VLAVI

PROFESSIONAL WELDING COMPANY

OUTSTANDING AND RELIABLE PARTNER
BRINGING PEOPLE AND BUSINESSES TOGETHER

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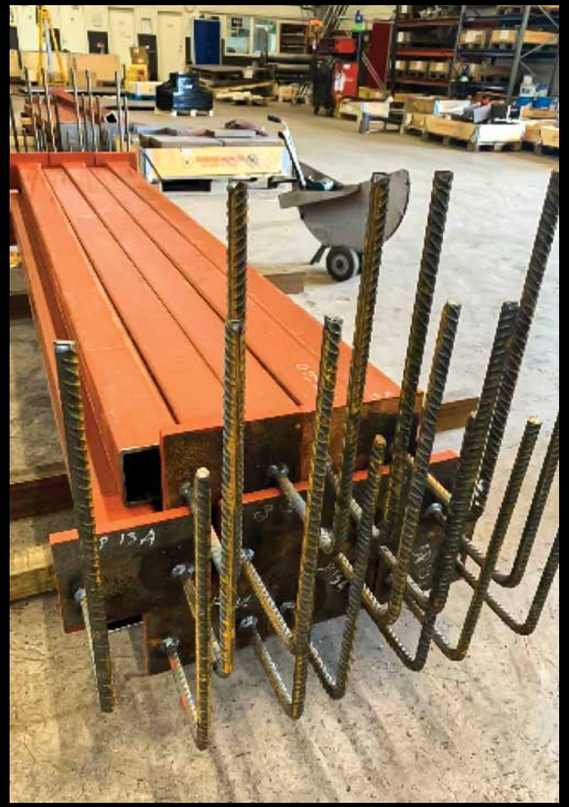
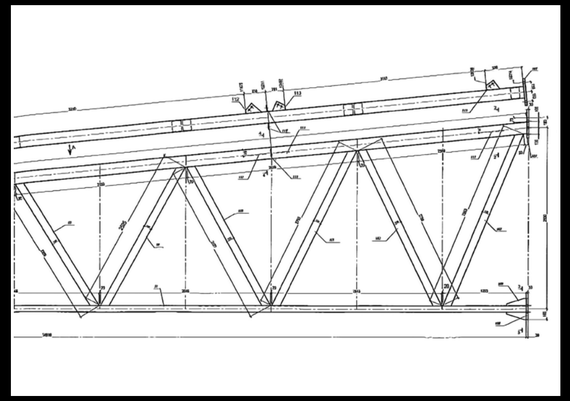
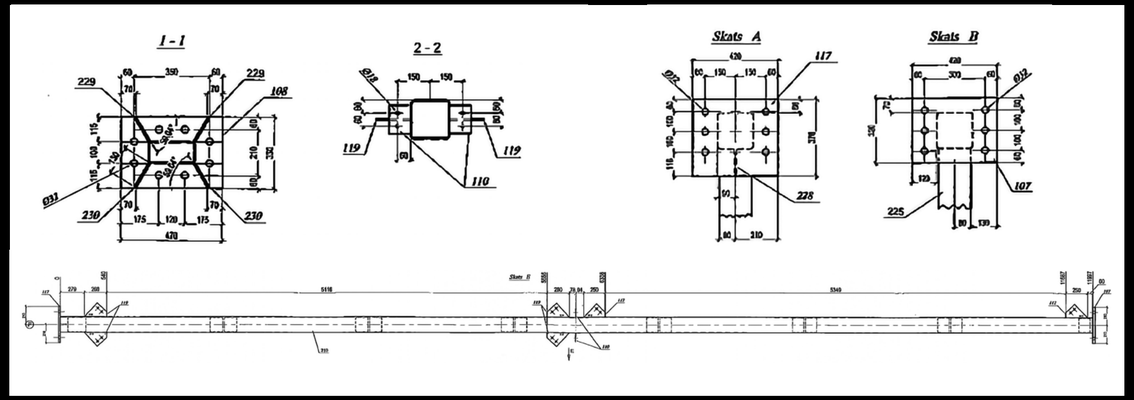
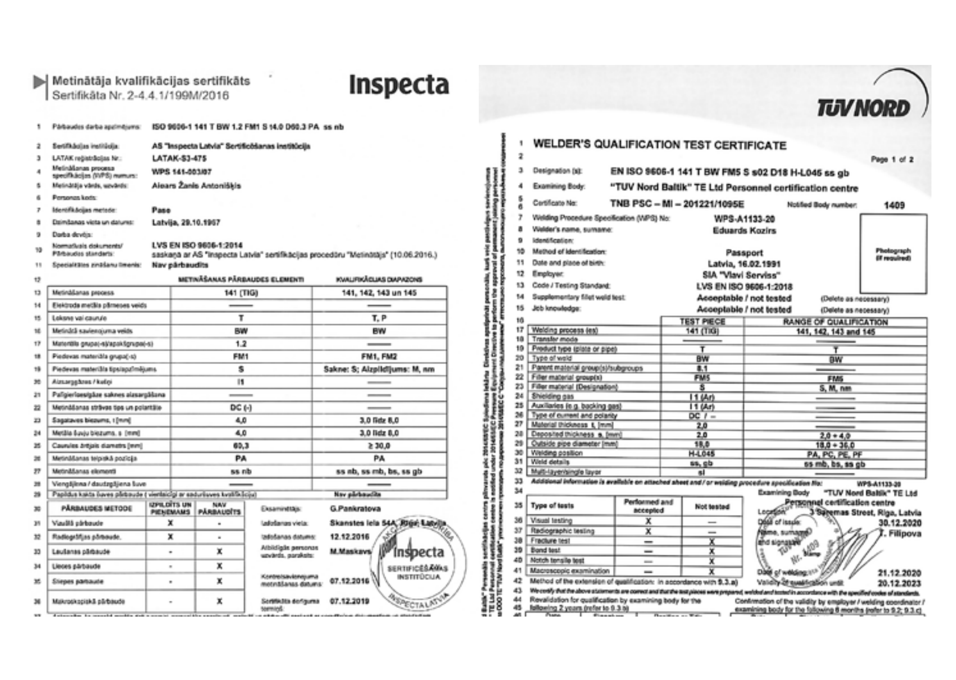


Project: **Bridge**
City: **Hisings Kärra, Sweden**
Year: **2021 – present**
Type of welding: **135/138**
Welding position: **PC; PH; PF**





Project: **Warehouse / Cooling and heating system**
City: **Landskrona, Sweden**
Year: **2021**
Type of welding: **141**
Welding position: **HL045; PH; PC**



Metinātāja kvalifikācijas sertifikāts
Sertifikāta Nr. 2-4.4.1/199M/2016

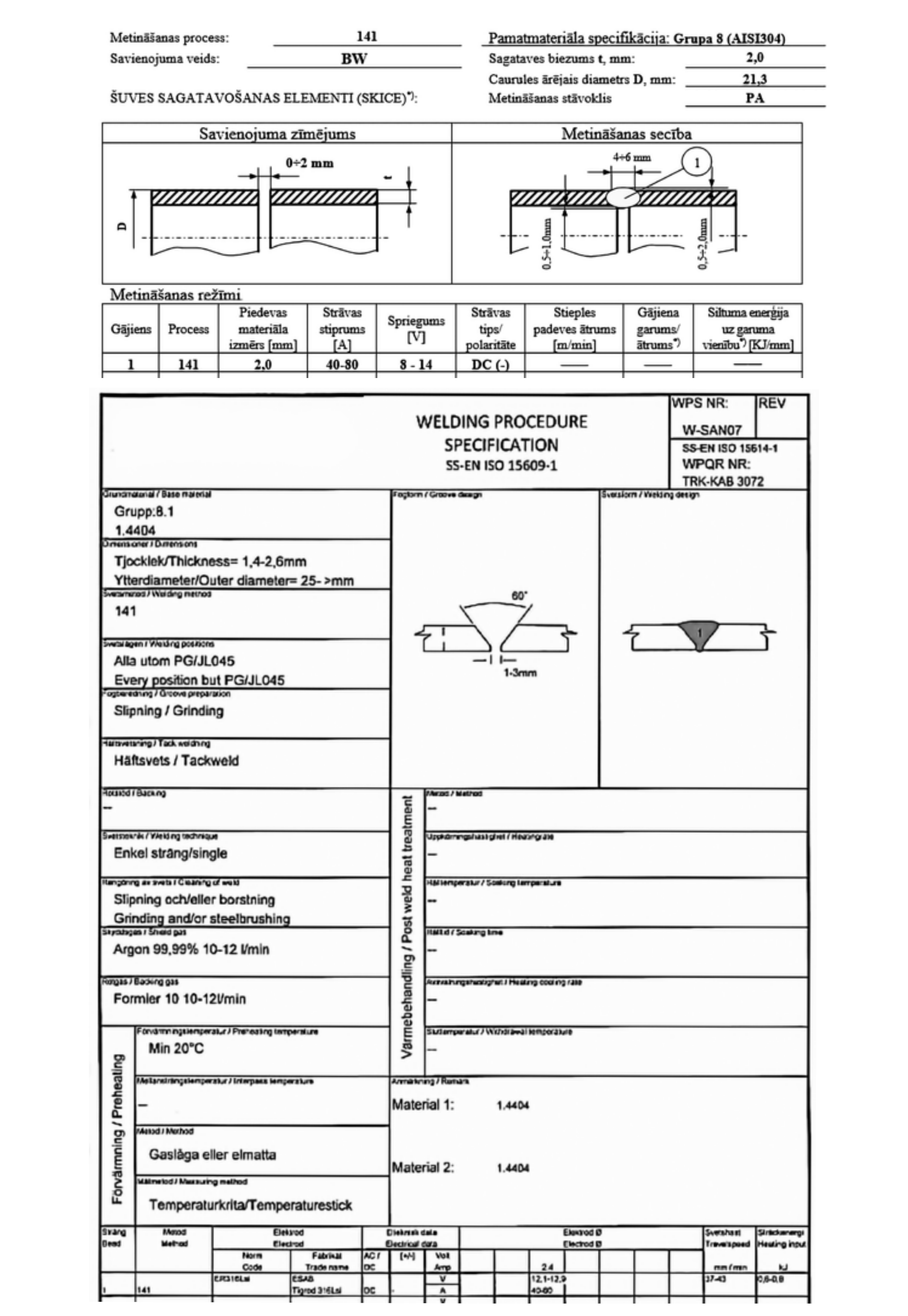
Inspecta

1	Pārbaudes darba apzīmējums:	ISO 9606-1 141 T BW 1.2 FM1 S 14.0 D60.3 PA ss nb
2	Sertifikācijas institūcija:	AS "Inspecta Latvia" Sertificēšanas institūcija
3	LATAK reģistrācijas Nr.:	LATAK-S3-475
4	Metināšanas procesa specifikācijas (WPS) numurs:	WPS 141-003/07
5	Metinātāja vārds, uzvārds:	Alears Žanis Antonišķis
6	Personas kods:	
7	Identifikācijas metode:	Pase
8	Dzimšanas vieta un datums:	Latvija, 29.10.1967
9	Darba devējs:	
10	Normatīvais dokuments/ Pārbaudes standarts:	LVS EN ISO 9606-1:2014 saskaņā ar AS "Inspecta Latvia" sertifikācijas procedūru "Metinātājs" (10.06.2016.)
11	Specialitātes zināšanu līmenis:	Nav pārbaudīts
12	METINĀŠANAS PĀRBAUDES ELEMENTI	KVALIFIKĀCIJAS DIAPAZONS

TÜV NORD

1	WELDER'S QUALIFICATION TEST CERTIFICATE	Page 1 of 2
2		
3	Designation (s):	EN ISO 9606-1 141 T BW FM5 S s02 D18 H-L045 ss gb
4	Examining Body:	"TUV Nord Baltik" TE Ltd Personnel certification centre
5 6	Certificate No:	TNB PSC – MI – 201221/1095E Notified Body number: 1409
7	Welding Procedure Specification (WPS) No:	WPS-A1133-20
8	Welder's name, surname:	Eduards Kozirs
9	Identification:	
10	Method of identification:	Passport
11	Date and place of birth:	Latvia, 16.02.1991
12	Employer:	SIA "Viavi Serviss"

Photograph (if required)



Metināšanas process:	141	Pamatmateriāla specifikācija:	Grupa 8 (AISI304)
Savienojuma veids:	BW	Sagataves biezums t, mm:	2,0
		Caurules ārējais diametrs D, mm:	21,3
ŠUVES SAGATAVOŠANAS ELEMENTI (SKICE)*):		Metināšanas stāvoklis	PA

Savienojuma zīmējums — Metināšanas secība

Metināšanas režīmi

Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Spriegums [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums*)	Siltuma enerģija uz garuma vienību*) [KJ/mm]
1	141	2,0	40-80	8 - 14	DC (-)	——	——	——

WELDING PROCEDURE SPECIFICATION
SS-EN ISO 15609-1

WPS NR: W-SAN07 | REV
SS-EN ISO 15614-1
WPQR NR: TRK-KAB 3072

Grundmaterial / Base material: Grupp:8.1, 1.4404
Dimensioner / Dimensions: Tjocklek/Thickness= 1,4-2,6mm; Ytterdiameter/Outer diameter= 25- >mm
Svetsmetod / Welding method: 141
Svetslägen / Welding positions: Alla utom PG/JL045; Every position but PG/JL045
Fogberedning / Groove preparation: Slipning / Grinding
Häftsvetsning / Tack welding: Häftsvets / Tackweld
Rotstöd / Backing: --
Svetsteknik / Welding technique: Enkel sträng/single
Rengöring av svets / Cleaning of weld: Slipning och/eller borstning; Grinding and/or steelbrushing
Skyddsgas / Shield gas: Argon 99,99% 10-12 l/min
Rotgas / Backing gas: Formier 10 10-12l/min

