


Tilaja Purchaser BE GROUP OY AB PL 54 15101 LAHTI FINLAND Tilaus nro Order No. PC94046	Vastaanottaja Consignee BE GROUP OY AB METSÄKIVENTIE 4 62100 LAPUA FINLAND Asiakkaan merkki Shipping mark	Päivämäärä Date 10.11.2021
Tilauksen vahvistus Order Confirmation 27425	Laatu- ja toimitustiedot Quality Marking S420ML	Valmistajan merkki Mark of the Manufacturer 
Tuotteen sertifikaatti Certificate 31	Tarkastajan leima Stamp of Inspector Vastaanottajan leima Stamp of Surveyor Muut leimaukset Other Stamps	

Tuotteen nimi Product  
HEAVY PLATES

Toimitustyyppi Delivery type  
PART DELIVERY

Tuote Product  
HEAVY PLATES

Laatuasteilu Laji Grade  
S420ML EN 10025-4:2019

Laatuasteilu Laatuselvitys Quality Specifications  
WELDABLE FINE GRAIN STRUCTURAL STEEL

Laatuasteilu Laatuasteilu Quality Marking  
S420ML

Sulatus nro levy nro Cast No. Plate No.  
X X X X X X X X X X X X X X X X

Toleranssit Tolerances  
EN 10029:2010 CLASS A

Tekniset vaatimukset jätetä 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
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<b>HOT ROLLED STEEL PLATES</b>									
<b>FLATNESS MAX 6MM/M. .SURFACE CONDITION EN 10 163-2:2005 CLASS B3</b>									
001	10.00 X 2000	X	6000	2101466000					
001	10.00 X 2000	X	6000		3	2880	83448	013	013
001	10.00 X 2000	X	6000		3	2880	83448	016	016
<b>FLATNESS MAX 6MM/M. .SURFACE CONDITION EN 10 163-2:2005 CLASS B3</b>									
002	12.00 X 2000	X	6000	2101466100					
002	12.00 X 2000	X	6000		2	2304	83448	014	014
002	12.00 X 2000	X	6000		3	3456	83448	015	015
<b>FLATNESS MAX 6MM/M. .SURFACE CONDITION EN 10 163-2:2005 CLASS B3</b>									
003	15.00 X 2000	X	6000	2101466250					
003	15.00 X 2000	X	6000		4	5760	83448	011	011
003	15.00 X 2000	X	6000		3	4320	83448	012	012

\*\*\* 18 21600

**Raahe Steel Works**  
Testaus ja tarkastus Testing and Inspection

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.

*Minna Valkama*

**MINNA VALKAMA**  
Valtuutettu tarkastaja Authorized inspection representative

Yhtiön nimi Company Name: SSAB Europe Oy  
Kotipaikka Registered Office: HAMEENLINNA

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

Puhelin Telephone: 020 5911  
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Y-tunnus Business ID: 2389445-7

Tilaaja Purchaser  
BE GROUP OY AB  
PL 54  
15101 LAHTI FINLAND  
Tilaus nro Order No.  
PC94046

Vastaanottaja Consignee  
BE GROUP OY AB  
METSÄKIVENTIE 4  
62100 LAPUA FINLAND  
Asiakkaan merkki Shipping mark

Päivämäärä Date  
10.11.2021  
Valmistajan merkki  
Mark of the Manufacturer



Tilausvahvistus Order Confirmation  
27425

Lisävaatimukset Additional requirements

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

Laatuseilytykset Quality Specifications  
WELDABLE FINE GRAIN STRUCTURAL STEEL

Pos. Item	Sulatus, k era / nro Cast. test No	T-tila Cond	Vetokoe Tensile test		RP02 MPa	RT05 MPa	REL MPa	REH MPa	1	RM <sub>0.2</sub> MPa	3	A %	50	80	200	RE / RM	RM * A5	1	RAZ %	2	3	Keskianvo Average	Huom Nb	Päästö Tempering °C
			K2	°C																				
001	83448	013	TM	11	511				613			25												
001	83448	016	TM	11	503				603			25												
002	83448	014	TM	11	486				605			26												
002	83448	015	TM	11	497				604			22												
003	83448	011	TM	11					517			22												
003	83448	012	TM	11					510			26												

