

Our order No.: (A08) 1359481 Your order No.: (A07) 1115055 Order registration date: 21.05.2021 Date of dispatch: 25.06.2021 B

Material requirements and customer information

| | | |
|--|---|---|
| Product: <small>(A03)</small> Plate | Steel standard and grade: <small>(B02)</small> EN10025-2:2019 S355K2 | Surface tolerance: EN 10163-2 B3 |
| Delivery condition: <small>(B04)</small> Furnace normalized (N) | | Length tolerance: EN 10029 Table 3 |
| Customer name and address <small>(A06)</small> | Certificate address | Width tolerance: EN 10029 Table 2 |
| 4002 | 4002001 | Thickness tolerance: EN 10029 Class B |
| FEON OY | FEON OY | Flatness tolerance: EN 10029 Table 4 Class N |
| Teollisuuskatu 33 | Finland | |
| 00510 Helsinki | | |
| Finland | | |
| | purchase@feon.fi;a.faktarauskas@eu.nlmk.com | |

Supplementary information: (C04)

Fully Killed and Fine Grain
 Plates <= 25mm are Normalised at 900°C for 3 minutes.
 Plates > 25mm are Normalised at 900°C for 5 minutes.

Visual examination and dimensional checking: Satisfactory. The results of tests performed are in compliance with the requirements. (Z01)

Details of supplied materials dimensions, weights and pieces

| Heat/Slab <small>(B07)</small> | Plate No. <small>(B06)</small> | Item | Thickness mm <small>(B09)</small> | Width mm <small>(B10)</small> | Length mm <small>(B11)</small> | Pieces <small>(B08)</small> | Gross kg <small>(B12)</small> | Hard stamp | Stamp location | Customer remark <small>(B99)</small> |
|-----------------------------------|-----------------------------------|------|--------------------------------------|----------------------------------|-----------------------------------|--------------------------------|----------------------------------|------------|-------------------|---|
| 59442B3 | 7279E | 16 | 30.0 | 2000 | 6000 | 3 | 8 478 | S355K2+N | Head | 1115055 |
| 59441B1 | 7285E | 16 | 30.0 | 2000 | 6000 | 3 | 8 478 | S355K2+N | Head | 1115055 |
| 59450C2 | 7316E | 16 | 30.0 | 2000 | 6000 | 3 | 8 478 | S355K2+N | Head | 1115055 |
| 59450C1 | 7337E | 16 | 30.0 | 2000 | 6000 | 3 | 8 478 | S355K2+N | Head | 1115055 |
| 59450E3 | 7379E | 16 | 30.0 | 2000 | 6000 | 3 | 8 478 | S355K2+N | Head | 1115055 |
| 59450E2 | 7380E | 16 | 30.0 | 2000 | 6000 | 3 | 8 478 | S355K2+N | Head | 1115055 |
| 59450E1 | 7381E | 16 | 30.0 | 2000 | 6000 | 3 | 8 478 | S355K2+N | Head | 1115055 |
| 59449E4 | 7382E | 16 | 30.0 | 2000 | 6000 | 3 | 8 478 | S355K2+N | Head | 1115055 |
| 59390A1 | 6760E | 17 | 35.0 | 2000 | 6000 | 2 | 6 594 | S355K2+N | Head | 1115055 |

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| Heat/Slab <small>(B07)</small> | Plate No. <small>(B06)</small> | Item | Thickness mm <small>(B09)</small> | Width mm <small>(B10)</small> | Length mm <small>(B11)</small> | Pieces <small>(B08)</small> | Gross kg <small>(B12)</small> | Hard stamp | Stamp location | Customer remark <small>(B99)</small> |
|-----------------------------------|-----------------------------------|------|--------------------------------------|----------------------------------|-----------------------------------|--------------------------------|----------------------------------|------------|-------------------|---|
| 59335A2 | 6924E | 17 | 35.0 | 2000 | 6000 | 2 | 6 594 | S355K2+N | Head | 1115055 |
| 59335B4 | 6927E | 17 | 35.0 | 2000 | 6000 | 1 | 3 297 | S355K2+N | Head | 1115055 |
| 59334C4 | 7022E | 17 | 35.0 | 2000 | 6000 | 1 | 3 297 | S355K2+N | Head | 1115055 |
| 59390J4 | 6902E | 18 | 40.0 | 2500 | 8000 | 1 | 6 280 | S355K2+N | Head | 1115055 |
| 59442D3 | 7427E | 18 | 40.0 | 2500 | 8000 | 1 | 6 280 | S355K2+N | Head | 1115055 |
| 59442D2 | 7428E | 18 | 40.0 | 2500 | 8000 | 1 | 6 280 | S355K2+N | Head | 1115055 |
| | | | | | | 33 | 106 446 | | | |