Fogform / Groove design

Svetsform / Welding design

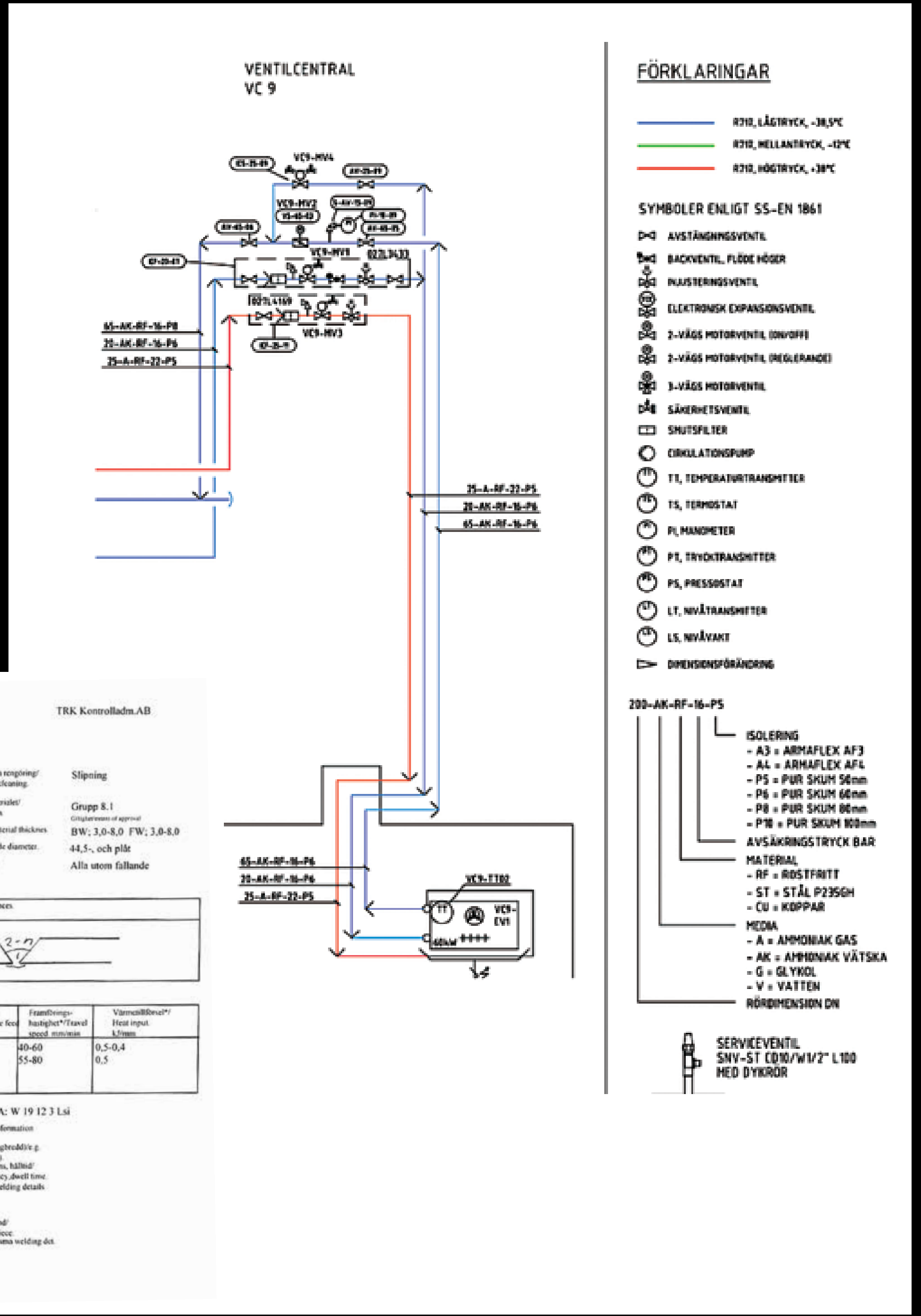
Förvärmning / Preheating
Förvärmningstemperatur / Preheating temperature: Min 20°C
Mellansträngstemperatur / Interpass temperature: --
Metod / Method: Gaslåga eller elmatta
Mätmetod / Measuring method: Temperaturkrita/Temperaturestick

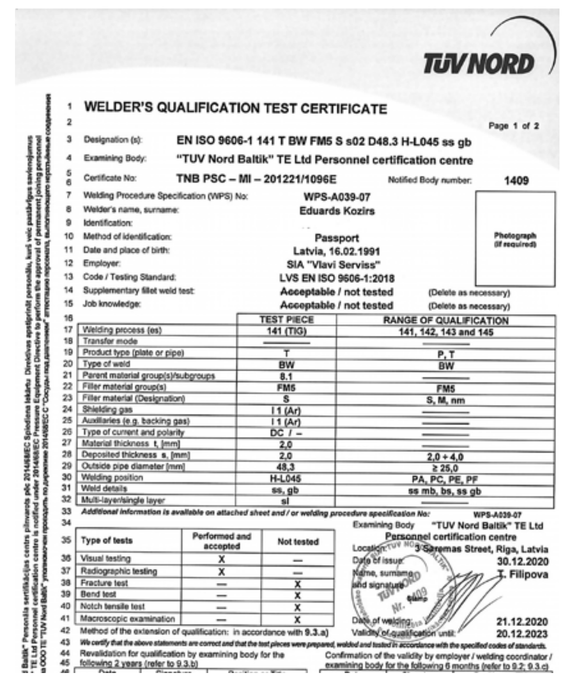
Värmebehandling / Post weld heat treatment
Metod / Method: --
Uppvärmningshastighet / Heating rate: --
Hålltemperatur / Soaking temperature: --
Hålltid / Soaking time: --
Avsvalningshastighet / Heating cooling rate: --
Sluttemperatur / Withdrawal temperature: --

Anmärkning / Remark
Material 1: 1.4404
Material 2: 1.4404

Sträng Bead	Metod Method	Elektrod Electrod Norm Code	Fabrikat Trade name	AC / DC	(+/-)	Volt Amp	Elektrod Ø Electrod Ø 2,4	Svetshast Travelspeed mm / min	Sträckenergi Heating input kJ
1	141	ER316LsI	ESAB Tigrod 316LsI	DC	-	V	12,1-12,9	37-43	0,6-0,8
						A	40-80		

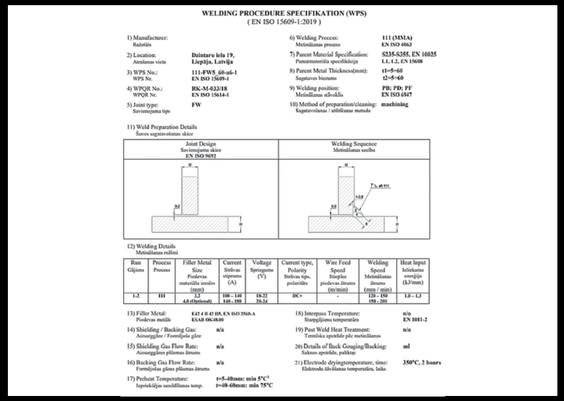
Project: **Astorp warehouse**
City: **Åstorp, Sweden**
Year: **2021**
Type of works: **Welding / Assembly**
Type of welding: **141**
Welding position: **HL045; PH; PC**




TÜV NORD
WELDER'S QUALIFICATION TEST CERTIFICATE


Svetsdatablad WPS SS-EN ISO 15609-1

Project: **Welding and assembling of metal constructions / Wearhouse**
City: **Hyltebruk, Sweden**
Year: **2021**
Type of welding: **111**
Welding position: **PB; PA; PD; PC**



WELDING PROCEDURE SPECIFIKATION (WPS)
(EN ISO 15609-1:2019)

1) Manufacturer: Ražotājs
2) Location: Atrašanas vieta — **Dzintaru iela 19, Liepāja, Latvija**
3) WPS No.: WPS No. — **111-FWS_60-ok-1 EN ISO 15609-1**
4) WPQR No.: WPQR Nr. — **RK-M-023358 EN ISO 15614-1**
5) Joint type: Savienojuma tips — **FW**
6) Welding Process: Metināšanas process — **111 (MMA) EN ISO 4063**
7) Parent Material Specification: Pamatmateriāla specifikācija — **S235-S355, EN 10025 1.1, 1.2, EN 15608**
8) Parent Metal Thickness(mm): Sagataves biezums — **t1=5-60 t2=5-60**
9) Welding position: Metināšanas stāvoklis — **PB; PA; PF EN ISO 6947**
10) Method of preparation/cleaning: Sagatavošanas / attīrīšanas metode — **machining**

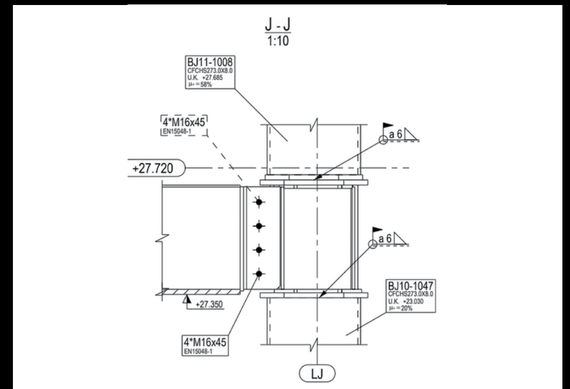
11) Weld Preparation Details
Šuves sagatavošanas skice

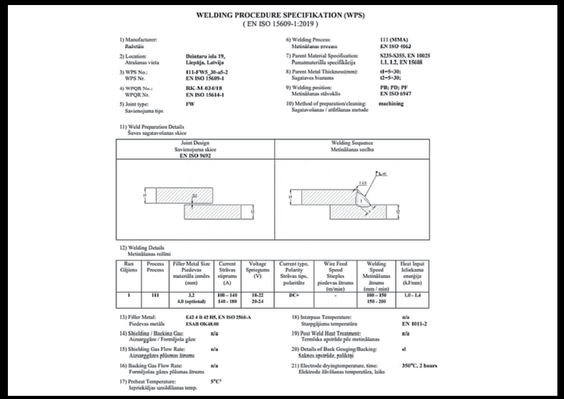
Joint Design Savienojuma skice EN ISO 9692	Welding Sequence Metināšanas secība

12) Welding Details
Metināšanas režīmi

Run Gājiens	Process Process	Filler Metal Size Piedevas materiāla izmērs (mm)	Current Strāvas stiprums (A)	Voltage Spriegums (V)	Current type, Polarity Strāvas tips, polaritāte	Wire Feed Speed Stieņa piedeves ātrums (m/min)	Welding Speed Metināšanas ātrums (mm / min)	Heat Input Iekšējene enerģija (kJ/mm)
1-2	111	3.2 4.0 (Optional)	100 - 140 140 - 190	18-22 20-24	DC+	-	110 - 150 150 - 200	1.2 - 1.5

13) Filler Metal: Piedevas metāls — **E42 4 B 42 H5, EN ISO 2560-A ESAB OK46.00**
14) Shielding / Backing Gas: Aizsarggāze / Formējošā gāze — **n/a**
15) Shielding Gas Flow Rate: Aizsargplūsmas plūsmas ātrums — **n/a**
16) Backing Gas Flow Rate: Formējošas gāzes plūsmas ātrums — **n/a**
17) Preheat Temperature: Sapriekšējas uzsildīšanas temp. — **t=5-40mm: min 5°C[1] t=40-60mm: min 75°C**
18) Interpass Temperature: Starpgājiena temperatūra — **n/a EN 1011-2**
19) Post Weld Heat Treatment: Termiska apstrāde pēc metināšanas — **n/a**
20) Details of Back Gouging/Backing: Saknes apstrāde, palīklis — **nd**
21) Electrode dryingtemperature, time: Elektrodu žāvēšanas temperatūra, laiks — **350°C, 2 hours**





WELDING PROCEDURE SPECIFIKATION (WPS)
(EN ISO 15609-1:2019)

1) Manufacturer: Ražotājs
2) Location: Atrašanas vieta — **Dzintaru iela 19, Liepāja, Latvija**
3) WPS No.: WPS Nr. — **111-FWS_30-ok-2 EN ISO 15609-1**
4) WPQR No.: WPQR Nr. — **RK-M-024158 EN ISO 15614-1**
5) Joint type: Savienojuma tips — **FW**
6) Welding Process: Metināšanas process — **111 (MMA) EN ISO 4063**
7) Parent Material Specification: Pamatmateriāla specifikācija — **S235-S355, EN 10025 1.1, 1.2, EN 15608**
8) Parent Metal Thickness(mm): Sagataves biezums — **t1=5-30; t2=5-30;**
9) Welding position: Metināšanas stāvoklis — **PB; PA; PF EN ISO 6947**
10) Method of preparation/cleaning: Sagatavošanas / attīrīšanas metode — **machining**

11) Weld Preparation Details
Šuves sagatavošanas skice

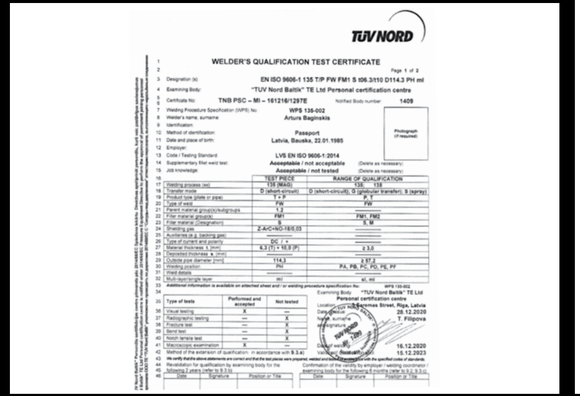
Joint Design Savienojuma skice EN ISO 9692	Welding Sequence Metināšanas secība

12) Welding Details
Metināšanas režīmi

Run Gājiens	Process Process	Filler Metal Size Piedevas materiāla izmērs (mm)	Current Strāvas stiprums (A)	Voltage Spriegums (V)	Current type, Polarity Strāvas tips, polaritāte	Wire Feed Speed Stieņa piedeves ātrums (m/min)	Welding Speed Metināšanas ātrums (mm / min)	Heat Input Iekšējene enerģija (kJ/mm)
1	111	3.2 4.0 (optional)	100 - 140 140 - 190	18-22 20-24	DC+	-	110 - 150 150 - 200	1.2 - 1.5