TM=THERMOMECH. TREATED

Pos. Item	Sulatus, k era / nro Cast. test No	Iskukoe Impact test	K3	°C	W (mm)	FA %	*Specimen Unbroken			Erikoiskokeet Special tests			Huom Nb	Päästö Tempering °C
							Keskianvo Average	3	Keskianvo Average	K4	°C	1		
001	83448	013	115	-050	252	222	253	242						
001	83448	016	115	-050	252	242	248	247						
002	83448	014	115	-050	266	260	263	263						
002	83448	015	115	-050	248	261	218	242						
003	83448	011	111	-050	326	365	357	349						
003	83448	012	111	-050	356	365	335	352						

FA = Sitkeämurtuman osuus Shear fracture appearance  
LE = Poikittainen laajenema Lateral Expansion

### Raabe 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: HAMEENLINNA

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FIN-32101 RAAHE, FINLAND

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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.



ANALYYSITODISTUS ANALYSIS CERTIFICATE  
 ANALYSEBESCHEINIGUNG COMPOSITIO CHIMIQUE CERTIFICAT  
 СЕРТИФИКАТ АНАЛИЗА

3/3

A 27425 -001  
 09.11.2021

Päivämäärä Date Datum Date Дата  
 10.11.2021 AMH

Sulatus nro Cast No Schmelzen Nr. No de coulée № Плавки	Koe nro Test No Prüf Nr. Essai No № Проб	Positio Item Pos. Poste Поз.	Analyysi % Chemisch Zusammensetzung % Composition Chimique % (*--ppm)														
			C	SI	MN	P	S	AL	NB	V	TI	CU	CR	NI	MO	N	B
83448	001	.21	.055	.31	0.85	.007	.001	.047	.041	.006	.001	.013	0.04	0.04	.003	.004	.0002
83448	002	.21	.055	.31	0.85	.007	.001	.047	.041	.006	.001	.013	0.04	0.04	.003	.004	.0002
83448	003	.21	.055	.31	0.85	.007	.001	.047	.041	.006	.001	.013	0.04	0.04	.003	.004	.0002

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

**Raabe Steel Works**

Testaus ja tarkastus  
 Prüfung und Kontrolle

Испытание и контроль качества

Steel manufactured and supplied by Raabe Steel Works is free from radiation.  
 Производимая на металлургическом комбинате «Raabe Steel Works» и поставляемая заказчику сталь не излучает радиации.

*Minna Valkama*

**MINNA VALKAMA**

Valtuutettu tarkastaja  
 Sachverständiger

Uplomennöchenñ inspektor

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 Kotipaikka Registered Office: HAMMELINNA

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 +358 20 5911

Y-tunnus Business ID: 2389445-7

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

DoP id. P025\_02

Hot rolled Plate product S420ML / 1.8836  
according to  
EN 10025-4:2019  
for bolted, welded and riveted structures.

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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

