



**Declaration of Performance**  
(according to Regulation EU No 305/2011)

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unique ID code      | Forcon® TT 460MLH [Grade S460MLH / 1.8850]                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Harmonised standard | EN 10219-1:2006 - Cold formed welded structural hollow sections of non-alloy and fine grain steels - Part 1: Technical delivery conditions (issued on the Official Journal of the European Union on 01/02/2007)                                                                                                                                                                                                                                                                         |
| Intended use        | To be used in metal structures or in composite metal and concrete structures. This product is supplied with a specific inspection document 3.1 (according to EN 10204) that includes the full length non-destructive testing of the weld (as defined in table 2 of EN 10219-1). This product is suitable for being used as constituent product of a steel structure according to EN 1090. Table 1 of EN 1090-2:2018 requires a 3.1 inspection document for structural steel above S275. |
| Manufacturer        | TATA STEEL NEDERLAND TUBES BV<br>Registered in Netherlands No. 20022812<br>Registered office: Souvereinstraat 35, Oosterhout, 4903 RH, Netherlands<br>Website: <a href="http://www.tatasteelnederland.com">www.tatasteelnederland.com</a>                                                                                                                                                                                                                                               |
| System of AVCP      | System of assessment and verification of constancy of performance of the product<br>System 2+ (FPC Certificate No: 0343/CPR/RQA2007001/A)                                                                                                                                                                                                                                                                                                                                               |
| Notified body       | Notified body No. 0343<br>LRQA Nederland B.V.<br>George Hintzenweg 77<br>3068 AX Rotterdam<br>Netherlands                                                                                                                                                                                                                                                                                                                                                                               |

| Table 1 – Essential characteristics and declared performances                                                           |                                               |                                                  |                                                 |                                    |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------|-------------------------------------------------|------------------------------------|
| Essential characteristic                                                                                                | Performance                                   |                                                  |                                                 | Harmonised technical specification |
| Yield strength                                                                                                          | Nominal thickness (mm)                        | Values min (MPa)                                 |                                                 | EN 10219-1:2006                    |
|                                                                                                                         | ≤ 16                                          | 460                                              |                                                 |                                    |
| Tensile strength                                                                                                        | Nominal thickness (mm)                        | Values (MPa)                                     |                                                 |                                    |
|                                                                                                                         | ≤ 16                                          | min                                              | max                                             |                                    |
|                                                                                                                         |                                               | 530                                              | 720                                             |                                    |
| Elongation                                                                                                              | Nominal thickness (mm)                        | Values min (%)                                   |                                                 |                                    |
|                                                                                                                         | ≤ 16                                          | long.                                            |                                                 |                                    |
|                                                                                                                         |                                               | 17<br>(15 where Table B.5, Note a applies)       |                                                 |                                    |
| Impact strength (longitudinal)                                                                                          | Grade                                         | Nom. Thk. (mm)                                   | Impact Value min. average (J) at Test Temp (°C) |                                    |
|                                                                                                                         | MLH                                           | ≤ 16                                             | 27J at - 50°C                                   |                                    |
| Weldability (CEV)                                                                                                       | Nominal thickness (mm)                        | Values max (%)                                   |                                                 |                                    |
|                                                                                                                         | ≤ 16                                          | 0.46                                             |                                                 |                                    |
| Durability                                                                                                              | Nominal thickness (mm)                        | Composition (cast) (max. unless otherwise shown) |                                                 |                                    |
|                                                                                                                         | ≤ 16                                          | C                                                | 0.16                                            |                                    |
|                                                                                                                         |                                               | Si                                               | 0.60                                            |                                    |
|                                                                                                                         |                                               | Mn                                               | 1.70                                            |                                    |
|                                                                                                                         |                                               | P                                                | 0.030                                           |                                    |
|                                                                                                                         |                                               | S                                                | 0.025                                           |                                    |
|                                                                                                                         |                                               | Nb                                               | 0.050                                           |                                    |
|                                                                                                                         |                                               | V                                                | 0.12                                            |                                    |
|                                                                                                                         |                                               | Al                                               | 0.020 min.                                      |                                    |
|                                                                                                                         |                                               | Ti                                               | 0.050                                           |                                    |
|                                                                                                                         |                                               | Ni                                               | 0.30                                            |                                    |
|                                                                                                                         | Mo                                            | 0.20                                             |                                                 |                                    |
| N                                                                                                                       | 0.025                                         |                                                  |                                                 |                                    |
| GF deoxidation (a)                                                                                                      |                                               |                                                  |                                                 |                                    |
| Durability is also dependent on any method of protection subsequently applied and the type and thickness of the coating |                                               |                                                  |                                                 |                                    |
| Tolerances on dimensions and shape                                                                                      | Round, square and rectangular hollow sections | In accordance with EN 10219-2:2006               |                                                 |                                    |
| Notes: (a) GF – Fully killed fine grain steel containing nitrogen binding elements                                      |                                               |                                                  |                                                 |                                    |



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TATA STEEL NEDERLAND TUBES BV  
Registered in Netherlands No. 20022812  
Registered office: Souvereinstraat 35, Oosterhout, 4903 RH, Netherlands

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Forcon® TT 460MLH [Grade S460MLH / 1.8850]

EN 10219-1:2006

**To be used in metal structures or in composite metal and concrete structures. This product is supplied with a specific inspection document 3.1 (according to EN 10204) that includes the full length non-destructive testing of the weld (as defined in table 2 of EN 10219-1). This product is suitable for being used as constituent product of a steel structure according to EN 1090. Table 1 of EN 1090-2:2018 requires a 3.1 inspection document for structural steel above S275.**