13) Filler Metal: Piedevas metāls — **E42 4 B 42 H5, EN ISO 2560-A ESAB OK46.00**
14) Shielding / Backing Gas: Aizsarggāze / Formējošā gāze — **n/a**
15) Shielding Gas Flow Rate: Aizsargplūsmas plūsmas ātrums — **n/a**
16) Backing Gas Flow Rate: Formējošas gāzes plūsmas ātrums — **n/a**
17) Preheat Temperature: Sapriekšējas uzsildīšanas temp. — **5°C[1]**
18) Interpass Temperature: Starpgājiena temperatūra — **n/a EN 1011-2**
19) Post Weld Heat Treatment: Termiska apstrāde pēc metināšanas — **n/a**
20) Details of Back Gouging/Backing: Saknes apstrāde, palīklis — **nl**
21) Electrode dryingtemperature, time: Elektrodu žāvēšanas temperatūra, laiks — **350°C, 2 hours**

Project: **Hydraulic system**
City: **Örebro, Sweden**
Year: **2021**
Type of works: **Welding / Assembly**
Type of welding: **135/138**
Welding position: **PA; PB**



TÜV NORD

WELDER'S QUALIFICATION TEST CERTIFICATE

Page 1 of 2

3.	Designation (s):	EN ISO 9606-1 135 T/P FW FM1 S t06.3/t10 D114.3 PH ml
4.	Examining Body:	"TUV Nord Baltik" TE Ltd Personal certification centre
5.	Certificate No:	TNB PSC – MI – 161216/129TE — Notified Body number: 1409
7.	Welding Procedure Specification (WPS) No:	WPS 135-002
8.	Welder's name, surname:	Arturs Baginskis
9.	Identification:	Photograph (if required)
10.	Method of identification:	Passport
11.	Date and place of birth:	Latvia, Bauska, 22.01.1985
12.	Employer:	
13.	Code / Testing Standard:	LVS EN ISO 9606-1:2014
14.	Supplementary Mat'l weld test:	Acceptable / not acceptable (Delete as necessary)
15.	Job knowledge:	Acceptable / not tested (Delete as necessary)

		TEST PIECE	RANGE OF QUALIFICATION
17.	Welding process (ies)	135 (MAG)	135; 138
18.	Type (manual, ...)	S (short-circuit)	S (short-circuit); G (globular transfer); S (spray)
19.	Product form (plate or pipe)	P + T	P + T
20.	Type of weld	FW	FW
21.	Parent material group(s)/subgroups	1.3	———
22.	Filler material group(s)	FM1	FM1; FM2
23.	Filler material (consumable)	S	S; W
24.	Shielding gas	Z-A/C+NO-18/8.2/3	———
25.	Auxiliaries (e.g. backing gas)	———	———
26.	Type of current and polarity	DC (+)	———
27.	Material thickness, t (mm)	6.3 (T) + 10.0 (P)	≥ 3.0
28.	Pipe diameter, D (mm) & t (mm)	———	———
29.	Outside pipe diameter (mm)	114.3	≥ 57.2
30.	Welding position	PA	PA; PB; PC; PD; PE; PF
31.	Weld details	———	———
32.	Multi-/non-single layer	mi	mi; ml

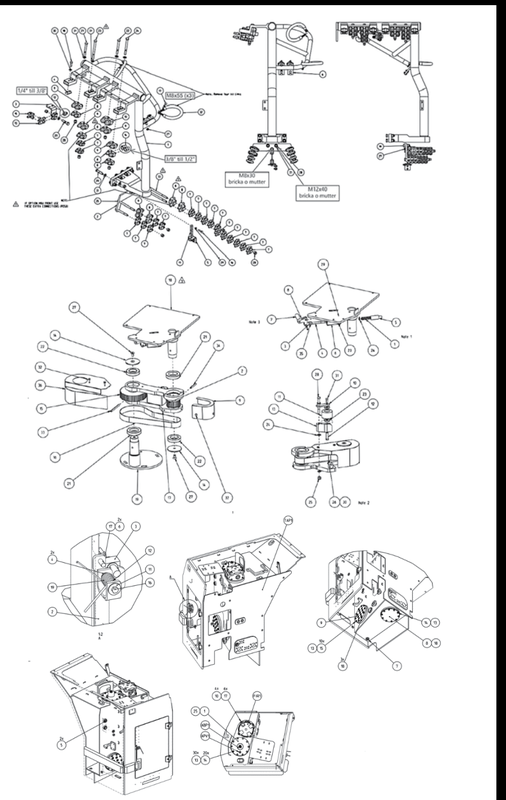
Additional information is available on attached sheet and / or welding procedure specification No: WPS 135-002

	Type of tests	Performed and accepted	Not tested
36.	Visual testing	X	—
37.	Radiographic testing	—	X
38.	Fracture test	—	X
39.	Bend test	—	X
40.	Notch tenacity test	—	X
41.	Macroscopic examination	—	X

Examining Body: "TUV Nord Baltik" TE Ltd Personal certification centre
Location and address: 45 Krasnas Street, Riga, Latvia
Date of test: 28.12.2020
Name, surname of examiner: T. Filipova
Signature of examiner: [signature]
Date: 16.12.2020
Signature of Responsible Person: [signature]
Date: 16.12.2023

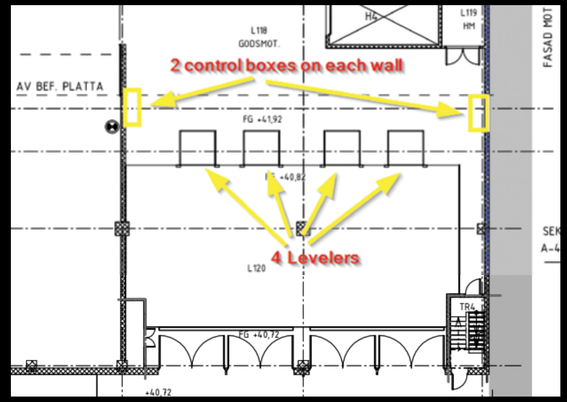
42. We certify that the statements and comments made in this welder's qualification test record are correct and that the welder was welded, tested and qualified in accordance with the specifications of standard mentioned above.
43. Revalidation for qualification by examining body for the following 3 years (refer to 9.3.1):
44. Revalidation for qualification by examining body for the following 3 years (refer to 9.3.1):
45. Confirmation of the welder by employer / welding coordinator:
46. Confirmation of the welder by examining body for the following 6 months (refer to 9.2.3, 9.3.1):

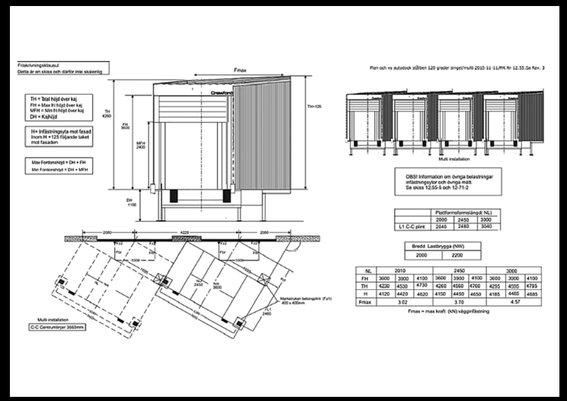
	Date	Signature	Position or role
47.			
48.			

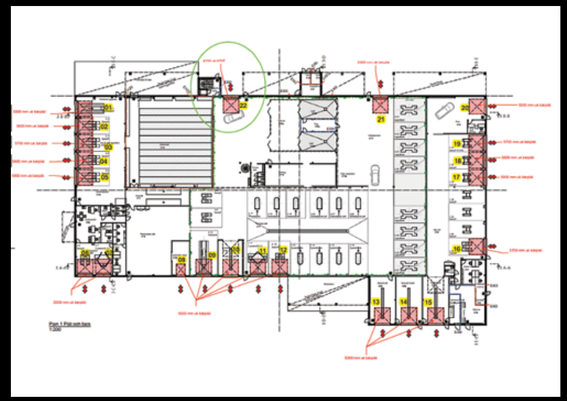


Project: **Grain dryer**
City: **Skeninge, Sweden**
Year: **2020 – present**
Type of works: **Welding / Assembly**
Type of welding: **111**
Welding position: **PB; PC; PD**

Project: **Industrial and Commercial doors / Loading dock equipment**
City: **Stocholm/ Malmö/ Göteborg, Sweden**
Year: **2020 – present**
Type of works: **Assembly**
Type of welding: **136/135/111**

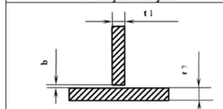
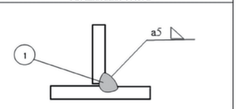






Project: **Repair works**
City: **Kiruna, Sweden**
Year: **2020 – present**
Type of works: **Welding / Assembly**
Type of welding: **136/135/111**
Welding position: **PB; PC; PD**

ŠUVES SAGATAVOŠANAS ELEMENTI (SKICE)*):

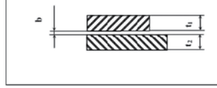
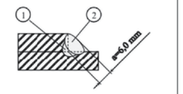
Savienojuma zīmējums	Metināšanas seciba
	

Metināšanas režīmi

Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Spriegums [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums*)	Sīkuma enerģija uz garuma vienību*) [KJ/mm]
1	111	3,2	90-130	21 -24	DC(+)	———	———	———

7	Welding Process:	136 (MAG welding)	Parent Material Specification: Steel group No. 1
8	Joint Type:	FW (fillet weld)	acc. to CEN ISO/TR 15608 (steel with min $R_{eH} \leq 355$ N/mm²)
9	Welding Position:	PB, PD, PF acc. to EN ISO 6947	Material Thickness **t**, [mm]: t1=8,8; t2=8,8
10	Joint preparation:	(according to EN ISO	Outside Pipe Diameter **D**, [mm]: ———
11		9692-1: 2013 point 3.1.2.)	Gap between workpieces **b**, [mm]: b=0 ÷ 2

12 WELD PREPARATION DETAILS (SKETCH)*):

Joint Design	Welding sequence
	

14 WELDING DETAILS

Run	Welding Process	Size of Filler Material, [mm]	Current, [A]	Voltage, [V]	Type of current / Polarity	Wire Feed Speed, [m/min]	Run-out length / Travel speed [mm/min] *)	Heat input *) [kJ/mm]
1	136	1,2	230 ÷ 240	26 ÷ 28	DC / +	10,0 ÷ 11,0	232 ÷ 346	0,83 ÷ 1,39
2	136	1,2	200 ÷ 220	23 ÷ 25	DC / +	8,0 ÷ 9,0	183 ÷ 257	0,86 ÷ 1,44

LATAK EN ISO/IEC 17024:2012 53-474

SERTIFIKĀCIJAS CENTRS

"Certification Centre" Ltd
SPECIALIST CERTIFICATION CENTRE
WELDER QUALIFICATION TEST CERTIFICATE

Designation (s):	EN ISO 9606-1 136 P FW FM1 P s10 PB ml	
Certificate No:	SC – M – 0237/2021	
Welding Procedure Specification No:	136-4, 136-5	Welder's photograph (if required)
Welder's name, surname:	Māris Draulis	
Identification:		
Method of identification:	PASSPORT	
Date and place of birth:	Latvia, 25.12.1974	
Employer:	"VLAVI SWE" Ltd.	
Testing Standard/ Code:	EN ISO 9606-1: 2017	
Job knowledge:	Acceptable/ not tested	(Delete as necessary)
Extra verification for fillet welds:	Yes / No	(Delete as necessary)

	TEST PIECE	RANGE OF QUALIFICATION
Welding process (es)	136	136
Product type (plate or pipe)	P	T, P
Transfer mode	-	-
Type of weld	FW	FW
Parent material group(s)/subgroups	1.1	-
Filler material group(s)	FM1	FM1, FM2
Filler material (Designation)	P	R, P, V, W, Y, Z
Shielding gas	M21	-
Auxiliaries	-	-
Type of current and polarity	DC/+	DC/+
Material thickness [mm]	10.0	≥ 3.0
Deposited thickness [mm]	-	-
Outside pipe diameter [mm]	-	≥ 75.0
Welding position	PB	PA, PB
Weld details	ml	sl, ml

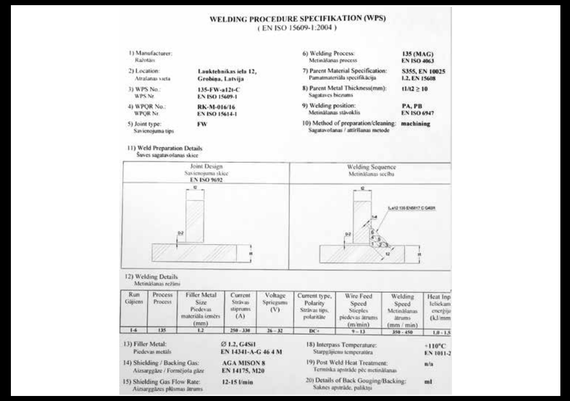
Examining Body:
CERTIFICATION CENTRE Ltd
SPECIALIST CERTIFICATION CENTRE
Location: Aptiekas street 150b, Riga

Type of qualification test	Performed and accepted	Not tested
Visual testing (FW)	X	-
Ultrasonic testing	-	X
Fracture test (FW)	X	-
Bend test	-	X
Notch tensile test	-	X
Macroscopic examination	-	X

Date of issue: 10.05.2021
Name, Surname and Signature of Surveyor: Qualified by SC 2518 A.Sauītis
Date of Welding: 03.05.2021

Revalidation 9.3 a)	Valid until: 02.05.2024	Revalidation 9.3 b)	-	Revalidation 9.3 c)	-

Project: **Production of various complex metal structures**
City: **Grobiņa, Latvia**
Year: **2020**
Type of welding: **135**
Welding position: **PA; PB; PF**



