

Tilaaja Purchaser
BE GROUP OY AB
PL 54
15101 LAHTI FINLAND
Tilaus nro Order No.
P100986

Vastaanottaja Consignee
BE GROUP OY AB
VANHANRADANKATU 42
15520 LAHTI FINLAND
Asiakkaan merkki Shipping mark
P100986

Päivämäärä Date
19.01.2023 AET
Valmistajan merkki
Mark of the Manufacturer



Laji Grade
SSAB LASER 355MIL PLUS
Laatuselvitys Quality Specifications
HIGH STRENGTH FORMABLE STEEL FOR LASER AND PLASMA CUTTING

Lisävaatimukset Additional requirements

Jatkuvavalettua happiterästä
Oxygen steel, continuous casting
Fully killed, Fine grain practiced

Pos. Item	Sulatus k. erä nro Cast. test No	T-tila Cond	Vetokoe Tensile test		RP02 MPa	RT05 MPa	REL MPa	REH MPa	RM _{0.2} MPa	A % 50 80 200	RE / RM	RM * A5	RAZ %			Keskiarvo Average	Huom Nb	Päästö Tempering °C
			K2	°C									1	2	3			
001	23129	031	TM	51						28					51	1.0		
002	25405	044	TM	11						27					11	1.0		

TM=THERMOMECH. TREATED

Pos. Item	Sulatus k. erä nro Cast. test No	Iskukoe Impact test	K3	°C	FA %			Keskiarvo Average	W (mm)	1	2	3	Keskiarvo Average	Erikoiskokeet Special tests	Huom Nb	Päästö Tempering °C
					1	2	3									
001	23129	031	151	-050	256	247	261	255								
002	25405	044	111	-050	223	247	245	238								

LE = Poikittainen laajenema Lateral Expansion

FA = Sitkeämurtuman osuus Shear fracture appearance

K3: 151=CH-VISO-V(J),10X10;BOTTOM;LONGIT;KV600 111=CH-VISO-V(J),10X10;TOP;LONGIT;KV600

Raahe Steel Works

Testaus ja tarkastus Testing and Inspection

Minna Valkama

MINNA VALKAMA
Valtuutettu tarkastaja Authorized inspection representative
Yhtiön nimi Company Name: SSAB Europe Oy
Kotipaikka Registered Office: RAAMEENLINNA

Osoite Address: PL 93, P.O. Box 93
FI-92101 RAAHE, FINLAND

Puhelin Telephone: 020 5911
+358 20 5911

Y-tunnus Business ID: 2389445-7

Täten todistamme, että toimitus on tilausvahvistuksen mukainen.
We hereby certify that the material described above has been tested and complies with the terms of the order confirmation.

Sulatus nro Cast No Schmelzen Nr. No de coulée	Koe nro Test No Prüf Nr. Essai No	Positio Item Pos. Poste	Cekv Ceq Ceq Ceq Cekv	Analyysi % Chemisch Zusammensetzung % Composition Chimique % (*-ppm)													
				C	SI	MN	P	S	AL	NB	V	TI	CU	CR	NI	MO	N
23129	001	.36	.090	.02	1.51	.009	.002	.046	.045	.049	.001	.012	0.04	0.04	.002	.004	.0001
25405	002	.37	.090	.02	1.53	.010	.003	.036	.046	.048	.001	.013	0.05	0.04	.003	.005	.0001

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

Raahe Steel Works

Testaus ja tarkastus
Prüfung und Kontrolle
Essais et Contrôle

Minna Valkama

MINNA VALKAMA

Vaihtoehtoisu tarkastaja
Sachverständiger
Authorized inspection representative
Inspector autorisé

Yrityksen nimi Company Name: SSAB Europe Oy
Kotipaikka Registered Office: HAMPEENLINNA



Osoite Address: PL 93, P.O. Box 99
FI-92101 RAAHE, FINLAND

Puhelin Telephone: 020 5911
+358 20 5911

Y-tunnus Business ID: 2389445-7

SSAB Europe Oy, Raahe Steel Works testing laboratories T002 and T010 are accredited by the FINAS accreditation service, accreditation requirement SFS-EN ISO/IEC 17025.
Steel manufactured and supplied by Raahe Steel Works is free from radiation.

