

Our order No.: (A08) 2103561      Your order No.: (A07) 45539      Order registration date: 22.12.2022      Date of dispatch: 17.03.2023 B

## Material requirements and customer information

<b>Product:</b> <small>(A03)</small> Plate	<b>Steel standard and grade:</b> <small>(B02)</small> EN10025-2:2019 S355K2+N	<b>Surface tolerance:</b> EN 10163-2 B3
<b>Delivery condition:</b> <small>(B04)</small> Furnace normalized (N)		<b>Length tolerance:</b> EN 10029 Table 3
<b>Customer name and address</b> <small>(A06)</small>	<b>Certificate address</b>	<b>Width tolerance:</b> EN 10029 Table 2
4002	4002001	<b>Thickness tolerance:</b> EN 10029 Class B
FEON OY	FEON OY	<b>Flatness tolerance:</b> EN 10029 Table 4 Class N
Teollisuuskatu 33	Finland	
00510 Helsinki		
Finland	certificates@feon.fi;janne.myllynen@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>
63410J3	5243E	1	12.0	2000	6000	2	2 260	S355K2+N	Head	45539
63410I3	5282E	1	12.0	2000	6000	2	2 260	S355K2+N	Head	45539
63413G4	5534E	1	12.0	2000	6000	2	2 260	S355K2+N	Head	45539
63413B5	6303E	1	12.0	2000	6000	4	4 520	S355K2+N	Head	45539
63413B4	6305E	1	12.0	2000	6000	3	3 390	S355K2+N	Head	45539
63410E1	6414E	1	12.0	2000	6000	4	4 520	S355K2+N	Head	45539
63388F4	4236E	4	20.0	2000	6000	3	5 652	S355K2+N	Head	45539
63413B3	6307E	6	25.0	2000	6000	3	7 065	S355K2+N	Head	45539
63413B2	6309E	7	30.0	2000	6000	3	8 478	S355K2+N	Head	45539

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## 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>
63416D3	6418E	7	30.0	2000	6000	3	8 478	S355K2+N	Head	45539
63225E3	4775E	8	35.0	2000	6000	1	3 297	S355K2+N	Head	45539
63416I2	5218E	8	35.0	2000	6000	3	9 891	S355K2+N	Head	45539
63416I1	5220E	8	35.0	2000	6000	3	9 891	S355K2+N	Head	45539
63413C2	5470E	8	35.0	2000	6000	3	9 891	S355K2+N	Head	45539
63416G4	5936E	8	35.0	2000	6000	2	6 594	S355K2+N	Head	45539
63410F1	5340E	9	40.0	2000	6000	2	7 536	S355K2+N	Head	45539
63413D5	6427E	9	40.0	2000	6000	2	7 536	S355K2+N	Head	45539
63388B4	3805E	22	12.0	2500	6000	3	4 239	S355K2+N	Head	45539
63410E2	6412E	22	12.0	2500	6000	4	5 652	S355K2+N	Head	45539
						52	113 410			

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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	0.400	0.080	0.100	0.060	0.100	0.050	0.0120 0.0008
63225	0.17	1.45	0.20	0.009	0.006	0.020	0.029	0.016	0.001	0.040	0.041	0.002	0.002	0.0057	0.0002
63388	0.15	1.48	0.19	0.016	0.002	0.017	0.017	0.009	0.001	0.035	0.043	0.002	0.002	0.0046	0.0002
63410	0.17	1.47	0.21	0.014	0.005	0.033	0.026	0.015	0.002	0.045	0.042	0.002	0.002	0.0036	0.0003
63413	0.17	1.54	0.19	0.010	0.003	0.021	0.013	0.007	0.001	0.044	0.044	0.002	0.002	0.0046	0.0002
63416	0.17	1.49	0.20	0.008	0.006	0.029	0.041	0.019	0.002	0.037	0.043	0.001	0.002	0.0042	0.0003

Heat No. <small>(B07)</small>	CEV	Remark <small>(C70)</small>
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Set values:	min.	
	max.	0.45
63225	0.42	1 3 4 6
63388	0.40	1 3 4 6
63410	0.42	1 3 4 6
63413	0.44	1 3 4 6
63416	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