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Chemical composition (heat analysis) all results in %

| Heat No. <small>(B07)</small> | C | Mn | Si | P | S | Cr | Cu | Ni | Mo | Al | Nb | V | Ti | N | B |
|-------------------------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------------|
| Set values: | min. | | 0.15 | | | | | | | 0.020 | | | | | |
| | max. | 0.20 | 1.60 | 0.25 | 0.025 | 0.025 | 0.290 | 0.400 | 0.300 | 0.080 | 0.100 | 0.060 | 0.100 | 0.050 | 0.0120 0.0008 |
| 59334 | 0.17 | 1.49 | 0.20 | 0.011 | 0.014 | 0.031 | 0.045 | 0.024 | 0.005 | 0.042 | 0.042 | 0.002 | 0.002 | 0.0039 | 0.0002 |
| 59335 | 0.17 | 1.45 | 0.20 | 0.016 | 0.004 | 0.044 | 0.044 | 0.034 | 0.006 | 0.035 | 0.041 | 0.002 | 0.002 | 0.0033 | 0.0002 |
| 59390 | 0.18 | 1.54 | 0.20 | 0.016 | 0.007 | 0.043 | 0.042 | 0.027 | 0.001 | 0.044 | 0.042 | 0.001 | 0.001 | 0.0039 | 0.0002 |
| 59441 | 0.17 | 1.49 | 0.23 | 0.025 | 0.007 | 0.038 | 0.040 | 0.019 | 0.006 | 0.039 | 0.045 | 0.001 | 0.001 | 0.0038 | 0.0004 |
| 59442 | 0.17 | 1.51 | 0.21 | 0.016 | 0.005 | 0.036 | 0.048 | 0.024 | 0.007 | 0.038 | 0.042 | 0.001 | 0.001 | 0.0036 | 0.0003 |
| 59449 | 0.17 | 1.48 | 0.22 | 0.014 | 0.006 | 0.027 | 0.032 | 0.018 | 0.006 | 0.036 | 0.043 | 0.001 | 0.001 | 0.0040 | 0.0004 |
| 59450 | 0.17 | 1.48 | 0.21 | 0.016 | 0.009 | 0.046 | 0.044 | 0.024 | 0.006 | 0.034 | 0.038 | 0.001 | 0.001 | 0.0038 | 0.0003 |

Heat No. (B07) CEV Remark (C70)

| | | |
|-------------|------|---------|
| Set values: | min. | |
| | max. | 0.45 |
| 59334 | 0.43 | 1 3 4 6 |
| 59335 | 0.43 | 1 3 4 6 |
| 59390 | 0.45 | 1 3 4 6 |
| 59441 | 0.43 | 1 3 4 6 |
| 59442 | 0.44 | 1 3 4 6 |
| 59449 | 0.43 | 1 3 4 6 |
| 59450 | 0.43 | 1 3 4 6 |

Supplementary information (C99)

 $CEV = C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15$

1 = Basic Oxygen Steel, 2 = Electric Arc Furnace, 3 = Ladle Refined, 4 = Calcium Treated, 5 = Vacuum Degassed, 6 = Continuous Cast, 7 = Ingot

Our order No.: (A08) 1359481 Your order No.: (A07) 1115055 Order registration date: 21.05.2021 Date of dispatch: 25.06.2021 B