EN 10 204-3.1 (2004)

Tilaaja Purchaser BE GROUP OY AB PL 54 15101 LAHTI FINLAND Tilaus nro Order No. P100986	Vastaanottaja Consignee BE GROUP OY AB VANHANRADANKATU 42 15520 LAHTI FINLAND Asiakkaan merkki Shipping mark P100986	Päivämäärä Date 19.01.2023
Todistus Certificate 31	Laatumerkintä Quality Marking S355ML	Tarkastajan leima Stamp of Inspector Vastaanottajan leima Stamp of Surveyor Muut leimaukset Other Stamps 
Toimitustyyppi Delivery type REST DELIVERY	Sulatus nro levy nro Cast No. Plate No. X X X X X X X X X X X X X X	Valmistajan merkki Mark of the Manufacturer 
Tuote Product HEAVY PLATES Laji Grade S355ML EN 10025-4:2019 Laatuselvitys Quality Specifications WELDABLE FINE GRAIN STRUCTURAL STEEL	Toleranssit Tolerances EN 10029:2010 CLASS A	Tekniset vaatimukset järkeä viralliset määräykset Technical terms of Delivery and/or Official Regulations

Positio Item	Mitat mm Dimensions mm	Merkki Mark	Kpl Pcs	Paino kg Weight kg	Sulatus levy nro Cast plate No	SP nro SP No	UT UT	MT MT	Turvamerkki Safety mark
HOT ROLLED STEEL PLATES									
PACKED, IN BUNDLES									
CEV MAX 0.38%, IMPACT TEST AT -50 C MIN 40J, SI MAX 0.03%.									
SURFACE CONDITION EN 10 163-2:2005 CLASS A3									
001	25.00 X 1500 X 3000	2101430506	12	10800	23129	031	031		
CEV MAX 0.38%, IMPACT TEST AT -50 C MIN 40J, SI MAX 0.03%.									
SURFACE CONDITION EN 10 163-2:2005 CLASS A3									
002	20.00 X 1500 X 3000	2101430526	10	7200	25405	044	044		
			***	22	18000				

Raahe Steel Works

Testaus ja tarkastus Testing and Inspection



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Kotipaikka Registered Office: HAAMEENLINNA

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Päivämäärä Date
19.01.2023
Valmistajan merkki
Mark of the Manufacturer



Laji Grade
S355ML

Lisävaatimukset Additional requirements

Laatuvalettua happiterästä
Oxygen steel, continuous casting

Fully killed, Fine grain practiced

Laatuseilytykset Quality Specifications
WELDABLE FINE GRAIN STRUCTURAL STEEL

Pos. Item	Sulatus k. erä nro Cast. test No	T-tila Cond	Vetokoe Tensile test		RP02 MPa	RT05 MPa	REL MPa	REH MPa	1	RM _{0.2} MPa	3	A % 50 80 200	RE / RM	RM * A5	RAZ %			Keskiarvo Average	Huom Nb	Päästö Tempering °C
			K2	°C											2	1	2			
001	23129	031	TM	51						455	515	28						51	1.0	
002	25405	044	TM	11						491	540	27						11	1.0	

TM=THERMOMECH. TREATED

Pos. Item	Sulatus k. erä nro Cast. test No	Iskukoe Impact test	K3	°C	1	2	3	Keskiarvo Average	W (mm)	1	2	3	Keskiarvo Average	Erikoiskokeet Special tests	Huom Nb	Päästö Tempering °C
001	23129	031	151	-050	256	247	261	255								
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				C	SI	MN	P	S	AL	NB	V	TI	CU	CR	NI	MO	N
23129	001	.36	.090	.02	1.51	.009	.002	.046	.045	.049	.001	.012	0.04	0.04	.002	.004	.0001
25405	002	.37	.090	.02	1.53	.010	.003	.036	.046	.048	.001	.013	0.05	0.04	.003	.005	.0001

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

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Essais et Contrôle**MINNA VALKAMA**Valtuutettu tarkastaja
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Authorized inspection representative
Inspector autoriséYritysnimi Company Name: SSAB Europe Oy
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by the FINAS accreditation service, accreditation requirement SFS-EN ISO/IEC 17025.