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## 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
63388B4	3805E-1-1	12.0	R	H	T	368	REH	497	A5	34	0.74
63388B4	3805E-1-2	12.0	R	H	T	368	REH	497	A5	34	0.74
63388B4	3805E-1-3	12.0	R	H	T	368	REH	497	A5	34	0.74
63388F4	4236E-1-1	20.0	R	H	T	363	REH	507	A5	34	0.72
63388F4	4236E-1-2	20.0	R	H	T	363	REH	507	A5	34	0.72
63388F4	4236E-1-3	20.0	R	H	T	363	REH	507	A5	34	0.72
63225E3	4775E-1-1	35.0	R	H	T	369	R02	515	A5	30	0.72
63416I2	5218E-1-1	35.0	R	H	T	368	REH	521	A5	32	0.71
63416I2	5218E-1-2	35.0	R	H	T	368	REH	521	A5	32	0.71
63416I2	5218E-1-3	35.0	R	H	T	368	REH	521	A5	32	0.71
63416I1	5220E-1-1	35.0	R	H	T	366	REH	515	A5	27	0.71
63416I1	5220E-1-2	35.0	R	H	T	366	REH	515	A5	27	0.71
63416I1	5220E-1-3	35.0	R	H	T	368	REH	521	A5	32	0.71
63410J3	5243E-1-1	12.0	R	H	T	410	REH	548	A5	30	0.75
63410J3	5243E-1-2	12.0	R	H	T	410	REH	548	A5	30	0.75
63410I3	5282E-2-1	12.0	R	H	T	410	REH	548	A5	30	0.75
63410I3	5282E-2-2	12.0	R	H	T	410	REH	548	A5	30	0.75
63410F1	5340E-1-1	40.0	R	H	T	387	REH	529	A5	34	0.73
63410F1	5340E-1-2	40.0	R	H	T	387	REH	529	A5	34	0.73
63413C2	5470E-1-1	35.0	R	H	T	390	REH	532	A5	33	0.73
63413C2	5470E-1-2	35.0	R	H	T	390	REH	532	A5	33	0.73
63413C2	5470E-1-3	35.0	R	H	T	390	REH	532	A5	33	0.73
63413G4	5534E-1-1	12.0	R	H	T	421	REH	553	A5	33	0.76
63413G4	5534E-1-2	12.0	R	H	T	421	REH	553	A5	33	0.76
63416G4	5936E-1-1	35.0	R	H	T	366	REH	515	A5	27	0.71

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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
63416G4	5936E-1-2	35.0	R	H	T	366	REH	515	A5	27	0.71
63413B5	6303E-1-1	12.0	R	H	T	421	REH	553	A5	33	0.76
63413B5	6303E-1-2	12.0	R	H	T	421	REH	553	A5	33	0.76
63413B5	6303E-2-1	12.0	R	H	T	421	REH	553	A5	33	0.76
63413B5	6303E-2-2	12.0	R	H	T	421	REH	553	A5	33	0.76
63413B4	6305E-1-1	12.0	R	H	T	421	REH	553	A5	33	0.76
63413B4	6305E-1-2	12.0	R	H	T	421	REH	553	A5	33	0.76
63413B4	6305E-2-2	12.0	R	H	T	421	REH	553	A5	33	0.76
63413B3	6307E-1-1	25.0	R	H	T	390	REH	532	A5	33	0.73
63413B3	6307E-1-2	25.0	R	H	T	390	REH	532	A5	33	0.73
63413B3	6307E-1-3	25.0	R	H	T	390	REH	532	A5	33	0.73
63413B2	6309E-1-1	30.0	R	H	T	390	REH	532	A5	33	0.73
63413B2	6309E-1-2	30.0	R	H	T	390	REH	532	A5	33	0.73
63413B2	6309E-1-3	30.0	R	H	T	390	REH	532	A5	33	0.73
63410E2	6412E-1-1	12.0	R	H	T	410	REH	548	A5	30	0.75
63410E2	6412E-1-2	12.0	R	H	T	410	REH	548	A5	30	0.75
63410E2	6412E-2-1	12.0	R	H	T	410	REH	548	A5	30	0.75
63410E2	6412E-2-2	12.0	R	H	T	410	REH	548	A5	30	0.75
63410E1	6414E-1-1	12.0	R	H	T	410	REH	548	A5	30	0.75
63410E1	6414E-1-2	12.0	R	H	T	410	REH	548	A5	30	0.75
63410E1	6414E-2-1	12.0	R	H	T	410	REH	548	A5	30	0.75
63410E1	6414E-2-2	12.0	R	H	T	410	REH	548	A5	30	0.75
63416D3	6418E-1-1	30.0	R	H	T	366	REH	515	A5	27	0.71
63416D3	6418E-1-2	30.0	R	H	T	366	REH	515	A5	27	0.71
63416D3	6418E-1-3	30.0	R	H	T	366	REH	515	A5	27	0.71

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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
63413D5	6427E-1-1	40.0	R	H	T	390	REH	532	A5	33	0.73
63413D5	6427E-1-2	40.0	R	H	T	390	REH	532	A5	33	0.73