Tensile testing

Tensile tests were performed in accordance with EN 10002/ISO 6892-1 with results as stated below:

| Heat/slab <small>(B07)</small> | Plate ID <small>(B06)</small> | Thickness mm | Shape <small>(C10)</small> | Loc. <small>(C01)</small> | Dir. <small>(C02)</small> | Yield MPa <small>(C11)</small> | Yield type | UTS Rm MPa <small>(C12)</small> | Elong. type | Elongation % <small>(C13)</small> | Yield/UTS |
|-----------------------------------|----------------------------------|-----------------|-------------------------------|------------------------------|------------------------------|-----------------------------------|---------------|------------------------------------|----------------|--------------------------------------|-----------|
| 59390A1 | 6760E-1-1 | 35.0 | R | H | T | 372 | R02 | 535 | A5 | 28 | 0.70 |
| 59390A1 | 6760E-1-2 | 35.0 | R | H | T | 372 | R02 | 535 | A5 | 28 | 0.70 |
| 59390J4 | 6902E-1-1 | 40.0 | R | H | T | 376 | REH | 537 | A5 | 29 | 0.70 |
| 59335A2 | 6924E-1-1 | 35.0 | R | H | T | 371 | REH | 524 | A5 | 29 | 0.71 |
| 59335A2 | 6924E-1-2 | 35.0 | R | H | T | 371 | REH | 524 | A5 | 29 | 0.71 |
| 59335B4 | 6927E-1-2 | 35.0 | R | H | T | 371 | REH | 524 | A5 | 29 | 0.71 |
| 59334C4 | 7022E-1-2 | 35.0 | R | H | T | 352 | R02 | 516 | A5 | 28 | 0.68 |
| 59442B3 | 7279E-1-1 | 30.0 | R | H | T | 376 | R02 | 529 | A5 | 31 | 0.71 |
| 59442B3 | 7279E-1-2 | 30.0 | R | H | T | 376 | R02 | 529 | A5 | 31 | 0.71 |
| 59442B3 | 7279E-2-1 | 30.0 | R | H | T | 376 | R02 | 529 | A5 | 31 | 0.71 |
| 59441B1 | 7285E-1-1 | 30.0 | R | H | T | 372 | REH | 532 | A5 | 29 | 0.70 |
| 59441B1 | 7285E-1-2 | 30.0 | R | H | T | 372 | REH | 532 | A5 | 29 | 0.70 |
| 59441B1 | 7285E-2-1 | 30.0 | R | H | T | 372 | REH | 532 | A5 | 29 | 0.70 |
| 59450C2 | 7316E-1-1 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |
| 59450C2 | 7316E-1-2 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |
| 59450C2 | 7316E-2-1 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |
| 59450C1 | 7337E-1-1 | 30.0 | R | H | T | 367 | REH | 530 | A5 | 28 | 0.69 |
| 59450C1 | 7337E-1-2 | 30.0 | R | H | T | 367 | REH | 530 | A5 | 28 | 0.69 |
| 59450C1 | 7337E-2-1 | 30.0 | R | H | T | 367 | REH | 530 | A5 | 28 | 0.69 |
| 59450E3 | 7379E-1-1 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |
| 59450E3 | 7379E-1-2 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |
| 59450E3 | 7379E-2-1 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |
| 59450E2 | 7380E-1-1 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |
| 59450E2 | 7380E-1-2 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |
| 59450E2 | 7380E-2-1 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |

Our order No.: (A08) 1359481

 Your order No.: (A07) 1115055

Order registration date: 21.05.2021

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Tensile tests were performed in accordance with EN 10002/ISO 6892-1 with results as stated below:

| Heat/slab <small>(B07)</small> | Plate ID <small>(B06)</small> | Thickness mm | Shape <small>(C10)</small> | Loc. <small>(C01)</small> | Dir. <small>(C02)</small> | Yield MPa <small>(C11)</small> | Yield type | UTS Rm MPa <small>(C12)</small> | Elong. type | Elongation % <small>(C13)</small> | Yield/UTS |
|-----------------------------------|----------------------------------|-----------------|-------------------------------|------------------------------|------------------------------|-----------------------------------|---------------|------------------------------------|----------------|--------------------------------------|-----------|
| 59450E1 | 7381E-1-1 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |
| 59450E1 | 7381E-1-2 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |
| 59450E1 | 7381E-2-1 | 30.0 | R | H | T | 366 | REH | 530 | A5 | 29 | 0.69 |
| 59449E4 | 7382E-1-1 | 30.0 | R | H | T | 372 | REH | 534 | A5 | 28 | 0.70 |
| 59449E4 | 7382E-1-2 | 30.0 | R | H | T | 372 | REH | 534 | A5 | 28 | 0.70 |
| 59449E4 | 7382E-2-1 | 30.0 | R | H | T | 372 | REH | 534 | A5 | 28 | 0.70 |
| 59442D3 | 7427E-1-1 | 40.0 | R | H | T | 376 | R02 | 529 | A5 | 31 | 0.71 |
| 59442D2 | 7428E-1-1 | 40.0 | R | H | T | 376 | R02 | 529 | A5 | 31 | 0.71 |

