MARCEGAGLIA
Headquarters
quality department

DECLARATION OF PERFORMANCE

NR. 0103/001 Rel. 0

Identification code of the product-type	Welded tube made of non-alloy structural steel S235JRH in accordance with EN10219:2006.
Identification of the construction product	In accordance with the informations included in the identification label with barcode and/or bundle number and in the inspection certificate.
Intended use of the construction product	Cold formed welded structural hollow sections of circular, square, or rectangular forms formed cold without subsequent heat treatment.
Manufacturer (registered office)	**Marcegaglia S.p.A.** Via Bresciani, 16 – 46040 Gazoldo degli Ippoliti (MN) – Italia
Production plant	**Casalmaggiore** s.s.420 Sabbionetana – 26041 Casalmaggiore (CR) - Italia
System of assessment and verification of constancy of performance of the construction product	**2+**
Name and identification number of the notified body	RINA Service S.p.A. – Via Corsica, 12 – 16128 Genova - Italia **0474**

Issued the certificate of conformity of the factory production control on the basis of the following elements:

- starting inspection of the production plant and of the factory production control.
- surveillance, evaluation and continuous audits of the factory production control.

DECLARED PERFORMANCE

Essential characteristics	Performance	Harmonised technical specification
Tolerances on dimensions and shape	accordant with table 2	EN10219-2:2006
Elongation	accordant with table 1	EN10219-1:2006
Tensile strenght		
Yield strenght		
Impact strenght		
Weldability (CEV)	0.35% max	
Durability	N.P.D.	

This declaration of performance is issued under the sole responsibility of the manufacturer identified in the previous point.

Signed for and on behalf of Marcegaglia S.p.A. by:

Roberto Ing. Ferrari
Casalmaggiore Plant Manager

Casalmaggiore 01/07/2013

This declaration of performance is valid only in presence of the material identification label and the waybill or the inspection certificate issued after delivery.

Table 1 – Mechanical properties							
Steel grade		**Minimum yield strength R_{eH}**	**Tensile strenght R_m**		**Minimum elongation A [c]**	**Minimum impact energy**	
Steel name	**Steel number**	**[MPa]**	**[MPa]**		**[%]**	**KV in J[d]**	
		Specified thickness in mm				**Test temperature**	**Min. impact energy**
		≤ 16	**< 3**	**≥ 3 ≤ 40**	**≤ 40**		
S235JRH[a]	**1.0039**	235	360÷510	360÷510	24[b]	20°	27

a. Impact properties are verified only when option 1.3 is specified.
b. See derogations here below:
   - ☐ For thicknesses > 3 mm and section sizes D/T < 15 (round) e (B+H)/2T < 12,5 (square and rectangular) the minimum elongation is reduced by 2.
   - ☐ For thicknesses ≤ 3,0 mm the minimum value for elongation is 17%
c. For thicknesses < 3,0 mm the percentage elongation may be reported for a gauge lenght of 80 mm or 50 mm
d. Impact test, when applicable or required, shall be carried out in accordance with EN10219-1. Impact test is not required for specified thicknesses < 6 mm.

Table 2 – Tolerances on shape and mass			
	Circular hollow sections		**Square and rectangular hollow sections**
Outside dimensions (D, B e H)[4]	± 1% with a minimum of ± 0,5 mm and a maximum of ±10 mm		H, B < 100 mm ⇒ ± 1% with a minimum of ± 0,5 mm
			100 mm ≤ H, B ≤ 200 mm ⇒ ± 0,8%
			H, B > 200 mm ⇒ ± 0,6%
Thickness (T)	For D ≤ 406,4 mm: T ≤ 5 mm ⇒ ± 10% T >5 mm ⇒ ± 0,5mm		T ≤ 5 mm ⇒ ± 10% T > 5 mm ⇒ ± 0,5 mm
	per D > 406,4 mm ± 10% with a minimum ± 2mm		
Out fo roundness (O)	2% for hollow sections having a D/T ≤ 100[1] using the formula: $O(\%) = \frac{D\max - D\min}{D} * 100$		
Concavity/Convexity (x_1, x_2)[2]	-		Max. 0,8% with a minimum of 0,5% using the formula: $\frac{x1}{B} * 100\%; \frac{x1}{H} * 100\%$; ecc.
Squareness of side (θ)	-		90° ± 1°
External corner profile (C_1, C_2 or R)	-		T ≤ 6 mm ⇒ 1,6T ÷ 2,4T 6 < T ≤ 10 ⇒ 2,0T ÷ 3,0T 10 < T ⇒ 2,4T ÷ 3,6T
Twist (V)	-		2mm plus 0,5 mm/m length
Straightness (e)	0,20 % of total length and 3 mm over any 1 m length.		0,15 % of total length and 3 mm over any 1 m length
Mass (M)	± 6 % on individual delivered length		
Tolerances on length[3]	Exact length	< 6000mm	⇒ 0; + 5 mm
		≥ 6000mm e ≤ 10000mm	⇒ 0; + 15 mm
		> 10000mm	⇒ 0; + 5 mm + 1mm/m
	Approximate length	> 4000mm	⇒ 0; + 50 mm

1. Where D/T > 100 the tolerances on out of roundness shall be agreed.
2. The tolerance on convexity and concavity is independent of the tolerance on outside dimensions.
3. The manufacturer shall establish at the time of enquiry and order the type of length range or length.
4. All external dimensions, including out of roundness, shall be measured at the minimum distance of 100 mm from the end of the hollow section.