20 2,00					
1,20						375 322 24 2,00	360 287 24 2,00	323 247 24 2,00	291 217 24 2,00	258 185 24 2,00	227 160 24 2,00	197 140 24 2,00	171 120 24 2,00	
1,50									434 277 24 2,00	389 239 24 2,00	330 202 24 2,00	281 172 24 2,00	237 146 24 2,00	201 126 24 2,00
Radius (mm)	11.831	13.014	14.197	15.380	16.563	17.747	18.930	21.257	23.728	26.341	29.085	31.976	35.014	38.180
Deflection (m)	1.108	1.219	1.330	1.441	1.552	1.663	1.774	1.773	1.773	1.773	1.773	1.773	1.773	1.773
Angle (°)	25,0	25,0	25,0	25,0	25,0	25,0	25,0	23,6	22,3	21,1	20,1	19,2	18,3	17,5

E	L		Q1	Q2	DT	ST
	Q1	Q2				

Q1: Maximum load ELU (daN/m^2)
 Q2: Maximum load ELS ($L/250$) (daN/m^2)
 DT: Tie Bar Diameter (mm)
 ST: Spacing Between Tie Bars (mm)

The values of resistance ELU and ELS at uniformly distributed load that appear in the table have been obtained by exploiting the results of experimental tests. Modifying the configuration of the tie rods indicated in the table implies re-evaluating the resistance of the roof.

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$Q = 1,35 * (PP + CP) + 1,50 * \text{Wind} + 0,75 * \text{Snow}$

$Q = 1,35 * (PP + CP) + 1,50 * \text{Snow} + 0,90 * \text{Wind}$

ELS: $Q = 1,00 * (PP + CP) + 1,00 * \text{Uso}$

$Q = 1,00 * (PP + CP) + 1,00 * \text{Wind} + 0,50 * \text{Snow}$

$Q = 1,00 * (PP + CP) + 1,00 * \text{Snow} + 0,60 * \text{Wind}$

ELU_{Asymmetric}: $Q = 1,35 * (PP + CP) + 1,50 * \text{Snow}$

Reglamentation:

UNE-EN 1993-1-3: Eurocode 3 Part 1-3

Declaration of Performance: www.incoferfil.com/dop

Calculation report request: www.incoferfil.com/cyd



EN 14782:2006