

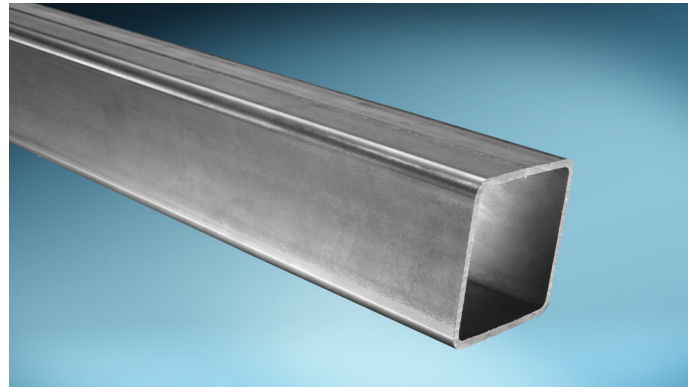
Forcon® 235

Tubes to EN 10219: S235JRH

Forcon® is our range of cold formed structural hollow sections to EN 10219, available with minimum yield strengths ranging from 235 MPa to 700 MPa.

The grade S235JRH is suitable for a variety of applications in construction or mechanical engineering.

Our Forcon® hollow sections are available in a range of popular sizes as well as with the option TT for Tailored Tubes with customised extras.



Forcon® 235 fully complies with the European standard for cold formed welded structural hollow sections of non-alloy and fine grain steels, EN 10219. As all our tubes, they are manufactured to high quality standards and made from fully killed steel. This ensures a more uniform microstructure and makes them easier to process, offering high levels of formability and excellent weldability.

Tolerances

Dimensional tolerances are to EN 10219.

Galvanising suitability

The steel composition complies with category A according to ISO 14713-2:2020, perfectly suitable for hot dip zinc coating.

CE Marking

Forcon® 235 is manufactured and CE marked according to EN 10219 grade S235JRH.

Forcon® TT

Our structural hollow sections are also available as Forcon® TT. For these Tailored Tubes you can choose from several premium options - for example tighter tolerances, a certain position of the weld seam or a scarfed internal weld bead, a superior surface finish or special bundling. We are ready to help you to tailor Forcon® TT to your needs. Our customised Forcon® TT is the key to boosting efficiency in manufacturing.

Technical Support

We want you to get the best from Forcon® hollow sections. Our sales team is always happy to answer your questions on steel selection or available options. And our engineers are available to assist you with the application of Forcon® for efficient and lightweight design.

Inspection & Testing

Forcon® 235 hollow sections are subject to non-specific inspection and testing and are supplied with a test report type 2.2 to EN 10204.

Availability

Forcon® 235 is available across the size range indicated in the below tables. Minimum order quantities may apply and other sizes or thicknesses may be available – please contact your Tata Steel Nederland Tubes representative for details.

Standard lengths of Forcon® 235 are 6m, 12m or 15m, depending on the size and production mill. Special mill lengths from 4.5m up to 20m can be arranged upon request.

Sustainability

Steel is strong, durable, versatile, re-usable and most importantly, it is endlessly 100% recyclable without loss of quality. We take sustainability very seriously and as well as being a member of Responsible Steel™, we have BES 6001 certification and Environmental Product Declarations (EPD's) for our Forcon® hollow sections. To reduce carbon emissions, you can choose from different Zeremis® solutions.

Mechanical properties

Grade	Min. yield strength	Tensile strength	Min. Elongation	Min. impact KV2 at test temperature of 20°C
	R _{eH} (MPa)	R _m (MPa)	A (%)	J
S235JRH	235	360-510	24	27

The impact properties are verified only when the option is specified by the purchaser at the time of enquiry and order.
For thicknesses > 3 mm and section sizes D/T < 15 (round) and (B+H)/2T < 12.5 (square and rectangular) the minimum elongation is reduced by 2. For thicknesses ≤ 3 mm the minimum value for elongation is 17 %.
For thicknesses < 3 mm, a gauge length of Lo = 80 mm shall be used provided a test piece width of 20 mm can be achieved, otherwise a gauge length of 50 mm shall be used with a test piece width of 12.5 mm.

Chemical composition

	C	Si	Mn	P	S	Al _{tot}	CEV
	max.	max.	max.	max.	max.	min.	max.
S235JRH	0.17	-	1.40	0.040	0.040	0.020	0.35

All values are in weight%

Forcon® 235
Circular hollow sections (CHS)

mm	2.0	2.6	3.2	3.6	4.0	5.0	6.0	6.3	8.0	10.0
31.8										
33.7										
38.0										
41.5										
42.4										
44.5										
48.3										
51.0										
57.0										
60.3										
63.5										
70.0										
76.1										
82.5										
88.9										
101.6										
108.0										
114.3										
121.0										
127.0										
139.7										
159.0										
168.3										
193.7										
219.1										
244.5										
273.0										
323.9										

These dimensions are available on request.

Forcon® 235

Rectangular hollow sections (RHS)

mm	2.0	2.5	3.0	3.5	4.0	5.0	6.0	8.0	10.0
30/20									
40/20									
40/30									
50/20									
50/25									
50/30									
50/40									
60/20									
60/30									
60/40									
60/50									
70/40									
70/50									
80/30									
80/40									
80/50									
80/60									
81/51									
90/50									
90/70									
100/40									
100/50									
100/60									
100/80									
110/70									
120/40									
120/50									
120/60									
120/80									
120/100									
140/50									
140/60									
140/80									
150/100									
160/80									
160/90									
180/80									
180/100									
200/80									
200/100									
200/120									
200/150									
220/120									
250/100									
250/150									
300/100									
300/200									

These dimensions are available on request.

These dimensions are regularly rolled.

Forcon® 235

Square hollow sections (SHS)

mm	2.0	2.5	3.0	3.5	4.0	5.0	6.0	8.0	10.0
25/25									
28/28									
30/30									
35/35									
40/40									
45/45									
50/50									
60/60									
70/70									
80/80									
90/90									
100/100									
120/120									
140/140									
150/150									
160/160									
180/180									
200/200									
250/250									

These dimensions are available on request.

These dimensions are regularly rolled.

www.tatasteelnederland.com/tubes

Tata Steel Nederland Tubes B.V.

Souvereinstraat 35
4903 RH Oosterhout
The Netherlands

E: TubesNL@tatasteeleurope.com

While care has been taken to ensure that the information contained in this publication is accurate, neither Tata Steel, nor its subsidiaries, accept responsibility or liability for errors or for information which is found to be misleading.

Before using products or services supplied or manufactured by Tata Steel and its subsidiaries, customers should satisfy themselves as to their suitability.

Copyright 2025
Tata Steel IJmuiden B.V.