**Performance declared for the following essential characteristics:**

**Yield strength:** 460 MPa

**Tensile strength:** 530 – 720 MPa

**Elongation:** 17% (15% where Table B.5.a applies)

**Impact strength:** 27J at - 50°C

**Weldability (CEV):** 0.46%

**Durability:** See Declaration of Performance

**Tolerances on dimensions and shape:** In accordance with EN 10219-2:2006

**Dangerous Substances:** No Performance Determined (NPD)

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**Jacob Gerkema**  
Managing Director  
Tata Steel Nederland Tubes B.V.  
Souvereinstraat 35, Oosterhout, 4903 RH  
Netherlands

Date 04/09/2025



**Declaration of Performance**

(according to The Construction Products (Amendment etc.) (EU Exit) Regulations SI 2020-1359)

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unique ID code      | Forcon® TT 460MLH [Grade S460MLH / 1.8850]                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Designated standard | EN 10219-1:2006 - Cold formed welded structural hollow sections of non-alloy and fine grain steels - Part 1: Technical delivery conditions (issued on the Official Journal of the European Union on 01/02/2007)                                                                                                                                                                                                                                                                         |
| Intended use        | To be used in metal structures or in composite metal and concrete structures. This product is supplied with a specific inspection document 3.1 (according to EN 10204) that includes the full length non-destructive testing of the weld (as defined in table 2 of EN 10219-1). This product is suitable for being used as constituent product of a steel structure according to EN 1090. Table 1 of EN 1090-2:2018 requires a 3.1 inspection document for structural steel above S275. |
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| System of AVCP      | System of assessment and verification of constancy of performance of the product System 2+ (FPC<br>Certificate No: 0038/CPR/RQA20070001/A)                                                                                                                                                                                                                                                                                                                                              |
| Approved body       | Approved body No. 0038<br>LRQA Verification Ltd.<br>1 Trinity Park, Bickenhill Lane<br>Solihiull, West Midlands<br>Birmingham<br>B37 7ES<br>United Kingdom                                                                                                                                                                                                                                                                                                                              |

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**Jacob Gerkema**  
Managing Director  
Tata Steel Nederland Tubes B.V.  
Souvereinstraat 35, Oosterhout, 4903 RH  
Netherlands

Date 04/09/2025

Table 1 – Essential characteristics and declared performances

| Essential characteristic                                                           | Performance                                                                                                             |                                    |                                                  | Harmonised technical specification |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------------------------------------|------------------------------------|
| Yield strength                                                                     | Nominal thickness (mm)                                                                                                  |                                    | Values min (MPa)                                 | EN 10219-1:2006                    |
|                                                                                    | ≤ 16                                                                                                                    |                                    | 460                                              |                                    |
| Tensile strength                                                                   | Nominal thickness (mm)                                                                                                  |                                    | Values (MPa)                                     |                                    |
|                                                                                    |                                                                                                                         |                                    | minmax                                           |                                    |
| Elongation                                                                         | Nominal thickness (mm)                                                                                                  |                                    | Values min (%)                                   |                                    |
|                                                                                    | ≤ 16                                                                                                                    |                                    | 530720                                           |                                    |
|                                                                                    |                                                                                                                         |                                    | long.                                            |                                    |
| Impact strength (longitudinal)                                                     | Grade                                                                                                                   |                                    | Impact Value min. average (J) at Test Temp (°C)  |                                    |
|                                                                                    | MLH ≤ 16                                                                                                                |                                    | 27J at - 50°C                                    |                                    |
| Weldability (CEV)                                                                  | Nominal thickness (mm)                                                                                                  |                                    | Values max (%)                                   |                                    |
|                                                                                    | ≤ 16                                                                                                                    |                                    | 0.46                                             |                                    |
| Durability                                                                         | Nominal thickness (mm)                                                                                                  |                                    | Composition (cast) (max. unless otherwise shown) |                                    |
|                                                                                    | ≤ 16                                                                                                                    |                                    | C0.16                                            |                                    |
|                                                                                    |                                                                                                                         |                                    | Si0.60                                           |                                    |
|                                                                                    |                                                                                                                         |                                    | Mn1.70                                           |                                    |
|                                                                                    |                                                                                                                         |                                    | P0.030                                           |                                    |
|                                                                                    |                                                                                                                         |                                    | S0.025                                           |                                    |
|                                                                                    |                                                                                                                         |                                    | Nb0.050                                          |                                    |
|                                                                                    |                                                                                                                         |                                    | V0.12                                            |                                    |
|                                                                                    |                                                                                                                         |                                    | Al0.020 min.                                     |                                    |
|                                                                                    |                                                                                                                         |                                    | Ti0.050                                          |                                    |
|                                                                                    |                                                                                                                         |                                    | Ni0.30                                           |                                    |
|                                                                                    |                                                                                                                         |                                    | Mo0.20                                           |                                    |
|                                                                                    |                                                                                                                         |                                    | N0.025                                           |                                    |
|                                                                                    |                                                                                                                         |                                    | GF deoxidation (a)                               |                                    |
|                                                                                    | Durability is also dependent on any method of protection subsequently applied and the type and thickness of the coating |                                    |                                                  |                                    |
| Tolerances on dimensions and shape                                                 | Round, square and rectangular hollow sections                                                                           | In accordance with EN 10219-2:2006 |                                                  |                                    |
| Notes: (a) GF – Fully killed fine grain steel containing nitrogen binding elements |                                                                                                                         |                                    |                                                  |                                    |

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