

DECLARATION OF PERFORMANCE

NR. 0101/002

Rel. 0

| | |
|--|--|
| Product Identification Code | Welded tube made of structural steel S275J0H in accordance with EN10219 |
| Identification | According to the information stated on the ID 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 shape without subsequent heat treatment. |
| Manufacturer (registered office) | Marcegaglia S.p.A. Via Bresciani, 16 – 46040 Gazoldo degli Ippoliti (MN) – Italia |
| Production Plant | Gazoldo d.I. Via Bresciani, 16 – 46040 Gazoldo degli Ippoliti (MN) - Italia |
| System of assessment and verification of the continuity of performance of the construction product | 2+ |
| Name and ID number of the notified Body | RINA Service S.p.A. – Via Corsica, 12 – 16128 Genova - Italia 0474 |

Certificates of Conformity for the control of the plant production have been issued for the following elements:

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

DECLARED PERFORMANCE

| Main Features | Performance | Harmonised specification |
|------------------------|----------------|--------------------------|
| Dimensional Tolerances | As per Table 2 | EN10219-2:2006 |
| Elongation | As per Table 1 | EN10219-1:2006 |
| Tensile strength | | |
| Yield strength | | |
| Impact strength | | |
| Weldability (CEV) | 0.40% max | |
| Durability | N.P.D. | |

This declaration of performance is issued under the sole responsibility of the manufacturer identified above.

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

Arnaldo Ing. Barini
Gazoldo D.I. Plant Manager

Gazoldo D.I. 01/07/2013

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

| Steel grade | | Minimum yield strength R_{eH} | Tensile strength R_m | | Minimum elongation % ^(c) | Minimum impact energy | | |
|------------------------------|---------------|---------------------------------|------------------------|------------------|-------------------------------------|------------------------|------------------|---------------|
| Steel name | Steel number | [MPa] | [MPa] | | $Lo=5.65\sqrt{So}$ | KV in J ^(d) | | |
| | | Nominal thickness in mm | | | | | Test temperature | impact energy |
| | | ≤ 16 | < 3 | $\geq 3 \leq 40$ | ≤ 40 | | | |
| S275J0H^(a) | 1.0149 | 275 | 430+580 | 410+580 | 20 ^(b) | 0° | 27 | |

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

| Outside dimensions (D, B and H) ⁽⁴⁾ | Circular hollow sections | Square and rectangular hollow sections |
|--|---|---|
| | | $\pm 1\%$ with a minimum of $\pm 0,5$ mm and a maximum of ± 10 mm |
| Thickness (T) | For D $\leq 406,4$ mm: T ≤ 5 mm $\Rightarrow \pm 10\%$ T > 5 mm $\Rightarrow \pm 0,5\text{mm}$ per D > 406,4 mm $\pm 10\%$ with a max $\pm 2\text{mm}$ | T ≤ 5 mm $\Rightarrow \pm 10\%$ T > 5 mm $\Rightarrow \pm 0,5$ mm |
| Out of 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: $\frac{x1}{B} * 100\%$; $\frac{x1}{H} * 100\%$; etc. |
| Squareness of side (θ) | - | $90^\circ \pm 1^\circ$ |
| External corner profile (C ₁ , C ₂ or R) | - | T ≤ 6 mm $\Rightarrow 1,6T \pm 2,4T$ 6 < T $\leq 10\text{mm}$ $\Rightarrow 2,0T \pm 3,0T$ T > 10mm $\Rightarrow 2,4T \pm 3,6T$ |
| 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) | $\pm 6\%$ on individual delivered lengths | |
| Tolerances on length ⁽³⁾ | Exact lengths | < 6000mm $\Rightarrow 0; + 5$ mm |
| | | $\geq 6000\text{mm}$ e $\leq 10000\text{mm}$ $\Rightarrow 0; + 15$ mm |
| | Approximate length T > 14,2 mm | > 10000mm $\Rightarrow 0; + 5$ mm + 1mm/m |
| | | > 4000mm $\Rightarrow 0; + 50$ mm |
| | | 4,8 mm max. |

1. Where D/T is > 100 the tolerances on out of roundness shall be subject to specific agreement.
 2. The tolerance on convexity and concavity is independent of the tolerance on outside dimensions.
 3. At the time of enquiry and order the manufacturer shall establish the type of required length and the range or lengths.
 4. All dimensions shall be measured at the minimum distance of 100 mm from the ends of the hollow section.