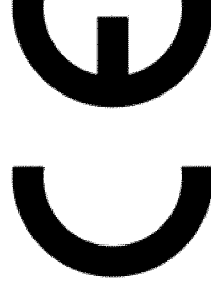
**System 2+**

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




05

0045-CPR-0573  
EN 10025-1:2004

Dop id: P025_02		EN 10025-4:2019		Harmonized technical specification	
S420ML	Tolerances on dimensions and shapes.	Performance			
		Tolerances on the nominal thickness (acc. EN 10029 Class A unless otherwise stated)			
Thickness	Nominal thickness (mm)	Lower	Upper		
	$3 \leq t < 5$	-0,3	+0,7		
	$5 \leq t < 8$	-0,4	+0,8		
	$8 \leq t < 15$	-0,5	+0,9		
	$15 \leq t < 25$	-0,6	+1,0		
	$25 \leq t < 40$	-0,7	+1,3		
	$40 \leq t < 80$	-0,9	+1,7		
Width	$80 \leq t < 150$	-1,1	+2,1		
	$150 \leq t < 250$	-1,2	+2,4		
Length	Nominal thickness	Tolerances			
	$t < 40$	Lower	Upper		
	$40 \leq t < 150$	0	+20		
Flatness	$150 \leq t < 400$	0	+25		
	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	Lower	Upper		
	$l < 4000$	0	+20		
	$4000 \leq l < 6000$	0	+30		
	$6000 \leq l < 8000$	0	+40		
	$8000 \leq l < 10\ 000$	0	+50		
$10\ 000 \leq l < 15\ 000$	0	+75			
$15\ 000 \leq l \leq 20\ 000$	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		
	$3 \leq t < 5$	9	14		
	$5 \leq t < 8$	8	12		
	$8 \leq t < 15$	7	11		
	$15 \leq t < 25$	7	10		
$25 \leq t < 40$	6	9			
$40 \leq t < 250$	5	8			

Yield strength	thickness mm	min (Mpa)	max (Mpa)
	$\leq 16$	420	
	$> 16 \leq 40$	400	
	$> 40 \leq 63$	390	
	$> 63 \leq 80$	380	
Tensile strength	thickness mm	min (Mpa)	max (Mpa)
	$\leq 40$	520	680
	$> 40 \leq 63$	500	660
	$> 63 \leq 80$	480	640
	$> 80 \leq 100$	470	630
Elongation	thickness mm	min %	
	$> 100 \leq 120$	19	
Impact strength	thickness mm	temperature, °C	min. energy, J
	$> 100 \leq 120$	-50	27
Weldability CEV	thickness mm	CEV max %	
	$\leq 16$	0.43	
	$> 16 \leq 40$	0.45	
	$> 40 \leq 63$	0.46	
	$> 63 \leq 120$	0.47	
Durability (chemical composition)	element	Value	
	C, max	0.16	
	Si, max	0.50	
	Mn, max	1.70	
	P, max	0.025	
	S, max	0.020	
	Nb, max	0.05	
	V, max	0.12	
	Al, min	0.02	
	Ti, max	0.05	
	Cr, max	0.30	
	Ni, max	0.80	
Mo, max	0.20		
Cu, max	0.55		
N, max	0.025		

Tilaja Purchaser BE GROUP OY AB PL 54 15101 LAHTI FINLAND Tilaus nro Order No. PC94046	Vastaanottaja Consignee BE GROUP OY AB METSÄKIVENTIE 4 62100 LAPUA FINLAND Asiakkaan merkki Shipping mark	Päivämäärä Date 10.11.2021
Tilauksen vahvistus Order Confirmation 27425	Laatumerkintä Quality Marking S420ML	Valmistajan merkki Mark of the Manufacturer 
Toimitus Certificate 31	Laivaus Shipping	Tarkastajan leima Stamp of Inspector Mxx

Toimitustyyppi Delivery type  
PART DELIVERY

Tuote Product  
HEAVY PLATES

Laji Grade  
S420ML EN 10025-4:2019

Laatuseilytyyppi Quality Specifications  
WELDABLE FINE GRAIN STRUCTURAL STEEL

Tekniset vaatimukset järkeä viralliset määräykset Technical terms of Delivery and/or Official Regulations

Toleranssit Tolerances  
EN 10029:2010 CLASS A

Sulatus nro levy nro Cast No. Plate No.  
X X X X X X X X X X X X X X X X

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
<b>HOT ROLLED STEEL PLATES</b>									
<b>FLATNESS MAX 6MM/M. .SURFACE CONDITION EN 10 163-2:2005 CLASS B3</b>									
001	10.00 X 2000	X 6000 2101466000	3	2880	83448	013	013		
001	10.00 X 2000	X 6000	3	2880	83448	016	016		
<b>FLATNESS MAX 6MM/M. .SURFACE CONDITION EN 10 163-2:2005 CLASS B3</b>									
002	12.00 X 2000	X 6000 2101466100	2	2304	83448	014	014		
002	12.00 X 2000	X 6000	3	3456	83448	015	015		
<b>FLATNESS MAX 6MM/M. .SURFACE CONDITION EN 10 163-2:2005 CLASS B3</b>									
003	15.00 X 2000	X 6000 2101466250	4	5760	83448	011	011		
003	15.00 X 2000	X 6000	3	4320	83448	012	012		

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### Raahe Steel Works

Testaus ja tarkastus Testing and Inspection

*Minna Valkama*

MINNA VALKAMA

Vaiuutettu tarkastaja Authorized inspection representative

Yhtiön nimi Company Name: SSAB Europe Oy  
Kotipaikka Registered Office: HAMEENLINNA

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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.

