

**A01** Tata Steel IJmuiden BV  
 Henckebachstraat 1  
 1951 JZ Velsen Noord  
 Postbus 10000  
 1970 CA IJmuiden the Netherlands  
 Telephone: 0251-492110  
 E-mail : info-testing@tatasteel.com

**A02** Inspection certificate 3.1, EN10204.  
 000640

**A03** Reference  
 4500002787  
 11001473

**A04** Dec. nr  
 2018008211 00

**A05** Customer/Consignee  
 NAANTALI STEEL SERVICE CENTRE OY  
 RAUTAKATU 5  
 21110 NAANTALI  
 FINLAND

**A06** Order nr.  
 51068 D

**A07** Dispatch note  
 80712

**A08** A10 Transport  
 DROEDENBANK

**A09** Tolerances  
 Hot rolled pickled, Coil, S355MC, YMPRESS WG S:01-2010.  
 1.00 G/M2/Side oiled.  
 Mill edges.  
 Tolerance EN 10051 : 2010 (E) (Width tolerance +20/-0 mm) Dev.Tol. (Thickness tolerance +0.14/-0.14 mm).

**A10** TATA STEEL

**A11** Dimensions  
 1500 mm X 4.00 mm

| PROD. IDENT | NR | MASS kg | CAST NR. | Temp °C | R <sub>H</sub> MPa | R <sub>eH</sub> MPa | R <sub>p</sub> MPa | R <sub>m</sub> MPa | A %  | A % | R <sub>H</sub> /R <sub>m</sub> % | r <sub>m</sub> value | r <sub>m</sub> value | n <sub>10</sub> value | C52 | C53 | C54 | C55 | C56 | C57 | C58 | C59 | C60 | C61 | C62 | C63 | C64 | C65 | C66 | C67 | C68 | C69 | C70 |  |  |
|-------------|----|---------|----------|---------|--------------------|---------------------|--------------------|--------------------|------|-----|----------------------------------|----------------------|----------------------|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| 756930      | 1  | 10440   | K0332    | + 20    | 394                |                     |                    | 475                | 31.0 |     | 83                               |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 756931      | 1  | 10420   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 756932      | 1  | 10290   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 756873      | 1  | 10460   | K0725    | + 20    | 385                |                     |                    | 477                | 31.0 |     | 81                               |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 756875      | 1  | 10390   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 756876      | 1  | 10160   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 757245      | 1  | 10490   | K0751    | + 20    | 390                |                     |                    | 475                | 31.5 |     | 82                               |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 757246      | 1  | 10420   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 757247      | 1  | 10350   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 757251      | 1  | 10550   | K0754    | + 20    | 393                |                     |                    | 474                | 32.0 |     | 83                               |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| SUBTOTAL    |    | 103970  | 10       |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |

**A12** TENSILE TEST

**A13** IMPACT TEST AND OTHER TESTS

**A14** HARDNESS

**A15** CHEMICAL COMPOSITION in %

| PROD. IDENT | NR | MASS kg | CAST NR. | Temp °C | R <sub>H</sub> MPa | R <sub>eH</sub> MPa | R <sub>p</sub> MPa | R <sub>m</sub> MPa | A %  | A % | R <sub>H</sub> /R <sub>m</sub> % | r <sub>m</sub> value | r <sub>m</sub> value | n <sub>10</sub> value | C52 | C53 | C54 | C55 | C56 | C57 | C58 | C59 | C60 | C61 | C62 | C63 | C64 | C65 | C66 | C67 | C68 | C69 | C70 |  |  |  |
|-------------|----|---------|----------|---------|--------------------|---------------------|--------------------|--------------------|------|-----|----------------------------------|----------------------|----------------------|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| 756930      | 1  | 10440   | K0332    | + 20    | 394                |                     |                    | 475                | 31.0 |     | 83                               |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| 756931      | 1  | 10420   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| 756932      | 1  | 10290   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| 756873      | 1  | 10460   | K0725    | + 20    | 385                |                     |                    | 477                | 31.0 |     | 81                               |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| 756875      | 1  | 10390   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| 756876      | 1  | 10160   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| 757245      | 1  | 10490   | K0751    | + 20    | 390                |                     |                    | 475                | 31.5 |     | 82                               |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| 757246      | 1  | 10420   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| 757247      | 1  | 10350   | "        |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| 757251      | 1  | 10550   | K0754    | + 20    | 393                |                     |                    | 474                | 32.0 |     | 83                               |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
| SUBTOTAL    |    | 103970  | 10       |         |                    |                     |                    |                    |      |     |                                  |                      |                      |                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |

**A16** 1: J/cm<sup>2</sup>  
 2: Later. exp. (mm)  
 3: Contraction (%)  
 4: Shear area (%)

**A17** C01: 1:1-Top 2:1-Edge 3:Surface 4:Middle 5:Bottom  
 C02: Length/width 2:Surface 3:Surface 4:Surface 5:Surface  
 C03: Transverse 2:Surface 3:Surface 4:Surface 5:Surface  
 C04: Mean 2:Surface 3:Surface 4:Surface 5:Surface  
 C05: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
 C06: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
 C07: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
 C08: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
 C09: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
 C10: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
 C11: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
 C12: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
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 C14: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
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 C16: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
 C17: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
 C18: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
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 C68: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
 C69: Ind. 2:Surface 3:Surface 4:Surface 5:Surface  
 C70: Ind. 2:Surface 3:Surface 4:Surface 5:Surface

**A18** STEELMAKING PROCESS: B0 Page 1 of 2

**A19** Stamp of the expert :  
 Tata Steel IJmuiden BV  
 SIMON BRAAM  
 MANAGER TESTING  
 IJMUIDEN, 23 JANUARI 2018

**A20** We hereby confirm that we comply to the terms of our order  
 acknowledgement and any agreed concessions

**A01** Tata Steel IJmuiden BV  
 Henkebachstraat 1  
 1951 JZ Velsen Noord  
 Postbus 10000  
 1970 CA IJmuiden The Netherlands  
 Telephone: 0201-492110  
 Company Trade Register 34040551  
 E-mail : info.testing@tatasteel.com

Inspection certificate 3.1, EN10204.