WELDING PROCEDURE SPECIFIKATION (WPS)
(EN ISO 15609-1:2004)

1) Manufacturer: Ražotājs		6) Welding Process: Metināšanas process	135 (MAG) EN ISO 4063
2) Location: Atrašanas vieta	Lauktehnikas iela 12, Grobiņa, Latvija	7) Parent Material Specification: Pamatmateriāla specifikācija	S355, EN 10025 1.2, EN 15608
3) WPS No.: WPS Nr	135-FW-n12t-C EN ISO 15609-1	8) Parent Metal Thickness(mm): Sagataves biezums	t1/t2 ≥ 10
4) WPQR No.: WPQR Nr	RK-M-016/16 EN ISO 15614-1	9) Welding position: Metināšanas stāvoklis	PA, PB EN ISO 6947
5) Joint type: Savienojuma tips	FW	10) Method of preparation/cleaning: Sagatavošanas / attīrīšanas metode	machining

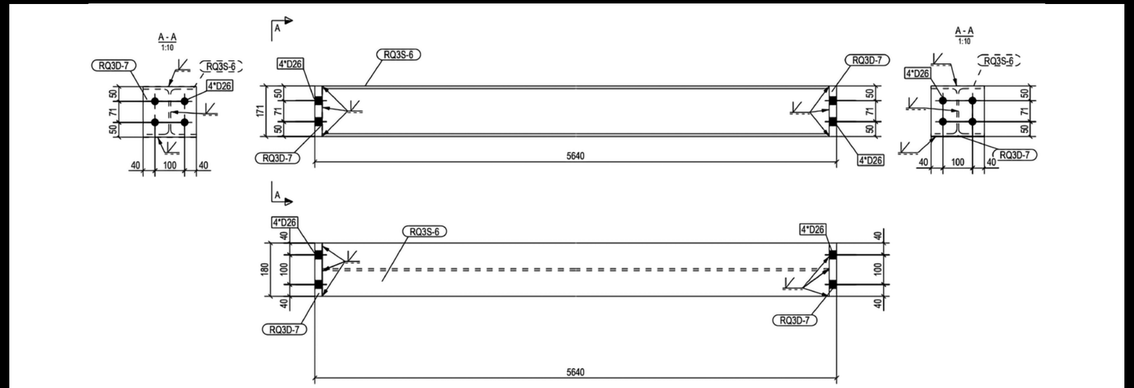
11) Weld Preparation Details
Šuves sagatavošanas skice

Joint Design Savienojuma skice EN ISO 9692	Welding Sequence Metināšanas secība

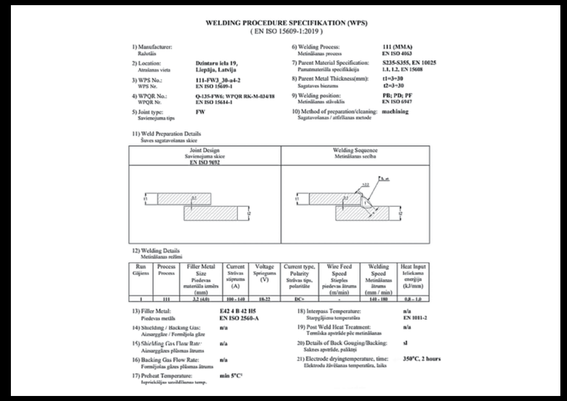
12) Welding Details
Metināšanas režīms

Run Gājiens	Process Process	Filler Metal Size Piedevas materiāla izmērs (mm)	Current Strāvas stiprums (A)	Voltage Spriegums (V)	Current type, Polarity Strāvas tips, polaritāte	Wire Feed Speed Stieples piedevas ātrums (m/min)	Welding Speed Metināšanas ātrums (mm / min)	Heat Inp Ielikt enerģij (kJ/mm
1-n	135	1.2	250 - 320	26 - 32	DC+	7 - 13	350 - 450	1.0 - 1.5

13) Filler Metal: Piedevas metāls	Ø 1.2, G4Si1 EN 14341-A-G 46 4 M
14) Shielding / Backing Gas: Aizsarggāze / Formējošā gāze	AGA MISON 8 EN 14175, M20
15) Shielding Gas Flow Rate: Aizsarggāzes plūsmas ātrums	12-15 l/min
18) Interpass Temperature: Starpslāņiņa temperatūra	< 110°C EN 1011-2
19) Post Weld Heat Treatment: Termiska apstrāde pēc metināšanas	n/a
20) Details of Back Gouging/Backing: Saknes apstrāde; palīklis	nil



Project: **Welding and assembling of metal construction**
City: **Borlänge, Sweden**
Year: **2020**
Type of welding: **111**
Welding position: **PB; PA; PD**



WELDING PROCEDURE SPECIFIKATION (WPS)
(EN ISO 15609-1:2019)

1) Manufacturer: Ražotājs		6) Welding Process: Metināšanas process	111 (MMA) EN ISO 4063
2) Location: Atrašanas vieta	Dzintara iela 19, Liepāja, Latvija	7) Parent Material Specification: Pamatmateriāla specifikācija	S235-S355, EN 10025 1,4, 1.2, EN 15608
3) WPS No.: WPS No.	111-FW3_30-ok2 EN ISO 15609-1	8) Parent Metal Thickness(mm): Sagataves biezums	t1=3÷30 t2=3÷30
4) WPQR No.: WPQR No.	Q-135-FW6; WPQR RK-M-024/18 EN ISO 15614-1	9) Welding position: Metināšanas ailes/dēlis	PB; PD; PF EN ISO 6947
5) Joint type: Savienojuma tips	FW	10) Method of preparation/cleaning: Sagatavošanas / attīrīšanas metode	machining

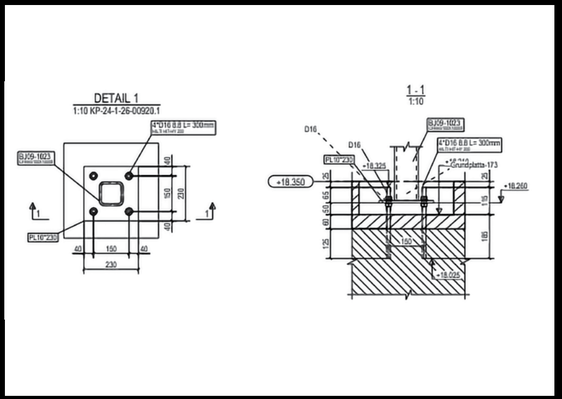
11) Weld Preparation Details
Šuves sagatavošanas skice

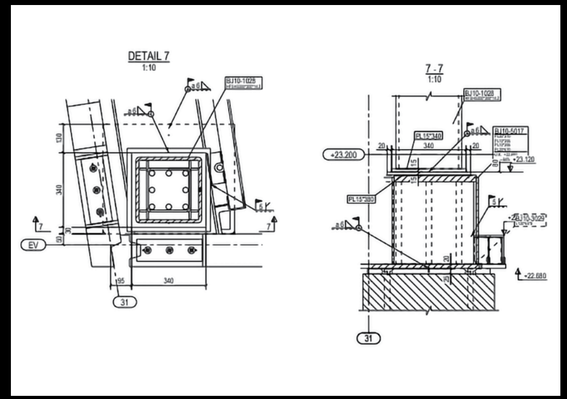
Joint Design Savienojuma skice EN ISO 5692	Welding Sequence Metināšanas secība

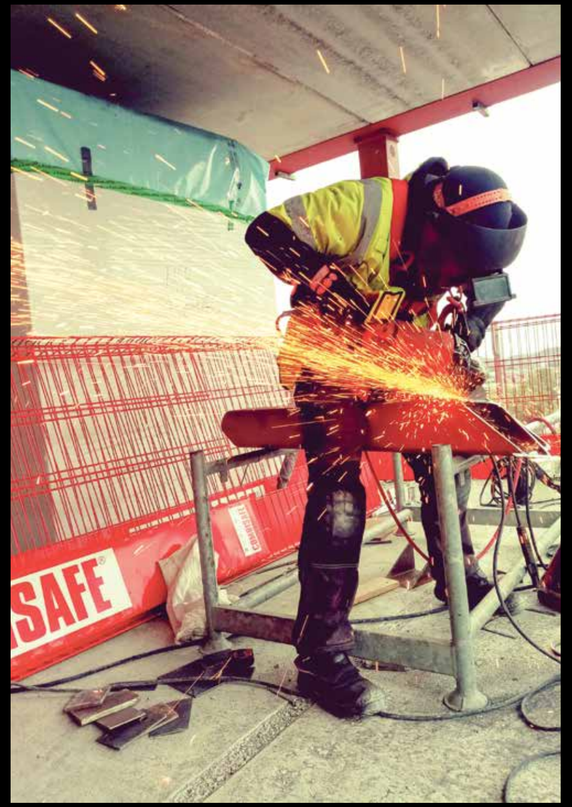
12) Welding Details
Metināšanas režīms

Run Gājiens	Process Process	Filler Metal Size Piedevas materiāla izmērs (mm)	Current Strāvas stiprums (A)	Voltage Spriegums (V)	Current type, Polarity Strāvas tips, polaritāte	Wire Feed Speed Stieņa piedeves ātrums (m/min)	Welding Speed Metināšanas ātrums (mm / min)	Heat Input Ietvarsiesu enerģija (kJ/mm)
1	111	3,2 (4,0)	100 - 110	19-22	DC+		140 - 180	0,8 - 1,0

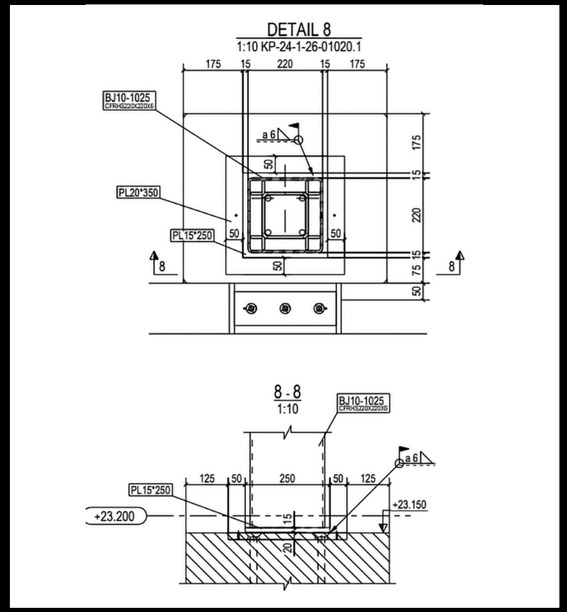
13) Filler Metal: Piedeves metāls	E42 4 B 42 H5 EN ISO 2560-A	18) Interpass Temperature: Starpplūsmu temperatūra	n/a EN 1011-2
14) Shielding / Backing Gas: Aizsarggāze / Formējošā gāze	n/a	19) Post Weld Heat Treatment: Termiskā apstrāde pēc metināšanas	n/a
15) Shielding Gas Flow Rate: Aizsarggāzes plūsmas ātrums	n/a	20) Details of Back Gouging/Backing: Saknes apstrāde, polēšana	sl
16) Backing Gas Flow Rate: Formējošās gāzes plūsmas ātrums	n/a	21) Electrode dryingtemperature, time: Elektrodu žāvēšanas temperatūra, laiks	350°C, 2 hours
17) Preheat Temperature: Sagatavošanas uzsildīšanas temp.	min 5°C°		

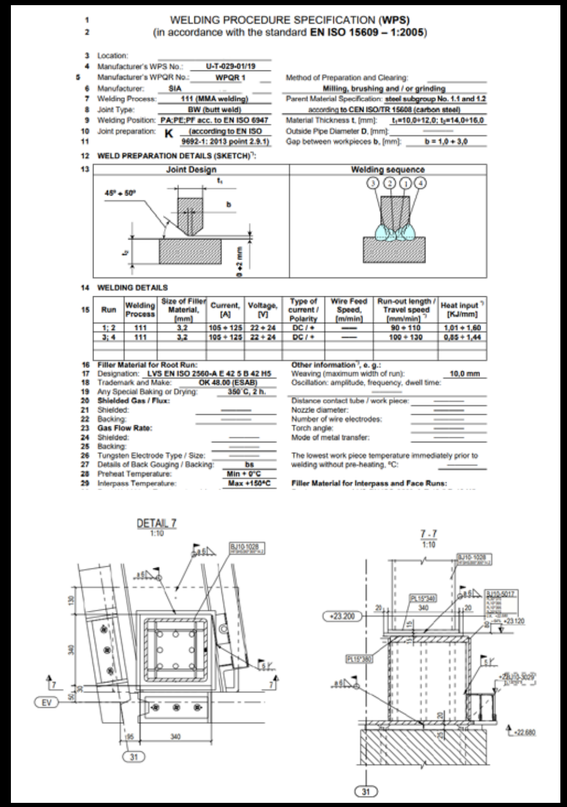


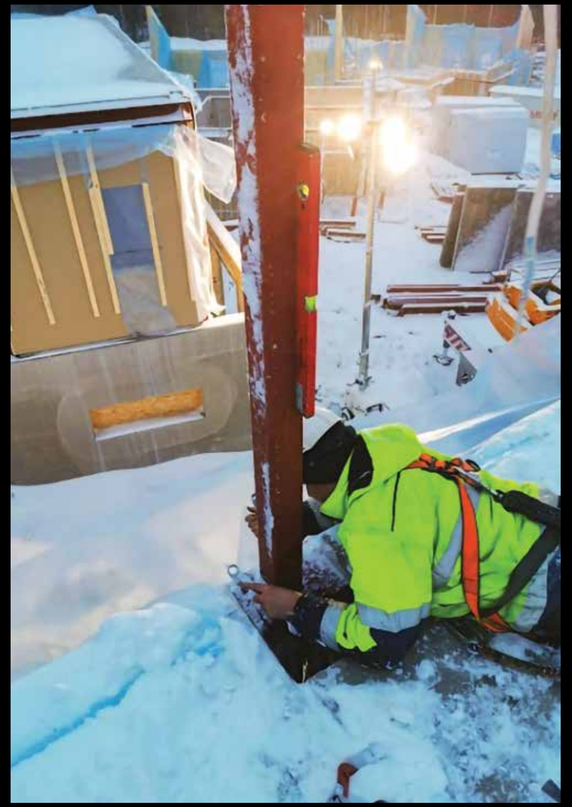




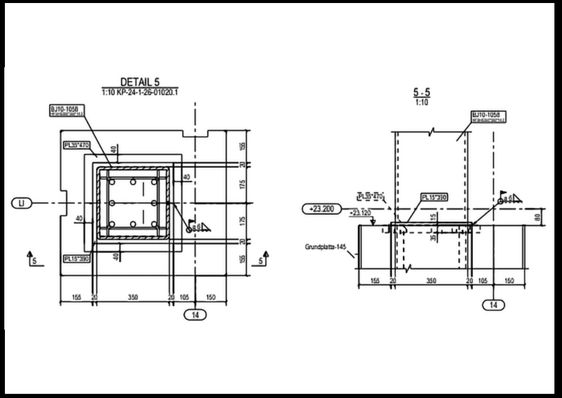
Project: **Welding and assembling of metal constructions / Hotel**
City: **Göteborg, Sweden**
Year: **2020**
Type of welding: **111**
Welding position: **PB; PA; PD; PC**