Tilaja Purchaser  
BE GROUP OY AB  
PL 54  
15101 LAHTI FINLAND  
Tilaus nro Order No.  
PC94046

Vastaanottaja Consignee  
BE GROUP OY AB  
METSÄKIVENTIE 4  
62100 LAPUA FINLAND  
Asiakkaan merkki Shipping mark

Päivämäärä Date  
10.11.2021  
Valmistajan merkki  
Mark of the Manufacturer



Tilausvahvistus Order Confirmation  
27425

Lisävaatimukset Additional requirements

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

Laatuseilytykset Quality Specifications  
WELDABLE FINE GRAIN STRUCTURAL STEEL

Pos. Item	Sulatus, k era No Cast. test No	T-tila Cond	Vetokoe Tensile test		RP02 MPa	RT05 MPa	REL MPa	REH MPa	RM MPa	A %	RE / RM	RM * A5	RAZ %			Keskiarvo Average	Huom Nb	Päästö Tempering °C
			K2	°C									1	2	3			
001	83448 013	TM 11			511			613		25								
001	83448 016	TM 11			503			603		25								
002	83448 014	TM 11			486			605		26								
002	83448 015	TM 11			497			604		22								
003	83448 011	TM 11						517		22								
003	83448 012	TM 11						510		26								

TM=THERMOMECH. TREATED

Pos. Item	Sulatus, k era nro Cast. test No	Iskukoe Impact test	K3	°C	Keskianvo Average	W (mm)	FA %	LE (mm)			*Specimen Unbroken			Erikoiskokeet Special tests	Huom Nb	Päästö Tempering °C	
								1	2	3	Keskianvo Average	K4	°C				1
001	83448 013	115	115	-050	252	222	253	242									
001	83448 016	115	115	-050	252	242	248	247									
002	83448 014	115	115	-050	266	260	263	263									
002	83448 015	115	115	-050	248	261	218	242									
003	83448 011	111	111	-050	326	365	357	349									
003	83448 012	111	111	-050	356	365	335	352									

K3: 115=CH-V/ISO-V(J),7.5X10.TOP\_LONGIT,KV600 111=CH-V/ISO-V(J),10X10.TOP\_LONGIT,KV600

LE = Poikittainen laajenema Lateral Expansion

### Raabe Steel Works

Testaus ja tarkastus Testing and Inspection

MINNA VALKAMA  
Valtuutettu tarkastaja Authorized inspection representative

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.

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

Y-tunnus Business ID: 2389445-7



ANALYYSITODISTUS ANALYSIS CERTIFICATE  
 ANALYSEBESCHEINIGUNG COMPOSITIO CHIMIQUE CERTIFICAT  
 СЕРТИФИКАТ АНАЛИЗА

3/3

A 27425 -001  
 09.11.2021

Päivämäärä Date Datum Date Дата  
 10.11.2021 AMH

Sulatus nro Cast No Schmelzen Nr. No de coulée № Плавки	Koe nro Test No Prüf Nr. Essai No № Проб	Positio Item Pos. Poste Поз.	Analyysi % Chemisch Zusammensetzung % Composition Chimique % Анализ проанки % (*-ppm)														
			C	SI	MN	P	S	AL	NB	V	TI	CU	CR	NI	MO	N	B
83448	001	.21	.055	.31	0.85	.007	.001	.047	.041	.006	.001	.013	0.04	0.04	.003	.004	.0002
83448	002	.21	.055	.31	0.85	.007	.001	.047	.041	.006	.001	.013	0.04	0.04	.003	.004	.0002
83448	003	.21	.055	.31	0.85	.007	.001	.047	.041	.006	.001	.013	0.04	0.04	.003	.004	.0002

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

**Raah Steel Works**

Testaus ja tarkastus  
 Prüfung und Kontrolle

Испытание и контроль качества

Steel manufactured and supplied by Raah Steel Works is free from radiation.  
 Производимая на металлургическом комбинате «Raah Steel Works» и поставляемая заказчику сталь не излучает радиации.