Supplementary Information (C99)

 Loc.: (C01) H = head, T = tail

 Dir.: (C02) T = transversal, L = longitudinal

 Shape: (C10) Ø = round, R = rectangular

Original gauge length: 200 mm

Our order No.: (A08) 1359481 Your order No.: (A07) 1115055 Order registration date: 21.05.2021 Date of dispatch: 25.06.2021 B

Impact testing Impact tests were performed in accordance with EN 10045/ISO 148-1 with results as stated below:

| Heat/slab <small>(B07)</small> | Plate ID <small>(B06)</small> | Position <small>(C01)</small> | Notch <small>(C40)</small> | Shape <small>(C41)</small> | Loc. <small>(C01)</small> | Dir. <small>(C02)</small> | Temp. °C <small>(C03)</small> | SV J <small>(C42)</small> | SV J <small>(C42)</small> | SV J <small>(C42)</small> | AV J <small>(C43)</small> |
|-----------------------------------|----------------------------------|----------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|----------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 59390A1 | 6760E-1-1 | 1 | CV | 10x10 | H | L | -20 | 203 | 200 | 202 | 202 |
| 59390A1 | 6760E-1-2 | 1 | CV | 10x10 | H | L | -20 | 203 | 200 | 202 | 202 |
| 59390J4 | 6902E-1-1 | 1 | CV | 10x10 | H | L | -20 | 161 | 202 | 197 | 187 |
| 59335A2 | 6924E-1-1 | 1 | CV | 10x10 | H | L | -20 | 151 | 150 | 110 | 137 |
| 59335A2 | 6924E-1-2 | 1 | CV | 10x10 | H | L | -20 | 151 | 150 | 110 | 137 |
| 59335B4 | 6927E-1-2 | 1 | CV | 10x10 | H | L | -20 | 151 | 150 | 110 | 137 |
| 59334C4 | 7022E-1-2 | 1 | CV | 10x10 | H | L | -20 | 108 | 110 | 111 | 110 |
| 59442B3 | 7279E-1-1 | 1 | CV | 10x10 | H | L | -20 | 225 | 225 | 132 | 194 |
| 59442B3 | 7279E-1-2 | 1 | CV | 10x10 | H | L | -20 | 225 | 225 | 132 | 194 |
| 59442B3 | 7279E-2-1 | 1 | CV | 10x10 | H | L | -20 | 225 | 225 | 132 | 194 |
| 59441B1 | 7285E-1-1 | 1 | CV | 10x10 | H | L | -20 | 132 | 125 | 153 | 137 |
| 59441B1 | 7285E-1-2 | 1 | CV | 10x10 | H | L | -20 | 132 | 125 | 153 | 137 |
| 59441B1 | 7285E-2-1 | 1 | CV | 10x10 | H | L | -20 | 132 | 125 | 153 | 137 |
| 59450C2 | 7316E-1-1 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |
| 59450C2 | 7316E-1-2 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |
| 59450C2 | 7316E-2-1 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |
| 59450C1 | 7337E-1-1 | 1 | CV | 10x10 | H | L | -20 | 137 | 132 | 367 | 212 |
| 59450C1 | 7337E-1-2 | 1 | CV | 10x10 | H | L | -20 | 137 | 132 | 367 | 212 |
| 59450C1 | 7337E-2-1 | 1 | CV | 10x10 | H | L | -20 | 137 | 132 | 367 | 212 |
| 59450E3 | 7379E-1-1 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |
| 59450E3 | 7379E-1-2 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |
| 59450E3 | 7379E-2-1 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |
| 59450E2 | 7380E-1-1 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |
| 59450E2 | 7380E-1-2 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |
| 59450E2 | 7380E-2-1 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |