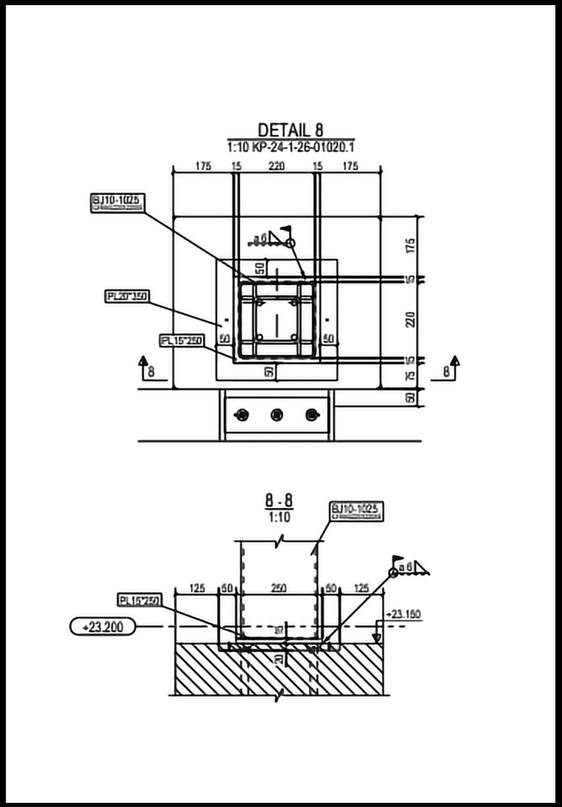




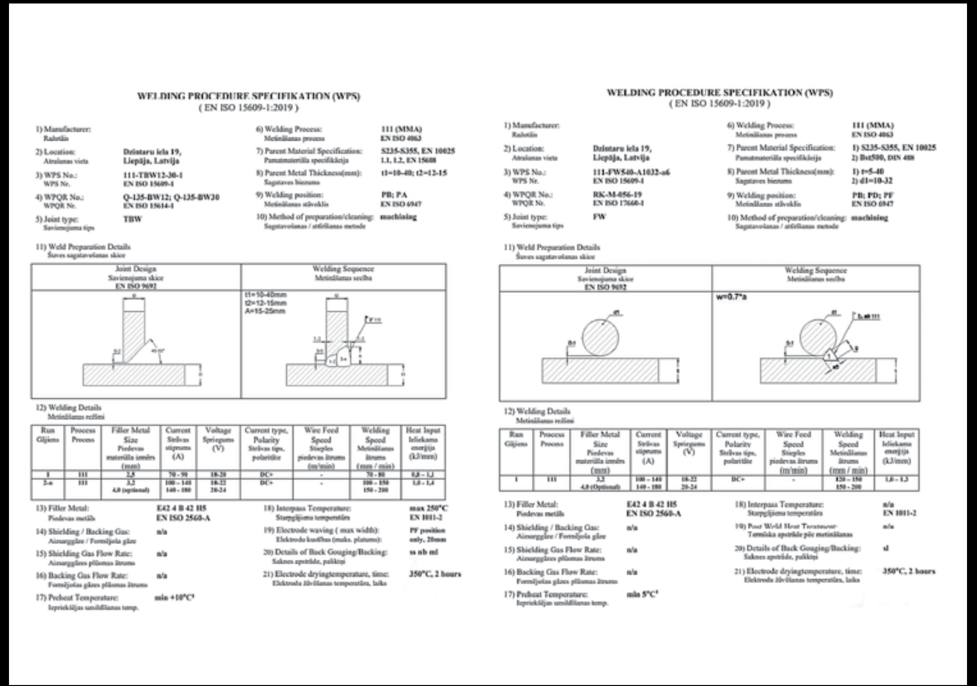


Project: **Civil engineering project building houses / Skiing resort**
City: **Sälen, Sweden**
Year: **2020**
Type of welding: **111**
Welding position: **PB; PA; PD**

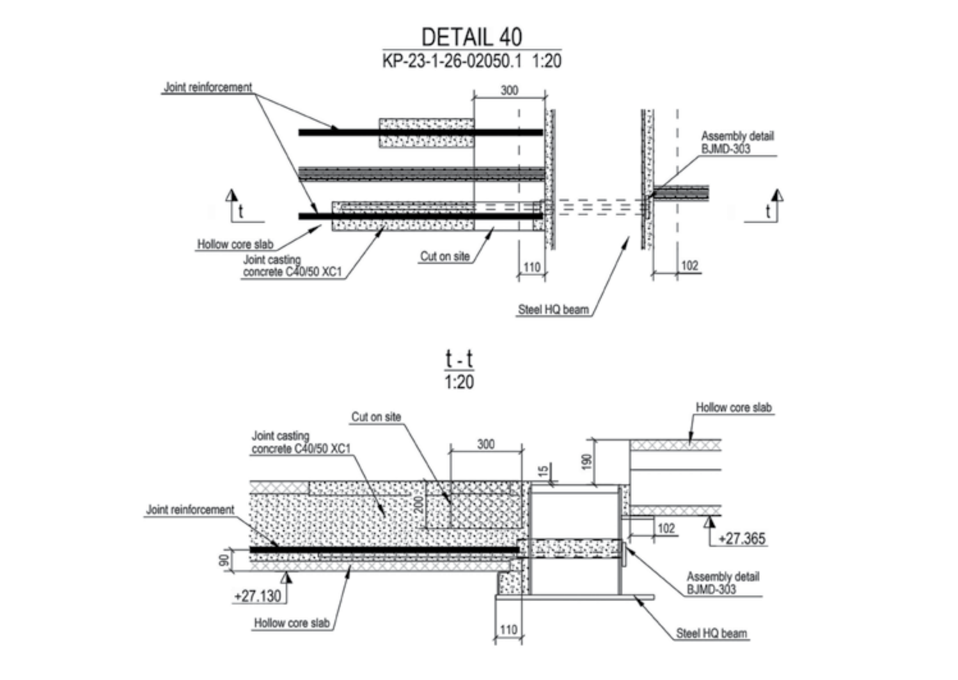


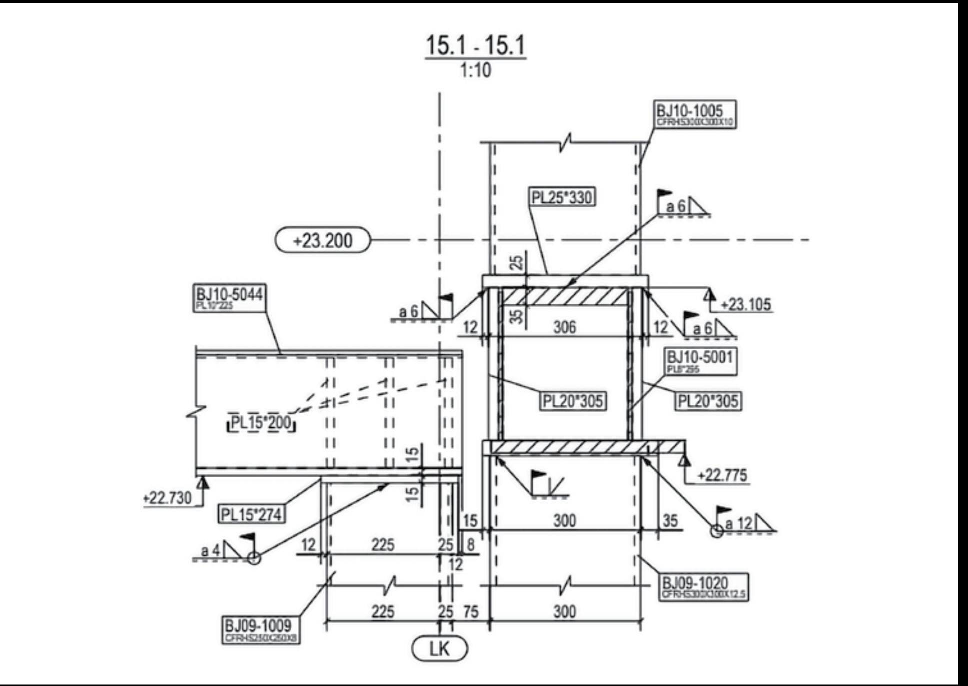


Project: **Welding and assembling of metal constructions**
City: **Stocholm, Sweden**
Year: **2020**
Type of welding: **111**
Welding position: **PB; PC; PD**

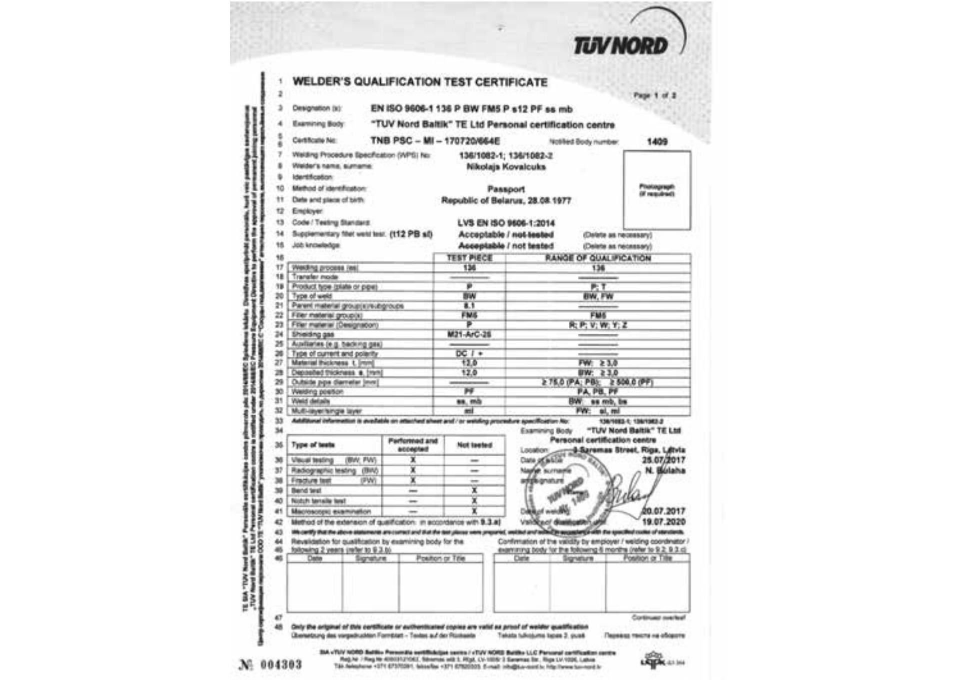

WELDING PROCEDURE SPECIFIKATION (WPS)
(EN ISO 15609-1:2019)

WELDING PROCEDURE SPECIFIKATION (WPS)
(EN ISO 15609-1:2019)





Project: **Production of vessel**
City: **Helsingborg, Sweden**
Year: **2020**
Type of welding: **136/141**
Welding position: **PB; PF; PC**



TÜV NORD

WELDER'S QUALIFICATION TEST CERTIFICATE

Page 1 of 2

Designation (s): **EN ISO 9606-1 136 P BW FM5 P s12 PF ss mb**
Examining Body: **"TUV Nord Baltik" TE Ltd Personal certification centre**
Certificate No: **TNB PSC – MI – 170720/664E** Notified Body number: **1409**
Welding Procedure Specification (WPS) No: **136/1082-1; 136/1082-2**
Welder's name, surname: **Nikolajs Kovalcuks**
Identification:
Method of identification: **Passport**
Date and place of birth: **Republic of Belarus, 28.08.1977**
Employer:
Code / Testing Standard: **LVS EN ISO 9606-1:2014**
Supplementary fillet weld test: **(t12 PB sl)** **Acceptable / not tested** (Delete as necessary)
Job knowledge: **Acceptable / not tested** (Delete as necessary)

Photograph (if required)

	TEST PIECE	RANGE OF QUALIFICATION
Welding process (es)	136	136
Transfer mode	———	———
Product type (plate or pipe)	P	P; T
Type of weld	BW	BW, FW
Parent material group(s)/subgroups	8.1	———
Filler material group(s)	FM5	FM5
Filler material (Designation)	P	R; P; V; W; Y; Z
Shielding gas	M21-ArC-28	———
Auxiliaries (e.g. backing gas)	———	———
Type of current and polarity	DC / +	———
Material thickness t, [mm]	12,0	FW: ≥ 3,0
Deposited thickness s, [mm]	12,0	BW: ≥ 3,0
Outside pipe diameter [mm]	———	≥ 75,0 (PA; PB); ≥ 500,0 (PF)
Welding position	PF	PA, PB, PF
Weld details	ss, mb	BW: ss mb, bs
Multi-layer/single layer	ml	FW: sl, ml

Additional information is available on attached sheet and / or welding procedure specification No: 136/1082-1; 136/1082-2

Type of tests	Performed and accepted	Not tested
Visual testing (BW; FW)	X	—
Radiographic testing (BW)	X	—
Fracture test (FW)	X	—
Bend test	—	X
Notch tensile test	—	X
Macroscopic examination	—	X

Examining Body: **"TUV Nord Baltik" TE Ltd Personal certification centre**
Location: **3 Saremas Street, Riga, Latvia**
Date of issue: **25.07.2017**
Name, surname and signature: **N. Bulaha**
Date of welding: **20.07.2017**
Validity of qualification until: **19.07.2020**

Method of the extension of qualification: in accordance with **9.3.a)**

We certify that the above statements are correct and that the test pieces were prepared, welded and tested in accordance with the specified codes of standards.