Steel manufactured and supplied by Raahe Steel Works is free from radiation.

Declaration of performance
(according to EU No 305/2011 and 574/2014)

DoP id. P023_02

Hot rolled Plate product S355ML / 1.8834
according to
EN 10025-4:2019
for bolted, welded and riveted structures.

SSAB
P.O Box 70
101 20 Stockholm
SWEDEN
T: +46 8 45 45 700
Email: info@ssab.com
Website: ssab.com

TÜV NORD Systems Gmbh & Co. KG
Grosse Bahnstrasse 31
D-22525 Hamburg
Germany
T: +49 40 8557 2368

Assessment system and verification for constancy
of performance
System 2+

The performance of the product identified in this document is
in conformity with the set of declared performance. This declaration of performance
is issued in accordance with Regulations (EU) No 305/2011 and 574/2014,
under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:



Jarkko Matkala
Vice President, hot rolled plate and strip products,
SSAB Europe Oy, Raahе Steelworks
Raahе 2015-06-09

CE

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0045-CPR-0573
EN 10025-1:2004

Dop id: P023_02	EN 10025-4:2019	Harmonized technical specification
S355ML Tolerances on dimensions and shapes.	Thickness	Performance Tolerances on the nominal thickness (acc. EN 10029 Class A unless otherwise stated)
	Nominal thickness (mm)	Lower Upper
Thickness	3 ≤ t < 5	-0,3 +0,7
	5 ≤ t < 8	-0,4 +0,8
	8 ≤ t < 15	-0,5 +0,9
	15 ≤ t < 25	-0,6 +1,0
	25 ≤ t < 40	-0,7 +1,3
	40 ≤ t < 80	-0,9 +1,7
	80 ≤ t < 150	-1,1 +2,1
150 ≤ t < 250	-1,2 +2,4	
Width	Nominal thickness	Tolerances Lower Upper
	t < 40	0 +20
	40 ≤ t < 150	0 +25
Length	150 ≤ t ≤ 400	0 +30
	Tolerances on width for plates with untrimmed edges (NK) shall be the subject of agreement between the manufacturer and purchaser at the time of enquiry and order	
	Nominal length l	Lower Upper
	l < 4000	0 +20
	4000 ≤ l < 6000	0 +30
Flatness	6000 ≤ l < 8000	0 +40
	8000 ≤ l < 10 000	0 +50
	10 000 ≤ l < 15 000	0 +75
	15 000 ≤ l ≤ 20 000	0 +100
	Tolerances on plates with nominal length l > 20 000 mm shall be agreed at the time of enquiry and order.	
Nominal thickness t	Measuring length	
t	1000 2000	
3 ≤ t < 5	9 14	
5 ≤ t < 8	8 12	
8 ≤ t < 15	7 11	
15 ≤ t < 25	7 10	
25 ≤ t < 40	6 9	
40 ≤ t < 250	5 8	

Yield strength	thickness mm	min (Mpa)	max (Mpa)
	≤ 16	355	
	> 16 ≤ 40	345	
	> 40 ≤ 63	335	
	> 63 ≤ 80	325	
Tensile strength	thickness mm	min (Mpa)	max (Mpa)
	≤ 40	470	630
	> 40 ≤ 63	450	610
	> 63 ≤ 80	440	600
	> 80 ≤ 100	440	600
Elongation	thickness mm	min %	
	> 100 ≤ 120	430 22	
Impact strength	thickness mm	temperature, °C	min. energy, J
		-50	27
Weldability CEV	thickness mm	CEV max %	
	≤ 16	0.39	
	> 16 ≤ 40	0.39	
	> 40 ≤ 63	0.40	
	> 63 ≤ 120	0.45	
Durability (chemical composition)	element	Value	
	C, max	0.14	
	Si, max	0.50	
	Mn, max	1.60	
	P, max	0.025	
	S, max	0.020	
	Nb, max	0.05	
	V, max	0.10	
	Al, min	0.02	
	Ti, max	0.05	
	Cr, max	0.30	
	Ni, max	0.50	
	Mo, max	0.10	
	Cu, max	0.55	
	N, max	0.015	

Declaration of performance
(according to UK CPR 2020 No 1359)

DoP id. P023_02

Hot rolled Plate product S355ML / 1.8834
according to
EN 10025-4:2019
for bolted, welded and riveted structures.