**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

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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>
63388B4	3805E-1-1	1	CV	10x10	H	L	-20	279	242	273	265
63388B4	3805E-1-2	1	CV	10x10	H	L	-20	279	242	273	265
63388B4	3805E-1-3	1	CV	10x10	H	L	-20	279	242	273	265
63388F4	4236E-1-1	1	CV	10x10	H	L	-20	258	257	277	264
63388F4	4236E-1-2	1	CV	10x10	H	L	-20	258	257	277	264
63388F4	4236E-1-3	1	CV	10x10	H	L	-20	258	257	277	264
63225E3	4775E-1-1	1	CV	10x10	H	L	-20	214	205	216	212
63416I2	5218E-1-1	1	CV	10x10	H	L	-20	232	228	239	233
63416I2	5218E-1-2	1	CV	10x10	H	L	-20	232	228	239	233
63416I2	5218E-1-3	1	CV	10x10	H	L	-20	232	228	239	233
63416I1	5220E-1-1	1	CV	10x10	H	L	-20	228	229	216	224
63416I1	5220E-1-2	1	CV	10x10	H	L	-20	228	229	216	224
63416I1	5220E-1-3	1	CV	10x10	H	L	-20	232	228	239	233
63410J3	5243E-1-1	1	CV	10x10	H	L	-20	226	229	224	226
63410J3	5243E-1-2	1	CV	10x10	H	L	-20	226	229	224	226
63410I3	5282E-2-1	1	CV	10x10	H	L	-20	226	229	224	226
63410I3	5282E-2-2	1	CV	10x10	H	L	-20	226	229	224	226
63410F1	5340E-1-1	1	CV	10x10	H	L	-20	241	189	204	211
63410F1	5340E-1-2	1	CV	10x10	H	L	-20	241	189	204	211
63413C2	5470E-1-1	1	CV	10x10	H	L	-20	210	233	230	224
63413C2	5470E-1-2	1	CV	10x10	H	L	-20	210	233	230	224
63413C2	5470E-1-3	1	CV	10x10	H	L	-20	210	233	230	224
63413G4	5534E-1-1	1	CV	10x10	H	L	-20	236	245	232	238
63413G4	5534E-1-2	1	CV	10x10	H	L	-20	236	245	232	238
63416G4	5936E-1-1	1	CV	10x10	H	L	-20	228	229	216	224

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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>
63416G4	5936E-1-2	1	CV	10x10	H	L	-20	228	229	216	224
63413B5	6303E-1-1	1	CV	10x10	H	L	-20	236	245	232	238
63413B5	6303E-1-2	1	CV	10x10	H	L	-20	236	245	232	238
63413B5	6303E-2-1	1	CV	10x10	H	L	-20	236	245	232	238
63413B5	6303E-2-2	1	CV	10x10	H	L	-20	236	245	232	238
63413B4	6305E-1-1	1	CV	10x10	H	L	-20	236	245	232	238
63413B4	6305E-1-2	1	CV	10x10	H	L	-20	236	245	232	238
63413B4	6305E-2-2	1	CV	10x10	H	L	-20	236	245	232	238
63413B3	6307E-1-1	1	CV	10x10	H	L	-20	210	233	230	224
63413B3	6307E-1-2	1	CV	10x10	H	L	-20	210	233	230	224
63413B3	6307E-1-3	1	CV	10x10	H	L	-20	210	233	230	224
63413B2	6309E-1-1	1	CV	10x10	H	L	-20	210	233	230	224
63413B2	6309E-1-2	1	CV	10x10	H	L	-20	210	233	230	224
63413B2	6309E-1-3	1	CV	10x10	H	L	-20	210	233	230	224
63410E2	6412E-1-1	1	CV	10x10	H	L	-20	226	229	224	226
63410E2	6412E-1-2	1	CV	10x10	H	L	-20	226	229	224	226
63410E2	6412E-2-1	1	CV	10x10	H	L	-20	226	229	224	226
63410E2	6412E-2-2	1	CV	10x10	H	L	-20	226	229	224	226
63410E1	6414E-1-1	1	CV	10x10	H	L	-20	226	229	224	226
63410E1	6414E-1-2	1	CV	10x10	H	L	-20	226	229	224	226
63410E1	6414E-2-1	1	CV	10x10	H	L	-20	226	229	224	226
63410E1	6414E-2-2	1	CV	10x10	H	L	-20	226	229	224	226
63416D3	6418E-1-1	1	CV	10x10	H	L	-20	228	229	216	224
63416D3	6418E-1-2	1	CV	10x10	H	L	-20	228	229	216	224
63416D3	6418E-1-3	1	CV	10x10	H	L	-20	228	229	216	224



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## Impact testing <sup>(A01)</sup> Impact tests were performed in accordance with EN 10045/ISO 148-1 with results as stated below:

Heat/slab <sup>(B07)</sup>	Plate ID <sup>(B06)</sup>	Position <sup>(C01)</sup>	Notch <sup>(C40)</sup>	Shape <sup>(C41)</sup>	Loc. <sup>(C01)</sup>	Dir. <sup>(C02)</sup>	Temp. °C <sup>(C03)</sup>	SV J <sup>(C42)</sup>	SV J <sup>(C42)</sup>	SV J <sup>(C42)</sup>	AV J <sup>(C43)</sup>
63413D5	6427E-1-1	1	CV	10x10	H	L	-20	210	233	230	224
63413D5	6427E-1-2	1	CV	10x10	H	L	-20	210	233	230	224

### Supplementary Information <sup>(C99)</sup>

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

**Notch:** <sup>(C40)</sup> CU = Charpy U-notch, CV = Charpy V-notch, CVA = Charpy V-notch (ASTM)

**Loc.:** <sup>(C01)</sup> H = head, T = tail

**Dir.:** <sup>(C02)</sup> 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](http://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