Revalidation for qualification by examining body for the following 2 years (refer to 9.3.b)

Date	Signature	Position or Title

Confirmation of the validity by employer / welding coordinator / examining body for the following 6 months (refer to 9.2; 9.3.c)

Date	Signature	Position or Title

Continued overleaf

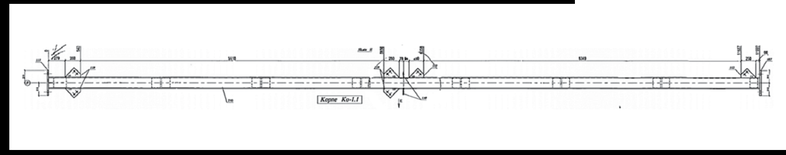
Only the original of this certificate or authenticated copies are valid as proof of welder qualification

Übersetzung des vorgedruckten Formblatt - Textes auf der Rückseite | Teksta tulkojums lapas 2. pusē | Перевод текста на обороте

№ 004303

SIA «TUV NORD Baltik» Personāla sertifikācijas centrs / «TUV NORD Baltik» LLC Personal certification centre

Project: **Welding of metal constructions**
City: **Tråvad, Sweden**
Year: **2019 – present**
Type of welding: **135/138**
Welding position: **PA; PB; PC**



TÜV NORD

WELDER'S QUALIFICATION TEST CERTIFICATE

Page 1 of 2

Designation (s):	EN ISO 9606-1 135 P BW FM1 S s10 PF ss nb	
Examining Body:	"TUV Nord Baltik" TE Ltd Personal certification centre	
Certificate No:	TNB PSC – MI – 161216/1298E	Notified Body number: 1409
Welding Procedure Specification (WPS) No:	WPS 135-004	
Welder's name, surname:	Arturs Bagirskis	
Identification:	Passport	
Method of identification:		
Date and place of birth:	Latvia, Bauska, 22.01.1986	
Employer:		
Code / Testing Standard:	LVS EN ISO 9606-1:2014	
Supplementary Weld weld test:	Acceptable / not acceptable (Delete as necessary)	
Job knowledge:	Acceptable / not tested (Delete as necessary)	

Photograph (if required)

	TEST PIECE	RANGE OF QUALIFICATION
Welding process (no.):	135	135
Transfer mode:	D (short-circuit)	D (short-circuit), S (spray arc transfer), Y (spray)
Product type (plate or pipe):	P	P
Type of weld:	BW	BW
Parent material group(s)/n.g/type:	4.1	
Filler material group(s):	FM1	FM1, FM2
Filler material (Designation):		S, M
Shielding gas:	Z-ArC+H/O-18/0.03	
Backing/no (e.g. backing gas):	—	—
Type of current and polarity:	DC / +	
Material thickness t, [mm]:	10,0	
Deposited thickness, s, [mm]:	10,0	3,0 ÷ 20,0
Outside pipe diameter [mm]:	—	≥ 75,0 (PA), ≥ 500,0 (PF)
Welding position:	PF	PA, PF
Weld details:	ss, nb	ss nb, ss mb, bs, ss gb, ss fb
Multi-pass/single layer:	mi	

Additional information is available on attached sheet and / or welding procedure specification No: WPS 135-004

Type of tests	Performed and accepted	Not tested
Visual testing	X	—
Ultrasonic testing	X	—
Fracture test	—	X
Bend test	—	X
Notch tensile test	—	X
Macroscopic examination	X	—

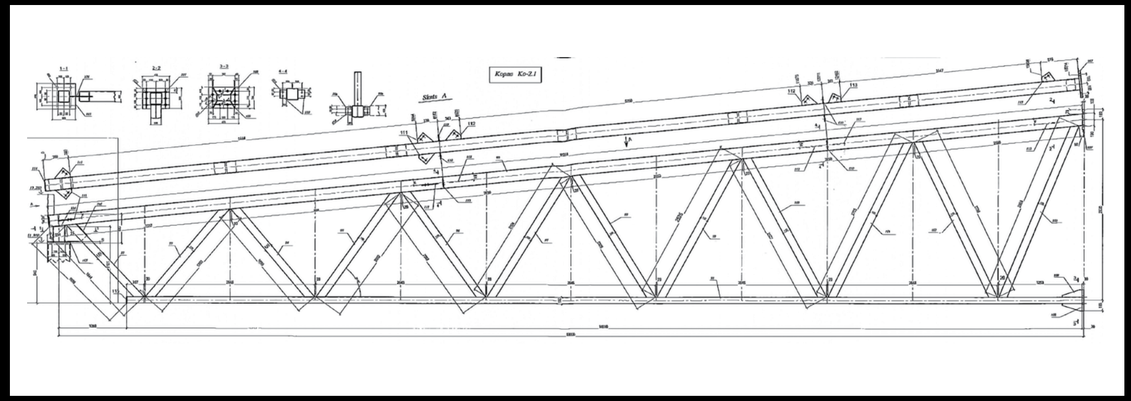
Examining Body: "TUV Nord Baltik" TE Ltd
Location: 3, Skanstes Street, Riga, Latvia
Date of issue: 28.12.2020
Name, surname: T. Filipova
Date of welding test: 16.12.2020
Validity of qualification until: 15.12.2023

Method of the extension of qualification: in accordance with 9.3 a)

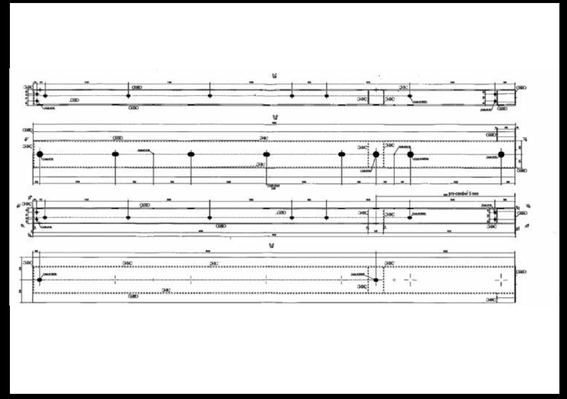
We certify that the above statements are correct and that the test pieces were prepared, welded and tested in accordance with the specified codes of standards.

Revalidation for qualification by examining body for the following 2 years (WQ to 9.3 b):

Confirmation of the validity by employer / welding coordinator / examining body (a to following 6 months (WM to 9.3 c):



Project: **Loaders and unloaders structures**
City: **Kvänum, Sweden**
Year: **2019 – present**
Type of welding: **135/138**
Welding position: **PA; PF; PB**



EN ISO/IEC 17024:2012 S3-476

"Certification Centre" Ltd
SPECIALIST CERTIFICATION CENTRE
WELDER QUALIFICATION TEST CERTIFICATE

Page 1 of 2

Designation (s):	EN ISO 9606-1 135 P BW FM1 S s12.0 PF ss nb EN 9606-1 135 P FW FM1 S s10 PB sl	
Certificate No:	SC – M – 0229/2021	
Welding Procedure Specification No:	135-9; 135-1	
Welder's name, surname:	Vjačeslavs Stankevičs	
Identification:		Welder's photograph (if required)
Method of identification:	PASSPORT	
Date and place of birth:	Latvia, 15.10.1978	
Employer:	"VLAVI SWE" Ltd.	
Testing Standard/ Code:	EN ISO 9606-1: 2017	
Job knowledge:	Acceptable/ not tested	(Delete as necessary)
Extra verification for fillet welds:	Yes / No	(Delete as necessary)

	TEST PIECE	RANGE OF QUALIFICATION
Welding process (es)	135	135, 138
Product type (plate or pipe)	P	P
Transfer mode	short	all
Type of weld	BW; FW	BW; FW
Parent material group(s)/subgroups	1.2	-
Filler material group(s)	FM1	FM1; FM2
Filler material (Designation)	S	S, M
Shielding gas	M21	-
Auxiliaries	-	-
Type of current and polarity	DC/+	DC/+
Material thickness [mm]	12.0 (BW); 10.0 (FW)	≥ 3.0
Deposited thickness [mm]	-	-
Outside pipe diameter [mm]	-	-
Welding position	PF (BW); PB (FW)	PA, PB, PF
Weld details	ss nb	BW: ss nb, ss mb, bs, ss gb, ss fb FW: sl; ml

Examining Body:
CERTIFICATION CENTRE Ltd
SPECIALIST CERTIFICATION CENTRE
Location: Aptiekas street 17A, Riga

Type of qualification test	Performed and accepted	Not tested
Visual testing (BW, FW)	X	-
Ultrasonic testing (BW)	X	-
Fracture test (FW)	X	-
Bend test (BW)	X	-
Notch tensile test	-	X
Macroscopic examination	-	X

Date of issue: 07.05.2021
Name, Surname and Signature of Surveyor: A.Saulītis
Date of Welding: 03.05.2021

Revalidation 9.3 a)	Valid until: 02.05.2024	Revalidation 9.3 b)	-	Revalidation 9.3 c)	-

Prolongation for qualification by examining body for the following years

Confirmation of the validity by employer / welding coordinator for the following 6 months

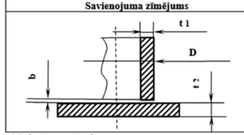
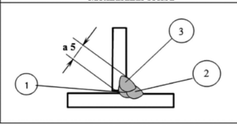
Project: **Conveyor feeder**
City: **Kvänum, Sweden**
Year: **2019 – present**
Type of welding: **135/138/136**
Welding position: **PB; PC**

METINĀŠANAS PROCESA SPECIFIKĀCIJA (WPS)

(saskaņā ar standartu **LVS EN ISO 15609-1:2005**)

Atrašanās vieta:	**Meža iela 7, Riga, Latvija**	Eksaminētājs vai eksaminācijas institūcija:	**speciālists ar EWS kvalifikāciju**
Ražotāja metināšanas process:	**WPS 135-027/11**		
WPQR:	**WPQR-BUTS-016/07**	Iepriekšējās sagatavošanas un attīrīšanas veids:	**Lāzergriešana, slīpēšana ar slīpdisku**
Ražotājs:	**VLAVI SWE**		
Metināšanas process:	**135 (MAG-metināšana)**	Pamatmateriāla specifikācija: **Grupa 1 (S355J2HN)**	
Savienojuma veids:	**FW**		**Apakšgrupa 1.2 CEN ISO/TR 15608**
Metināšanas stāvoklis	**PB**	Sagataves biezums **t**, mm:	**t1 =6,3; t2 =8,0**
Malu apstrādes veids:	**(saskaņā ar LVS EN ISO 9692-1:2004 punktu 3.1.1)**	Caurules ārējais diametrs **D**, mm:	**60,3**
		Atstarpe starp detaļām **b**, mm:	

ŠUVES SAGATAVOŠANAS ELEMENTI (SKICE)[7]:

Savienojuma zīmējums	Metināšanas secība
	

Metināšanas režīmi

Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Spriegums [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums[8]	Siltuma enerģija uz garuma vienību[9] [KJ/mm]
1	**135**	**1,0**	**220-230**	**26,3-26,8**	**DC(+)**	**12,0-12,4**	———	———
2	**135**	**1,0**	**220-230**	**26,3-26,8**	**DC(+)**	**12,0-12,4**	———	———
3	**135**	**1,0**	**220-230**	**26,3-26,8**	**DC(+)**	**12,0-12,4**	———	———

Piedevas metāla apzīmējums un tirdzniecības nosaukums: **G3Si1 EN ISO 14341 OK AristoRod 12.50**

Jebkura speciāla karsēšana vai žāvēšana: ———

Gāze / kušņi:

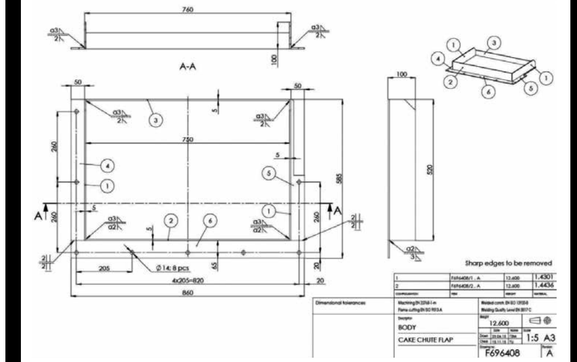
Aizsargāšana no virspuses: **MISON®25(AGA) M21+0,03NO EN ISO 14175**

Cita informācija[7], piem.: ———

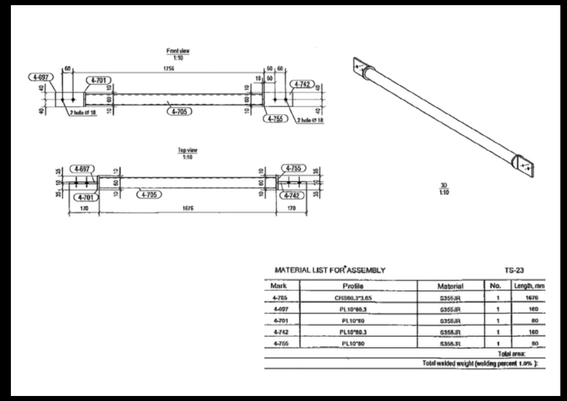
Šķērskustība (maksimālais gājiena platums): ———

