

Our order No.: (A08) 2389131 Your order No.: (A07) 43150 Order registration date: 24.05.2022 Date of dispatch: 28.06.2022 B

Material requirements and customer information

Product: <small>(A03)</small> Plate	Steel standard and grade: <small>(B02)</small> EN10025-2:2019 S355K2+N	Surface tolerance: EN 10163-2 B3
Delivery condition: <small>(B04)</small> Normalized rolled (+N)		Length tolerance: EN 10029 Table 3
Customer name and address <small>(A06)</small> 4202 Oy AluSteel AB TELAKKATIE 4 23500 UUSIKAUPUNKI Finland	Certificate address 4202001 osto_UKI@feon.fi Finland a.faktarauskas@eu.nlmk.com;osto@alusteel.fi;osto_UKI@feon.fi	Width tolerance: EN 10029 Table 2 Thickness tolerance: EN 10029 Class B Flatness tolerance: EN 10029 Table 4 Class N

Supplementary information: (C04)
Fully Killed and Fine Grain

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>
61591G3	4798S	1	10.0	2500	6000	4	4 712	S355K2+N	Head	43150
61591G2	4808S	1	10.0	2500	6000	4	4 712	S355K2+N	Head	43150
61517H2	5579S	1	10.0	2500	6000	1	1 178	S355K2+N	Head	43150
61310O1	6169S	1	10.0	2500	6000	1	1 178	S355K2+N	Head	43150
61591G4	4769S	2	25.0	2500	8000	1	3 925	S355K2+N	Head	43150
61589I1	4239S	3	16.0	2000	6000	2	3 014	S355K2+N	Head	43150
61589J1	4249S	3	16.0	2000	6000	1	1 507	S355K2+N	Head	43150
61585J3	4306S	3	16.0	2000	6000	1	1 507	S355K2+N	Head	43150
61655E1	6812S	3	16.0	2000	6000	1	1 507	S355K2+N	Head	43150
61591F3	4287S	4	18.0	2000	6000	3	5 088	S355K2+N	Head	43150

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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>
60227E3	4332S	4	18.0	2000	6000	3	5 088	S355K2+N	Head	43150
61587A1	4240S	5	20.0	2000	6000	1	1 884	S355K2+N	Head	43150
61589J4	4250S	5	20.0	2000	6000	1	1 884	S355K2+N	Head	43150
61589C4	4291S	5	20.0	2000	6000	2	3 768	S355K2+N	Head	43150
61585J4	4305S	5	20.0	2000	6000	1	1 884	S355K2+N	Head	43150
61586B1	4393S	5	20.0	2000	6000	1	1 884	S355K2+N	Head	43150
61591G5	4733S	5	20.0	2000	6000	2	3 768	S355K2+N	Head	43150
61585G2	4752S	5	20.0	2000	6000	2	3 768	S355K2+N	Head	43150
61517J2	4903S	5	20.0	2000	6000	2	3 768	S355K2+N	Head	43150
						34	56 024			

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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
60227	0.17	1.60	0.21	0.014	0.005	0.025	0.048	0.020	0.002	0.027	0.042	0.002	0.001	0.0044	0.0003
61310	0.15	1.39	0.18	0.009	0.003	0.024	0.029	0.014	0.002	0.041	0.019	0.001	0.002	0.0041	0.0002
61517	0.17	1.47	0.19	0.020	0.005	0.039	0.039	0.018	0.002	0.038	0.017	0.001	0.002	0.0031	0.0003
61585	0.17	1.47	0.21	0.010	0.011	0.031	0.045	0.019	0.001	0.040	0.040	0.003	0.002	0.0045	0.0003
61586	0.17	1.47	0.22	0.012	0.004	0.020	0.019	0.008	0.001	0.043	0.039	0.001	0.002	0.0030	0.0003
61587	0.17	1.49	0.21	0.014	0.007	0.044	0.028	0.017	0.001	0.036	0.040	0.002	0.002	0.0032	0.0003
61589	0.18	1.49	0.22	0.010	0.003	0.040	0.038	0.020	0.001	0.044	0.041	0.003	0.002	0.0035	0.0003
61591	0.18	1.52	0.22	0.010	0.006	0.034	0.036	0.018	0.001	0.032	0.040	0.001	0.002	0.0047	0.0003
61655	0.17	1.47	0.22	0.012	0.004	0.030	0.024	0.014	0.003	0.038	0.042	0.001	0.002	0.0048	0.0002

