



**DECLARATION OF PERFORMANCE**

**No 0160/016**

**Rev. 02**

|  |   |
|--|---|
| Product Identification Code  | Hot rolled steel product for Structural Use.<br><b>Grade S420NL as for EN10025-3:2005</b>                               |
| Identification   | According to the information stated on the ID label with barcode and/or Bundle number and in the Inspectin certificate. |
| Intended use of the Construction Product   | Flat product for use in metal structures or in metal complexes and concrete structures.                                 |
| Manufacturer (registered office)   | <b>Marcegaglia S.p.A.</b><br>Via Bresciani, 16 – 46040 Gazoldo degli Ippoliti (MN) – Italia                             |
| Production Plant   | <b>San Giorgio di Nogaro</b><br>Via Fermi, n°33 - 33058 San Giorgio Nogaro (UD) - Italia                                |
| System of assessment and verification of the continuity of performance of the construction product | <b>2+</b>   |
| Name and ID number of the notified Body  | RINA Service S.p.A. – Via Corsica, 12 – 16128 Genova - Italia<br><b>0474</b>  |

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 for (EN 10029: 2011)Table 2 | EN 10025-2: 2005         |
| Elongation                               | As for Table 1                 |                          |
| Tensile strength                         |                                |                          |
| Yield strength                           |                                |                          |
| Impact strength                          |                                |                          |
| Chemical analysis                        | As for Table 3                 |                          |
| Durability (with no request for coating) | N.P.D.                         |                          |

The performance of the above mentioned product complies with the set of declared performances.

This responsibility statement is issued in accordance with Regulation (EU) No. 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and behalf of Marcegaglia S.p.A.

**Marco Ing. Ferrone**  
San Giorgio di Nogaro Plant Manager

San Giorgio di Nogaro 29/01/2015

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



**TABLE 1 – MECHANICAL CHARACTERISTICS**

|          | <i>Minimum Yield strenght Reh<sup>a)</sup> Mpa</i> |           |           | <i>Tensile strenght Rm<sup>a)</sup> Mpa</i> |
|----------|--|-----------|-----------|---|
|          | Nominal Thickness (mm)                             |           |           |   |
| grade    | ≤ 16   | > 16 ≤ 40 | > 40 ≤ 50 | ≤ 50  |
| <b>S</b> | 420  | 400       | 390       | da 520 a 680                                |

a) For plate, strip and wide flats with widths. ≥600 mm the direction transverse (t) to the rolling direction applies. For all other products the values apply for the direction parallel (l) to the rolling direction...

**TABLE 1 – MECHANICAL CHARACTERISTICS (follows)**

|          | <i>Mechanical characteristics at room temperature for steel grades with impact strenght values<sup>a</sup></i> |           |           | <i>Impact strenght KV longitudinal for flat products</i> |                    |
|----------|--|-----------|-----------|--|--------------------|
|          | Min. percentage elongation after break %<br>L0=5,65VSO   |           |           | temperature °C   | Minimum energy (J) |
| grade    | spessore nominale mm   |           |           |  |                    |
|          | ≤ 16   | > 16 ≤ 40 | > 40 ≤ 50 | ≤ 50   |                    |
| <b>S</b> | 19   | 19        | 19        | -50  | 27 <sup>1)</sup>   |

a). For plate, strip and wide flats with widths. ≥600 mm the direction transverse (t) to the rolling direction applies. For all other products the values apply for the direction parallel (l) to the rolling direction.

**TABLE 3 – CHEMICAL ANALYSIS**

|         | <i>Chemical composition of the ladle analysis for flat products of steel grades and qualities with values for impact strenght</i> |          |             |         |                       |          |         |                            |          |          |          |          |          |         | <i>Maximum CEV based on the ladle analysis<sup>c)</sup></i> |
|---------|---|----------|-------------|---------|-----------------------|----------|---------|----------------------------|----------|----------|----------|----------|----------|---------|---|
|         | C % max   | Si % max | Mn %        | P % max | S % max <sup>a)</sup> | Nb % max | V % max | Al tot % min <sup>b)</sup> | Ti % max | Cr % max | Ni % max | Mo % max | Cu % max | N % max | Nominal thickness (mm)                                      |
| grade   |   |          |             |         |                       |          |         |                            |          |          |          |          |          |         | ≤ 50  |
| S420N L | 0,20  | 0,60     | 1,00 - 1,70 | 0,025   | 0,020                 | 0,05     | 0,20    | 0,02                       | 0,05     | 0,30     | 0,80     | 0,10     | 0,55     | 0,025   | 0,48  |

a). For railway applications a maximum S content of 0.010% may be agreed at the time of enquiry and order.  
b). If sufficient other N-binding elements are present the minimum total Al content does not apply.



**TABLE 2 – DIMENSIONAL TOLERANCES**

*Tolerance on thickness (mm)*

| Dimensions ( mm)    | class A |      | class B |      | class C |      | class D |      |
|---------------------|---------|------|---------|------|---------|------|---------|------|
|                     | min     | max  | min     | max  | min     | max  | min     | max  |
| Nominal thickness t |         |      |         |      |         |      |         |      |
| $8 \leq t < 15$     | -0,5    | +0,9 | -0,3    | +1,1 | 0       | +1,4 | -0,7    | +0,7 |
| $15 \leq t < 25$    | -0,6    | +1,0 | -0,3    | +1,3 | 0       | +1,6 | -0,8    | +0,8 |
| $25 \leq t < 40$    | -0,7    | +1,3 | -0,3    | +1,7 | 0       | +2   | -1,0    | +1,0 |
| $40 \leq t < 80$    | -0,9    | +1,7 | -0,3    | +2,3 | 0       | +2,6 | -1,3    | +1,3 |
| $80 \leq t < 150$   | -1,1    | +2,1 | -0,3    | +2,9 | 0       | +3,2 | -1,6    | +1,6 |

*Tolerances on width for plates with trimmed edges <sup>a)</sup>*

| Dimensions ( mm)    | Tolerance on width for trimmed edges |       |
|---------------------|--------------------------------------|-------|
| Nominal thickness t | Lower                                | Upper |
| t < 40              | 0                                    | +20   |
| $40 \leq t < 150$   | 0                                    | +25   |

a) Tolerances on width for plates with untrimmed edges shall be the subject of agreement between the manufacturer and purchaser at the time of enquiry and order

*Tolerances on length*

| Dimensions ( mm)          | Tolerances on length |       |
|---------------------------|----------------------|-------|
| Nominal length t          | Lower                | Upper |
| $l < 4000$                | 0                    | +20   |
| $4000 \leq l < 6000$      | 0                    | +30   |
| $6000 \leq l < 8000$      | 0                    | +40   |
| $8000 \leq l < 10000$     | 0                    | +50   |
| $10000 \leq l < 15000$    | 0                    | +75   |
| $15000 \leq l \leq 20000$ | 0                    | +100  |

*Tolerances on flatness*

| Dimensions ( mm)    | Normal tolerances (class N) |      | Special tolerances (class S) |      |
|---------------------|-----------------------------|------|------------------------------|------|
|                     | Measuring length ( mm)      |      | Measuring length ( mm)       |      |
| Nominal thickness t | 1000                        | 2000 | 1000                         | 2000 |
| $8 \leq t < 15$     | 7                           | 11   | 3                            | 6    |
| $15 \leq t < 25$    | 7                           | 10   | 3                            | 6    |
| $25 \leq t < 40$    | 6                           | 9    | 3                            | 6    |
| $40 \leq t < 150$   | 5                           | 8    | 3                            | 6    |

For anything not specified in tables or for exceptions as established in the reference standards