**A02** 2018008211 08  
 Order nr. 51068 D

TATA STEEL

| TENSILE TEST |               | HARDNESS          |         |                     |                    |                    |      |     |                                 |                      |                      | IMPACT TEST AND OTHER TESTS |               |         |           |           |           |      |            |     |     |     |     |     |
|--------------|---------------|-------------------|---------|---------------------|--------------------|--------------------|------|-----|---------------------------------|----------------------|----------------------|-----------------------------|---------------|---------|-----------|-----------|-----------|------|------------|-----|-----|-----|-----|-----|
|              |               | C10-029           | C16     | C17                 | C18                | C19                | C20  | C21 | C22                             | C23                  | C24                  | C25                         | C26           | C27     | C28       | C29       | C30       | C31  | C32        | C33 | C34 | C35 | C36 | C37 |
| PROD. IDENT  | MASS kg       | 1500 mm X 4.00 mm | Temp °C | R <sub>eH</sub> MPa | R <sub>p</sub> MPa | R <sub>m</sub> MPa | A %  | A % | R <sub>eH</sub> /R <sub>m</sub> | r <sup>-</sup> value | n <sup>-</sup> value | C52                         | C40, C60, C65 | Temp °C | ind. ind. | ind. ind. | ind. ind. | mean | ASTM E-112 |     |     |     |     |     |
| 757252       | 10520         | 1                 | + 20    | 393                 |                    | 474                | 32.0 |     | 83                              |                      |                      |                             |               |         |           |           |           |      |            |     |     |     |     |     |
| 757253       | 10320         | 1                 | + 20    | 391                 |                    | 474                | 33.0 |     | 82                              |                      |                      |                             |               |         |           |           |           |      |            |     |     |     |     |     |
| 757248       | 10558         | 1                 |         |                     |                    |                    |      |     |                                 |                      |                      |                             |               |         |           |           |           |      |            |     |     |     |     |     |
| 757249       | 10550         | 1                 |         |                     |                    |                    |      |     |                                 |                      |                      |                             |               |         |           |           |           |      |            |     |     |     |     |     |
| 757250       | 10150         | 1                 |         |                     |                    |                    |      |     |                                 |                      |                      |                             |               |         |           |           |           |      |            |     |     |     |     |     |
| <b>TOTAL</b> | <b>156068</b> | <b>15</b>         |         |                     |                    |                    |      |     |                                 |                      |                      |                             |               |         |           |           |           |      |            |     |     |     |     |     |

| CHEMICAL COMPOSITION in %   |      |       |      |      |       |       |      |       |       |      |      |      |       |       |      |       |      |      |       |
|---|------|-------|------|------|-------|-------|------|-------|-------|------|------|------|-------|-------|------|-------|------|------|-------|
| PROD. IDENT   | C    | Mn    | P    | S    | Si    | Al    | Cu   | Cr    | Ni    | Mo   | Nb   | V    | N     | B     | C-eq | Al-ZO | Sn   | Ti   | C-eq1 |
| K0754   | .069 | 0.495 | .013 | .007 | 0.006 | 0.028 | .012 | 0.018 | 0.014 | .001 | .026 | .002 | .0023 | .0001 |      | 0.027 | .002 | .001 | .15   |
| 1: J/cm <sup>2</sup> 4: Contraction (%)<br>2: J/cm <sup>2</sup> 5: Shear area (%)<br>3: Later. exp. (mm)                    |      |       |      |      |       |       |      |       |       |      |      |      |       |       |      |       |      |      |       |
| C01 1-1=TOP      C02 1=Longitudinal<br>2=Middle      2=Surface      2=Centre<br>3=Bottom      3=Surface      3=Diagonal dir |      |       |      |      |       |       |      |       |       |      |      |      |       |       |      |       |      |      |       |
| C-eq1: C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15  |      |       |      |      |       |       |      |       |       |      |      |      |       |       |      |       |      |      |       |
| <b>A03</b> STEELMAKING PROCESS: B0      Page 2 of 2   |      |       |      |      |       |       |      |       |       |      |      |      |       |       |      |       |      |      |       |
| <b>A04</b> Stamp of the expert :  |      |       |      |      |       |       |      |       |       |      |      |      |       |       |      |       |      |      |       |
| Tata Steel IJmuiden BV<br>SIMON BRAAM<br>MANAGER TESTING  |      |       |      |      |       |       |      |       |       |      |      |      |       |       |      |       |      |      |       |
| IJMUIDEN, 23 JANUARI 2018   |      |       |      |      |       |       |      |       |       |      |      |      |       |       |      |       |      |      |       |

Z01 We hereby confirm that we comply to the terms of our order  
 acknowledgement and any agreed concessions

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