*Minna Valkama*

**MINNA VALKAMA**

Valtuutettu tarkastaja  
 Sachverständiger

Authorized inspection representative  
 Inspector autorisé

Уполномоченный инспектор

Yhtiön nimi Company Name: SSAB Europe Oy  
 Kotipaikka Registered Office: HAMMENLINNA

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 +358 20 5911

Y-tunnus Business ID: 2389445-7



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

DoP id. P025\_02

Hot rolled Plate product S420ML / 1.8836  
according to  
EN 10025-4:2019  
for bolted, welded and riveted structures.

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Assessment system and verification for constancy  
of performance

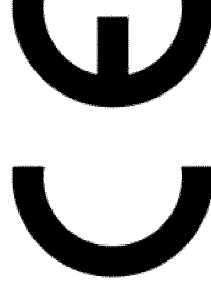
**System 2+**

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



05

0045-CPR-0573  
EN 10025-1:2004

Dop id: P025_02	EN 10025-4:2019	Harmonized technical specification
S420ML 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	$3 \leq t < 5$	-0,3 +0,7
	$5 \leq t < 8$	-0,4 +0,8
	$8 \leq t < 15$	-0,5 +0,9
	$15 \leq t < 25$	-0,6 +1,0
	$25 \leq t < 40$	-0,7 +1,3
	$40 \leq t < 80$	-0,9 +1,7
	$80 \leq t < 150$	-1,1 +2,1
	$150 \leq t < 250$	-1,2 +2,4
Width	Nominal thickness	Tolerances
	$t < 40$	Lower Upper
	$40 \leq t < 150$	0 +20
Length	$150 \leq t \leq 400$	0 +25
	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	Tolerances
	$l$	Lower Upper
	$l < 4000$	0 +20
Flatness	$4000 \leq l < 6000$	0 +30
	$6000 \leq l < 8000$	0 +40
	$8000 \leq l < 10\ 000$	0 +50
	$10\ 000 \leq l < 15\ 000$	0 +75
	$15\ 000 \leq l \leq 20\ 000$	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
	$3 \leq t < 5$	9 14
	$5 \leq t < 8$	8 12
	$8 \leq t < 15$	7 11
	$15 \leq t < 25$	7 10
$25 \leq t < 40$	6 9	
$40 \leq t < 250$	5 8	

Yield strength	thickness mm	min (Mpa)	max (Mpa)
	$\leq 16$	420	
	$> 16 \leq 40$	400	
	$> 40 \leq 63$	390	
	$> 63 \leq 80$	380	
Tensile strength	thickness mm	min (Mpa)	max (Mpa)
	$\leq 40$	520	680
	$> 40 \leq 63$	500	660
	$> 63 \leq 80$	480	640
	$> 80 \leq 100$	470	630
Elongation	thickness mm	min %	max %
	$> 100 \leq 120$	460	620
Impact strength	thickness mm	temperature, °C	min. energy, J
	$> 100 \leq 120$	-50	27
Weldability CEV	thickness mm	CEV max %	
	$\leq 16$	0.43	
	$> 16 \leq 40$	0.45	
	$> 40 \leq 63$	0.46	
Durability (chemical composition)	element	Value	
	C, max	0.16	
	Si, max	0.50	
	Mn, max	1.70	
	P, max	0.025	
	S, max	0.020	
	Nb, max	0.05	
	V, max	0.12	
	Al, min	0.02	
	Ti, max	0.05	
	Cr, max	0.30	
	Ni, max	0.80	
	Mo, max	0.20	
	Cu, max	0.55	
	N, max	0.025	