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Impact testing Impact tests were performed in accordance with EN 10045/ISO 148-1 with results as stated below:

| Heat/slab <small>(B07)</small> | Plate ID <small>(B06)</small> | Position <small>(C01)</small> | Notch <small>(C40)</small> | Shape <small>(C41)</small> | Loc. <small>(C01)</small> | Dir. <small>(C02)</small> | Temp. °C <small>(C03)</small> | SV J <small>(C42)</small> | SV J <small>(C42)</small> | SV J <small>(C42)</small> | AV J <small>(C43)</small> |
|-----------------------------------|----------------------------------|----------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|----------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 59450E1 | 7381E-1-1 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |
| 59450E1 | 7381E-1-2 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |
| 59450E1 | 7381E-2-1 | 1 | CV | 10x10 | H | L | -20 | 137 | 144 | 101 | 127 |
| 59449E4 | 7382E-1-1 | 1 | CV | 10x10 | H | L | -20 | 161 | 169 | 139 | 156 |
| 59449E4 | 7382E-1-2 | 1 | CV | 10x10 | H | L | -20 | 161 | 169 | 139 | 156 |
| 59449E4 | 7382E-2-1 | 1 | CV | 10x10 | H | L | -20 | 161 | 169 | 139 | 156 |
| 59442D3 | 7427E-1-1 | 1 | CV | 10x10 | H | L | -20 | 225 | 225 | 132 | 194 |
| 59442D2 | 7428E-1-1 | 1 | CV | 10x10 | H | L | -20 | 225 | 225 | 132 | 194 |

Supplementary Information (C99)

Position: (C01) 1 = surface, 2 = middle, 3 = 1/3 of thickness, 4 = 1/4 of thickness

Notch: (C40) CU = Charpy U-notch, CV = Charpy V-notch, CVA = Charpy V-notch (ASTM)

Loc.: (C01) H = head, T = tail

Dir.: (C02) T = transversal, L = longitudinal

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We hereby certify that the material has been made and tested in accordance with the mentioned specification(s).
Certified according to Construction Products Regulations (305/2011/EU) by TÜV NORD Systems GmbH (Notified Body Reg. No. 0045).
For Declaration of Performance please see www.DanSteel.dk and DoP number 010CPR2013-07-01.



TÜV-NORD 0045-CPR-0554
Year of initial inspection: 2005
Intended use: Welded, bolted and riveted structures.

Our products are Cobalt, Gold, Mercury free and are free of radioactive substances and do not exceed the clearing limit value of 100 Bg/kg, which guarantees the compliance with limit values given in the Radiation Protection Ordinance (StrlSchV) for the unrestricted clearance of solid material (StrlSchV Annex III, Section 5) for ferrous nuclides.
Manufactured in Denmark

Information description

acc. to EN 10168

A Commercial transactions and parties involved

- A01 Manufacturer's works
- A02 Type of inspection document
- A03 Document number
- A04 Manufacturer's mark
- A05 Originator of the inspection document
- A06 Customer consignee
- A07 Purchaser's order number and, where applicable, item number
- A08 Manufacturer's works order number
- A09 Customer article number
- A10 to A99 Supplementary information

B Description of Products

- B01 Product
- B02 Steel designation
- B03 Any supplementary requirements
- B04 Product delivery condition
- B05 Reference (heat) treatment of samples
- B06 Marking of the product
- B07 Identification of the product
- B08 Number of pieces
- B09 to B11 Product dimensions
- B12 Theoretical mass
- B13 Actual mass
- B14 to B99 Supplementary information

C Inspection

- C00 Identification of the sample
- C01 Location of the sample
- C02 Direction of the test pieces
- C03 Test temperature
- C04 to C09 Supplementary information

- C10 Shape of the test piece
- C11 Yield or proof strength
- C12 Tensile strength
- C13 Elongation after fracture
- C14 to C29 Supplementary information
- C30 Method of test
- C31 Individual values
- C32 Mean value
- C33 to C39 Supplementary information
- C40 Type of test piece
- C41 Width of test piece
- C42 Individual values
- C43 Mean value
- C44 to C49 Supplementary information
- C50 to C69 Supplementary information
- C70 Steelmaking process
- C71 to C92 Chemical composition
- C93 to C99 Supplementary information

D Other tests

- D01 Marking and identification, surface appearance, shape and dimensional properties
- D02 to D50 Non-destructive tests
- D51 to D99 Supplementary information

Z Validation

- Z01 Statement of compliance
- Z02 Date of issue and validation
- Z03 Stamp of the inspection representative
- Z04 CE marking
- Z05 to Z99 Supplementary information