Heat No. <small>(B07)</small>	CEV	Remark <small>(C70)</small>
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Set values:	min.	
	max.	0.45
60227	0.45	1 3 4 6
61310	0.39	1 3 4 6
61517	0.43	1 3 4 6
61585	0.42	1 3 4 6
61586	0.42	1 3 4 6
61587	0.43	1 3 4 6
61589	0.44	1 3 4 6
61591	0.44	1 3 4 6
61655	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
61589I1	4239S-1-1	16.0	R	H	T	448	REH	576	A5	30	0.78
61589I1	4239S-1-2	16.0	R	H	T	448	REH	576	A5	30	0.78
61587A1	4240S-2-2	20.0	R	H	T	440	REH	570	A5	27	0.77
61589J1	4249S-1-1	16.0	R	H	T	433	REH	570	A5	30	0.76
61589J4	4250S-1-2	20.0	R	H	T	424	REH	568	A5	28	0.75
61591F3	4287S-1-1	18.0	R	H	T	375	R02	542	A5	31	0.69
61591F3	4287S-1-2	18.0	R	H	T	375	R02	542	A5	31	0.69
61591F3	4287S-1-3	18.0	R	H	T	375	R02	542	A5	31	0.69
61589C4	4291S-1-2	20.0	R	H	T	430	REH	569	A5	28	0.76
61589C4	4291S-2-2	20.0	R	H	T	430	REH	569	A5	28	0.76
61585J4	4305S-2-2	20.0	R	H	T	409	R02	550	A5	24	0.74
61585J3	4306S-2-2	16.0	R	H	T	441	REH	565	A5	29	0.78
60227E3	4332S-1-1	18.0	R	H	T	486	REH	593	A5	25	0.82
60227E3	4332S-1-2	18.0	R	H	T	486	REH	593	A5	25	0.82
60227E3	4332S-1-3	18.0	R	H	T	486	REH	593	A5	25	0.82
61586B1	4393S-1-2	20.0	R	H	T	422	R02	558	A5	28	0.76
61591G5	4733S-1-2	20.0	R	H	T	375	R02	542	A5	31	0.69
61591G5	4733S-2-2	20.0	R	H	T	375	R02	542	A5	31	0.69
61585G2	4752S-1-2	20.0	R	H	T	419	R02	552	A5	26	0.76
61585G2	4752S-2-2	20.0	R	H	T	419	R02	552	A5	26	0.76
61591G4	4769S-1-1	25.0	R	H	T	375	R02	542	A5	31	0.69
61591G3	4798S-1-1	10.0	R	H	T	468	REH	586	A5	28	0.80
61591G3	4798S-1-2	10.0	R	H	T	468	REH	586	A5	28	0.80
61591G3	4798S-2-1	10.0	R	H	T	468	REH	586	A5	28	0.80
61591G3	4798S-2-2	10.0	R	H	T	468	REH	586	A5	28	0.80

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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
61591G2	4808S-1-1	10.0	R	H	T	468	REH	586	A5	28	0.80
61591G2	4808S-1-2	10.0	R	H	T	468	REH	586	A5	28	0.80
61591G2	4808S-2-1	10.0	R	H	T	468	REH	586	A5	28	0.80
61591G2	4808S-2-2	10.0	R	H	T	468	REH	586	A5	28	0.80
61517J2	4903S-1-2	20.0	R	H	T	411	REH	556	A5	28	0.74
61517J2	4903S-1-3	20.0	R	H	T	411	REH	556	A5	28	0.74
61517H2	5579S-1-1	10.0	R	H	T	395	REH	557	A5	26	0.71
61310O1	6169S-1-1	10.0	R	H	T	443	REH	536	A5	32	0.83
61655E1	6812S-2-2	16.0	R	H	T	450	REH	559	A5	26	0.81

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 (A01) 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>
61589I1	4239S-1-1	1	CV	10x10	H	L	-20	237	232	223	231
61589I1	4239S-1-2	1	CV	10x10	H	L	-20	237	232	223	231
61587A1	4240S-2-2	1	CV	10x10	H	L	-20	181	197	173	184
61589J1	4249S-1-1	1	CV	10x10	H	L	-20	206	214	217	212
61589J4	4250S-1-2	1	CV	10x10	H	L	-20	158	188	211	186
61591F3	4287S-1-1	1	CV	10x10	H	L	-20	138	184	193	172
61591F3	4287S-1-2	1	CV	10x10	H	L	-20	138	184	193	172
61591F3	4287S-1-3	1	CV	10x10	H	L	-20	138	184	193	172
61589C4	4291S-1-2	1	CV	10x10	H	L	-20	244	192	81	172
61589C4	4291S-2-2	1	CV	10x10	H	L	-20	244	192	81	172
61585J4	4305S-2-2	1	CV	10x10	H	L	-20	174	162	173	170
61585J3	4306S-2-2	1	CV	10x10	H	L	-20	120	120	114	118
60227E3	4332S-1-1	1	CV	10x10	H	L	-20	157	146	163	155
60227E3	4332S-1-2	1	CV	10x10	H	L	-20	157	146	163	155
60227E3	4332S-1-3	1	CV	10x10	H	L	-20	157	146	163	155
61586B1	4393S-1-2	1	CV	10x10	H	L	-20	191	222	231	215
61591G5	4733S-1-2	1	CV	10x10	H	L	-20	138	184	193	172
61591G5	4733S-2-2	1	CV	10x10	H	L	-20	138	184	193	172
61585G2	4752S-1-2	1	CV	10x10	H	L	-20	122	119	104	115
61585G2	4752S-2-2	1	CV	10x10	H	L	-20	122	119	104	115
61591G4	4769S-1-1	1	CV	10x10	H	L	-20	138	184	193	172
61591G3	4798S-1-1	1	CV	7.5x10	H	L	-20	113	105	117	112
61591G3	4798S-1-2	1	CV	7.5x10	H	L	-20	113	105	117	112
61591G3	4798S-2-1	1	CV	7.5x10	H	L	-20	113	105	117	112
61591G3	4798S-2-2	1	CV	7.5x10	H	L	-20	113	105	117	112

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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>
61591G2	4808S-1-1	1	CV	7.5x10	H	L	-20	110	105	111	109
61591G2	4808S-1-2	1	CV	7.5x10	H	L	-20	110	105	111	109
61591G2	4808S-2-1	1	CV	7.5x10	H	L	-20	110	105	111	109
61591G2	4808S-2-2	1	CV	7.5x10	H	L	-20	110	105	111	109
61517J2	4903S-1-2	1	CV	10x10	H	L	-20	156	182	184	174
61517J2	4903S-1-3	1	CV	10x10	H	L	-20	156	182	184	174
61517H2	5579S-1-1	1	CV	7.5x10	H	L	-20	152	176	174	167
61310O1	6169S-1-1	1	CV	7.5x10	H	L	-20	147	133	115	132
61655E1	6812S-2-2	1	CV	10x10	H	L	-20	231	249	272	251

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