Svārstības: amplitūda, frekvence, pārtraukuma laiks: ———

Impulsa metināšanas elementi: ———



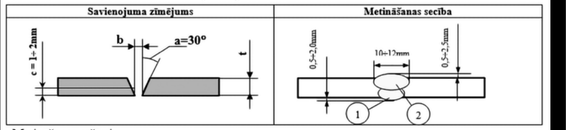
Project: **Belt conveyors**
City: **Kvänum, Sweden**
Year: **2019 – present**
Type of welding: **135/138**
Welding position: **PA; PB; PF**



Atrašanās vieta: **Meža ielā 7, Rīga, Latvija**
Ražotāja metināšanas process: **WPS 135-029/11**
WPQR: **WPQR-BUTS-019/08**
Ražotajs: **SIA "VLAVI SWE"**
Metināšanas process: **135**
Savienojuma veids: **BW**
Metināšanas stāvoklis **PC**
Malu apstrādes veids: **V (saskaņā ar LVS EN ISO 9692-1:2004 punktu 1.5)**

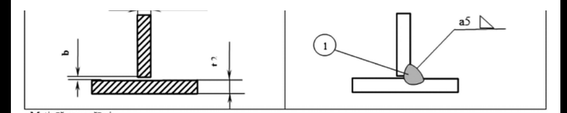
Eksaminētājs vai eksaminācijas institūcija: **speciālists ar EWS kvalifikāciju**
Iepriekšējās sagatavošanas un attīrīšanas veids: **frēzēšana, slīpēšana**
Pamatmateriāla specifikācija: **Grupa 1 (Cr.3 cn)**
Apakšgrupa 1.1 LVS CEN ISO/TR 15608:2006
Sagataves biezums **t**, mm: **4,0**
Caurules ārējais diametrs **D**, mm: ——
Atstarpe starp detaļām **b**, mm: **~ t**

ŠUVES SAGATAVOŠANAS ELEMENTI (SKICE)*:



Metināšanas režīmi

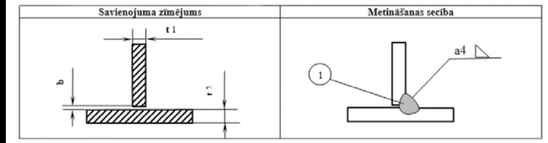
Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Spriegums [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums*)	Siltuma enerģija uz garuma vienību*) [KJ/mm]
1	135	1.0	90..110	16..18	DC(+)	3.0..5.0	——	——

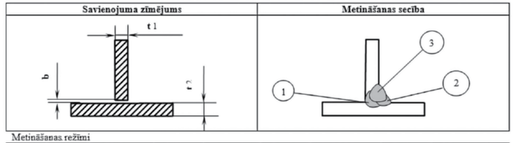


Metināšanas režīmi

Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Spriegums [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums*)	Siltuma enerģija uz garuma vienību*) [KJ/mm]
1	135	1,2	220-230	20 -24	DC(+)	7,0-10,0	——	——

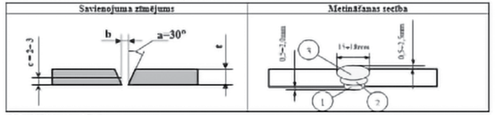
Project: **Conveyor bridges**
City: **Kvänum, Sweden**
Year: **2019 – present**
Type of welding: **135/138**
Welding position: **PA; PB; PD**





Metināšanas režīmi

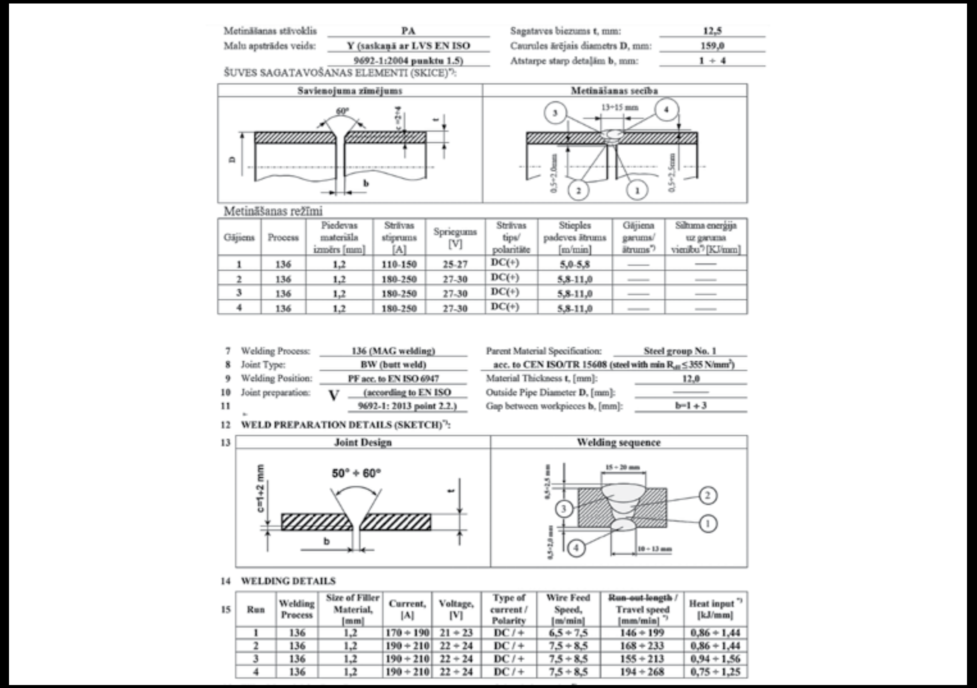
Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Spriegums [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums*	Siltuma enerģija uz garuma vienību* [KJ/mm]
1	135	1,0	220-230	26,3-26,8	DC(+)	12,0-12,4	——	——
1	135	1,0	220-230	26,3-26,8	DC(+)	12,0-12,4	——	——
1	135	1,0	220-230	26,3-26,8	DC(+)	12,0-12,4	——	——

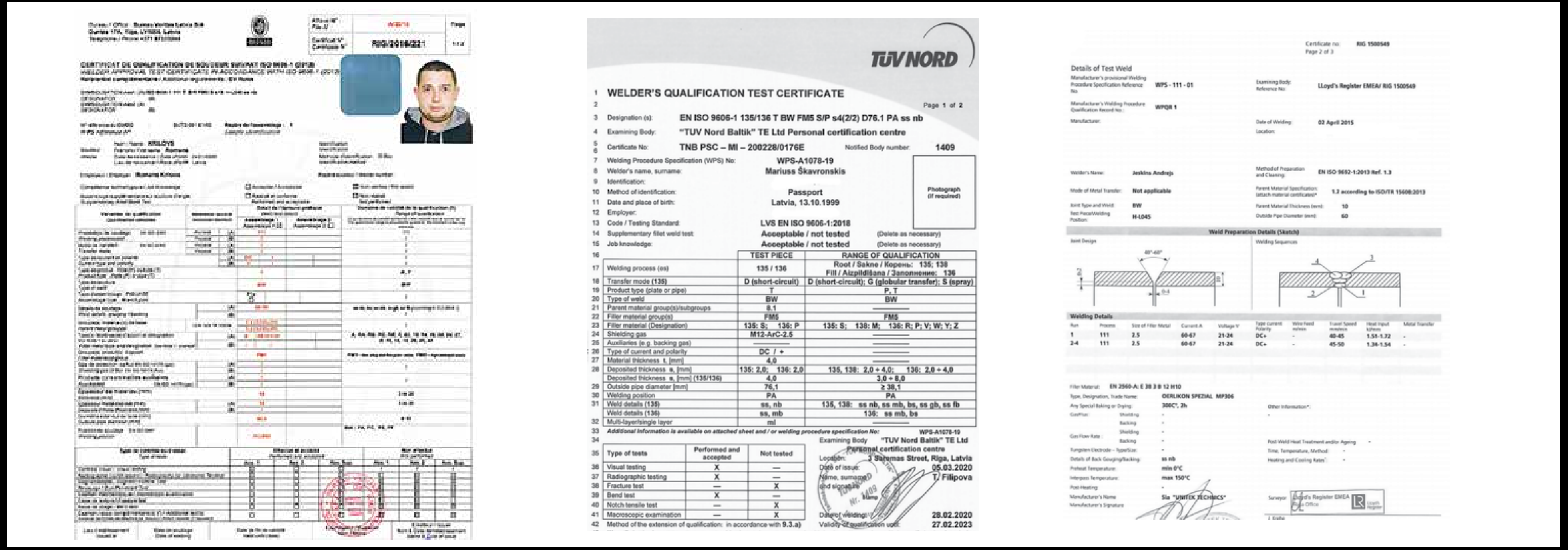


Metināšanas režīmi

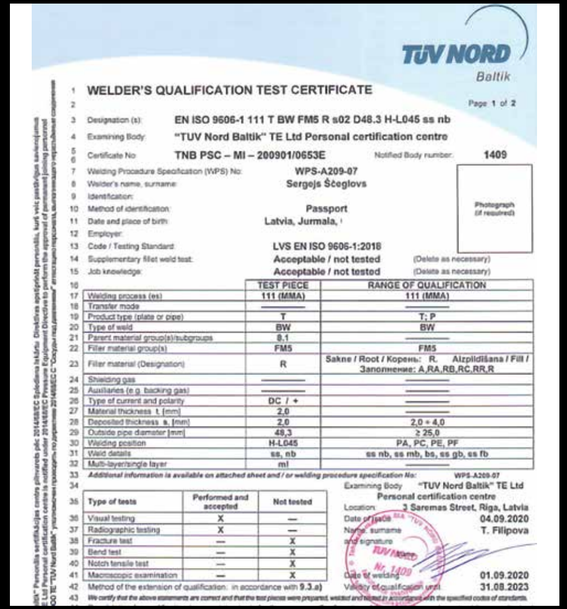
Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Spriegums [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums*	Siltuma enerģija uz garuma vienību* [KJ/mm]
1	135	1,0	90-110	16-18	DC(+)	3,0-5,0	——	——
2	135	1,0	130-160	18-21	DC(+)	4,0-7,0	——	——
3	135	1,0	130-160	18-21	DC(+)	4,0-7,0	——	——

Project: **Shipbuilding**
City: **Rostock, Germany**
Year: **2019 – 2020**
Type of welding: **136/138/111**
Welding position: **PA; PB; PD; PF**





Project: **Oil refinery factory**
City: **Lysekil, Sweden**
Year: **2019**
Type of welding: **141/111**
Welding position: **HL045; PC; PH**



TÜV NORD Baltik

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WELDER'S QUALIFICATION TEST CERTIFICATE

Designation (s):	EN ISO 9606-1 111 T BW FM5 R s02 D48.3 H-L045 ss nb
Examining Body:	"TUV Nord Baltik" TE Ltd Personal certification centre
Certificate No:	TNB PSC – MI – 200901/0653E Notified Body number: 1409
Welding Procedure Specification (WPS) No:	WPS-A209-07
Welder's name, surname:	Sergejs Šceglovs
Identification:	
Method of identification:	Passport
Date and place of birth:	Latvia, Jurmala,
Employer:	
Code / Testing Standard:	LVS EN ISO 9606-1:2018
Supplementary fillet weld test:	Acceptable / not tested (Delete as necessary)
Job knowledge:	Acceptable / not tested (Delete as necessary)

Photograph (if required)

	TEST PIECE	RANGE OF QUALIFICATION
Welding process (es)	111 (MMA)	111 (MMA)
Transfer mode	———	———
Product type (plate or pipe)	T	T; P
Type of weld	BW	BW
Parent material group(s)/subgroups	8.1	———
Filler material group(s)	FM5	FM5
Filler material (Designation)	R	Sakne / Root / Корень: R. Aizpildīšana / Fill / Заполнение: A,RA,RB,RC,RR,R
Shielding gas	———	———
Auxiliaries (e.g. backing gas)	———	———
Type of current and polarity	DC / +	———
Material thickness t [mm]	2,0	———
Deposited thickness a, [mm]	2,0	2,0 ÷ 4,0
Outside pipe diameter [mm]	48,3	≥ 25,0
Welding position	H-L045	PA, PC, PE, PF
Weld details	ss, nb	ss nb, ss mb, bs, ss gb, ss fb
Multi-layer/single layer	ml	———

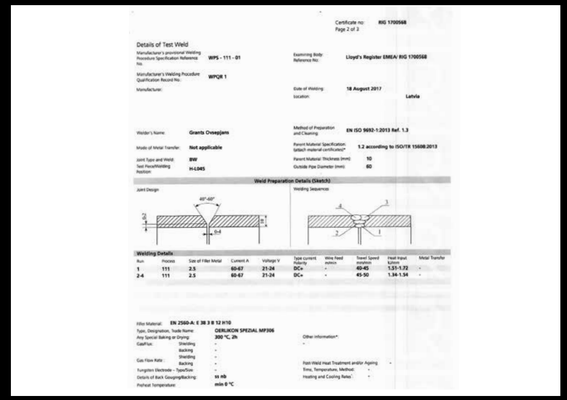
Additional information is available on attached sheet and / or welding procedure specification No: WPS-A209-07

Type of tests	Performed and accepted	Not tested
Visual testing	X	—
Radiographic testing	X	—
Fracture test	—	X
Bend test	—	X
Notch tensile test	—	X
Macroscopic examination	—	X

Method of the extension of qualification: in accordance with 9.3.a)

We certify that the above statements are correct and that the test pieces were prepared, welded and tested in accordance with the specified codes of standards.