SSAB
P.O Box 70
101 20 Stockholm
SWEDEN
T: +46 8 45 45 700
Email: info@ssab.com
Website: ssab.com

LRQA Verification Limited (Reg. No. 4929226)
Registered office
1 Trinity Park, Bickenhill Lane
Birmingham
B37 7ESA

Assessment system and verification for constancy
of performance
System 2+

The performance of the product identified in this document is
in conformity with the set of declared performance. This declaration of performance
is issued in accordance with Regulations (EU) No 305/2011 and 574/2014,
under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:



Jarkko Matkala
Vice President, hot rolled plate and strip products,
SSAB Europe Oy, Raahе Steelworks
Raahе 2015-06-09

UK CA

05

0038/CPR/PRJ11 100341405/ 01
EN 10025-1:2004

Dop id: P023_02	EN 10025-4:2019	Harmonized technical specification
S355ML Tolerances on dimensions and shapes.	Thickness	Performance Tolerances on the nominal thickness (acc. EN 10029 Class A unless otherwise stated)
	Nominal thickness (mm)	Lower Upper
Thickness	3 ≤ t < 5	-0,3 +0,7
	5 ≤ t < 8	-0,4 +0,8
	8 ≤ t < 15	-0,5 +0,9
	15 ≤ t < 25	-0,6 +1,0
	25 ≤ t < 40	-0,7 +1,3
	40 ≤ t < 80	-0,9 +1,7
	80 ≤ t < 150	-1,1 +2,1
150 ≤ t < 250	-1,2 +2,4	
Width	Nominal thickness	Tolerances Lower Upper
	t < 40	0 +20
	40 ≤ t < 150	0 +25
Length	150 ≤ t ≤ 400	0 +30
	Tolerances on width for plates with untrimmed edges (NK) shall be the subject of agreement between the manufacturer and purchaser at the time of enquiry and order	
	Nominal length l	Lower Upper
	l < 4000	0 +20
	4000 ≤ l < 6000	0 +30
	6000 ≤ l < 8000	0 +40
8000 ≤ l < 10 000	0 +50	
10 000 ≤ l < 15 000	0 +75	
15 000 ≤ l ≤ 20 000	0 +100	
Tolerances on plates with nominal length l > 20 000 mm shall be agreed at the time of enquiry and order.		
Flatness	Nominal thickness t	Measuring length
	t	1000 2000
	3 ≤ t < 5	9 14
	5 ≤ t < 8	8 12
	8 ≤ t < 15	7 11
	15 ≤ t < 25	7 10
25 ≤ t < 40	6 9	
40 ≤ t < 250	5 8	

Yield strength	thickness mm	min (Mpa)	max (Mpa)
	≤ 16	355	
	> 16 ≤ 40	345	
	> 40 ≤ 63	335	
	> 63 ≤ 80	325	
> 80 ≤ 100	325		
> 100 ≤ 120	320		
Tensile strength	thickness mm	min (Mpa)	max (Mpa)
	≤ 40	470	630
	> 40 ≤ 63	450	610
	> 63 ≤ 80	440	600
	> 80 ≤ 100	440	600
> 100 ≤ 120	430	590	
Elongation	thickness mm	min %	
		22	
Impact strength	thickness mm	temperature, °C	min. energy, J
		-50	27
Weldability CEV	thickness mm	CEV max %	
	≤ 16	0.39	
	> 16 ≤ 40	0.39	
	> 40 ≤ 63	0.40	
	> 63 ≤ 120	0.45	
> 120 ≤ 150	0.45		
Durability (chemical composition)	element	Value	
	C, max	0.14	
	Si, max	0.50	
	Mn, max	1.60	
	P, max	0.025	
	S, max	0.020	
	Nb, max	0.05	
	V, max	0.10	
	Al, min	0.02	
	Ti, max	0.05	
	Cr, max	0.30	
Ni, max	0.50		
Mo, max	0.10		
Cu, max	0.55		
N, max	0.015		