Examining Body: "TUV Nord Baltik" TE Ltd Personal certification centre
Location: 3 Saremas Street, Riga, Latvia
Date of issue: 04.09.2020
Name, surname and signature: T. Filipova
Date of welding: 01.09.2020
Validity of qualification until: 31.08.2023



Certificate no: RIG 1700568
Page 2 of 2

Details of Test Weld

Manufacturer's provisional Welding Procedure Specification Reference No.:	WPS - 111 - 01
Manufacturer's Welding Procedure Qualification Record No.:	WPQR 1
Manufacturer:	
Examining Body: Reference No.	Lloyd's Register EMEA/ RIG 1700568
Date of Welding:	18 August 2017
Location:	Latvia
Welder's Name:	Grants Ovseyjans
Mode of Metal Transfer:	Not applicable
Joint Type and Weld Run/Positions/Welding Position:	BW H-L045
Method of Preparation and Cleaning:	EN ISO 9692-1:2013 Ref. 1.3
Parent Material Specification: Attach material certificates*	1.2 according to ISO/TR 15608:2013
Parent Material: Thickness (mm)	10
Outside Pipe Diameter (mm)	60

Weld Preparation Details (Sketch)

Joint Design

Welding Sequence

Welding Details

Run	Process	Size of Filler Metal	Current: A	Voltage: V	Type current: AC or DC	Wire Feed Speed: m/min	Travel Speed: cm/min	Heat Input: kJ/mm	Metal Transfer
1	111	2.5	60-67	21-24	DC+	-	40-45	1.37-1.72	-
2-4	111	2.5	60-67	21-24	DC+	-	45-50	1.34-1.54	-

Filler Material: EN 2560-A: E 38 3 B 12 H10

Type, Designation, Trade Name: OERLIKON SPEZIAL MP306

Any Special Baking or Drying: 300 °C, 2h

Other information*: -

Cast/Lot: -

Shielding: -

Baking: -

Gas Flow Rate: Shielding: -

Backing: -

Tungsten Electrode - Type/Size: -

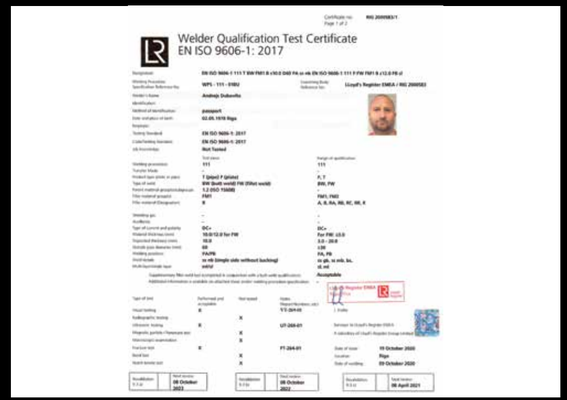
Nature of Back Gouging/Backing: ss nb

Preheat Temperature: min 0 °C

Post-Weld Heat Treatment and/or Ageing: -

Time, Temperature, Method: -

Heating and Cooling Rate: -



Certificate no: RIG 2009583/1
Page 1 of 2

Welder Qualification Test Certificate
EN ISO 9606-1: 2017

Welding Procedure Specification Reference No.:	WPS - 111 - 01B1
Examining Body: Reference No.:	Lloyd's Register EMEA / RIG 2000583
Welder's Name:	Andrejs Dubovitu
Identification:	
Method of Identification:	passport
Date and place of birth:	02.05.1970 Riga
Nationality:	
Testing Standard:	EN ISO 9606-1: 2017
Code/Testing Standard:	EN ISO 9606-1: 2017
Job Knowledge:	Not Tested
Welding process(es):	111
Transfer Mode:	-
Product type (plate or pipe):	T (plate) T (pipe)
Type of weld:	BW (butt weld) FW (Fillet weld)
Parent material group(s)/subgroups:	1.2 ISO 15608
Filler material group(s):	FM5
Filler material (Designation):	R
Welding gas:	-
Backing:	-
Type of current and polarity:	DC+
Material thickness t (mm):	10 (12.0 for FW
Deposited thickness (mm):	10.0
Outside pipe diameter (mm):	60
Welding position:	PA/PB
Weld details:	ss nb (single side without backing)
Multi-layer/single layer:	mlml

Range of qualification

Test piece	111
Transfer Mode	-
Product type	T; T
Type of weld	BW; FW
Parent material group(s)/subgroups	1.2
Filler material group(s)	FM5; FM5
Filler material (Designation)	R	A, R, RA, RB, RC, RR, R
Welding gas	-
Backing	-
Type of current and polarity	DC+
Material thickness t (mm)	For FW: ≥3.0 10.0 - 20.0
Deposited thickness (mm)	≤30
Outside pipe diameter (mm)	≥60
Welding position	PA, PB
Weld details	ss nb, gb, ss mb, bs,
Multi-layer/single layer	mlml

Supplementary filler weld test completed in conjunction with a butt weld qualification.
Additional information is available on attached sheet and/or welding procedure specification.

Acceptable

Lloyd's Register EMEA

Type of test	Performed and acceptable	Not tested	Notes (Inspection Number, etc.)
Visual testing	X		1 / 2
Radiographic testing		X	
Ultrasonic testing	X		UT-200-01
Magnetic particle / Penetrant test		X	
Macroscopic examination		X	
Fracture test	X		FT-204-01
Bend test		X	
Notch tensile test		X	

Issued on behalf of Lloyd's Register Group Limited

Date of issue: 19 October 2020
Location: Riga
Date of welding: 29 October 2020

Qualification: 9.3.a)	Valid Until: 29 October 2023	Qualification: 9.3.b)	Valid Until: 29 October 2022	Qualification: 9.3.c)	Valid Until: 06 April 2021

Project: **Steel tube towers for wind turbines**
City: **Fürstenwalde, Germany**
Year: **2019**
Type of welding: **135/138**
Welding position: **PA; PB; PF**

TÜV NORD

WELDER'S QUALIFICATION TEST CERTIFICATE

Page 1 of 2

Designation (s):	**EN ISO 9606-1 135/136 T BW FM1 S/P s12.5(3/9.5) D127 PA ss nb**
Examining Body:	**"TUV Nord Baltik" TE Ltd Personal certification centre**
Certificate No:	**TNB PSC – MI – 200228/0177E** Notified Body number: **1409**
Welding Procedure Specification (WPS) No:	**WPS-A1052-18**
Welder's name, surname:	**Rūdolfs Ozoliņš**
Identification:	
Method of identification:	**Passport**
Date and place of birth:	**Latvia, 03.01.1999**
Employer:	
Code / Testing Standard:	**LVS EN ISO 9606-1:2018**
Supplementary fillet weld test:	**Acceptable / not tested** (Delete as necessary)
Job knowledge:	**Acceptable / not tested** (Delete as necessary)

Photograph (if required)

	TEST PIECE	RANGE OF QUALIFICATION
Welding process (es)	135 / 136	Root / Sakne / Корень: 135; 138 Fill / Aizpildīšana / Заполнение: 136
Transfer mode (135)	D (short-circuit)	D (short-circuit); G (globular transfer); S (spray)
Product type (plate or pipe)	T	P, T
Type of weld	BW	BW
Parent material group(s)/subgroups	1.2	
Filler material group(s)	FM1	FM1, FM2
Filler material (Designation)	135: S; 136: P	135: S; 138: M; 136: R; P; V; W; Y; Z
Shielding gas	M21-ArC-18	
Auxiliaries (e.g. backing gas)		
Type of current and polarity	DC / +	
Material thickness t, [mm]	12,5	
Deposited thickness s, [mm]	135: 3,0; 136: 9,5	135, 138: 3,0 ÷ 6,0; 136: 3,0 ÷ 19,0
Deposited thickness s, [mm] (135/136)	12,5	≥ 3,0
Outside pipe diameter [mm]	127,0	≥ 63,5
Welding position	PA	PA
Weld details (135)	ss, nb	135, 138: ss nb, ss mb, bs, ss gb, es fb
Weld details (136)	ss, mb	136: ss mb, bs
Multi-layer/single layer	ml	

Additional information is available on attached sheet and / or welding procedure specification No: WPS-A1052-18

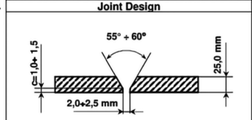
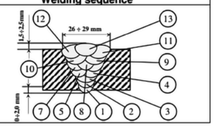
Type of tests	Performed and accepted	Not tested
Visual testing	X	—
Ultrasonic testing	X	—
Fracture test	—	X
Bend test	—	X
Notch tensile test	—	X
Macroscopic examination	—	X

Method of the extension of qualification: in accordance with **9.3.a)**

Examining Body: **"TUV Nord Baltik" TE Ltd Personal certification centre**
Location: **3 Saremas Street, Riga, Latvia**
Date of issue: **05.03.2020**
Name, surname and signature: **T. Filipova**
Stamp
Date of welding: **28.02.2020**
Validity of qualification until: **27.02.2023**

47. **WELD PREPARATION DETAILS (SKETCH)[1]:**

48.

Joint Design	Welding sequence
	

49. **WELDING DETAILS**

50.

Run	Welding process	Size of filler material, [mm]	Current, [A]	Voltage, [V]	Type of current / Polarity	Wire feed speed, [m/min] *)	Travel speed [mm/min] *)	Heat input *) [kJ/mm]	Metal transfer
1	138	1,2	187	14,9	DC / +	4,2	170	0,79	D
2;3	138	1,2	234÷240	26,1÷26,2	DC / +	7,5	234÷308	1,10 *)	G
5;6	138	1,2	243÷244	26,1÷26,3	DC / +	7,8	318÷358	0,91 *)	G
4; 7÷10	138	1,2	253÷275	26,1÷26,8	DC / +	7,8	171÷528	1,04 *)	S
11 ÷ 13	138	1,2	261÷278	26,0÷26,4	DC / +	7,8	300÷444	0,99 *)	S

51. **Filler material for root run:**
52. Designation: **LVS EN ISO 17632-A T 46 6 M M21 1 H5**
53. Trademark and make: **BOEHLER HL 51T-MC**
54. Any special baking or drying: ———
55. **Shielded gas / flux:**
56. Shielding: **M21-ArC-18**
57. Backing: ———
58. **Gas flow rate:**
59. Shielding: **16 [l/min]**
60. Backing: ———
61. Tungsten electrode type / size: ———
62. Details of back gouging / backing: **ss, nb**
63. Preheat temperature: **Min + 20°C**
64. Interpass temperature: **Max +180°C**
65. Post-weld heat treatment and / or ageing: ———
66. Time, temperature, method: ———
67. Heating and cooling rates[1]: ———
68. *) **If required**
    *) **Average mean of** heat input
69. Manufacturer:

Other information[1], e. g.:
Weaving (maximum width of run): ———
Oscillation: amplitude, frequency, dwell time: ———

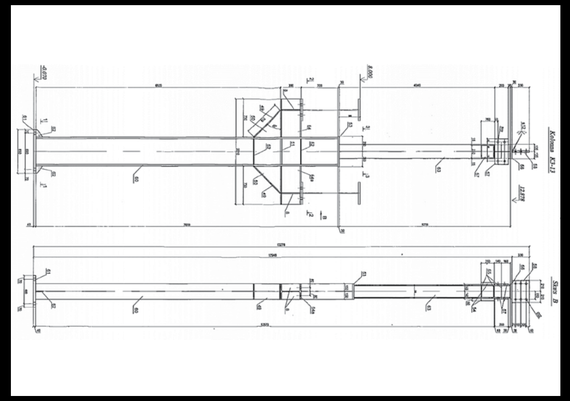
Distance contact tube / work piece: **15 ÷ 20 mm**
Nozzle diameter: **20,0 mm**
Number of wire electrodes: **1 pc.**
Torch angle: **0° ÷ 10°**
Pulse welding details: ———

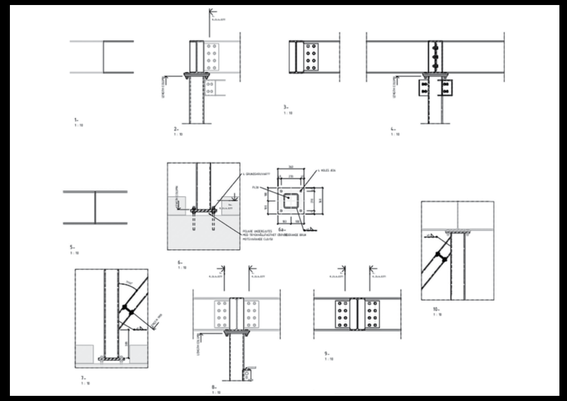
The lowest work piece temperature immediately prior to welding without pre-heating, °C: ———

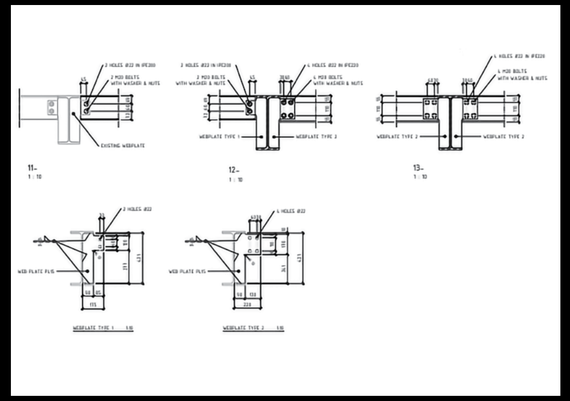
Filler material for interpass and face runs:
Designation: **LVS EN ISO 17632-A T 46 6 M M21 1 H5**
Trademark and make: **BOEHLER HL 51T-MC**

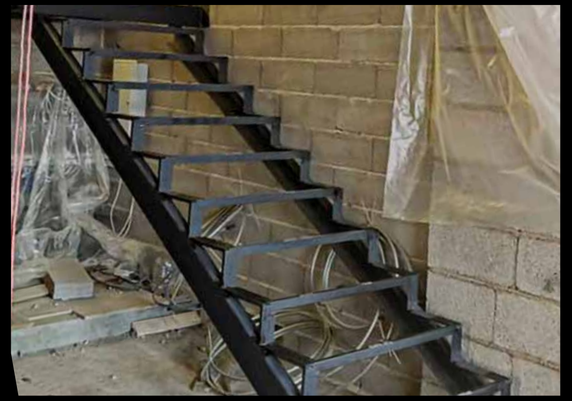
Examiner or examining body:

Project: **Welding and assembling of metal constructions / School**
City: **Borås, Sweden**
Year: **2019**
Type of welding: **111**
Welding position: **PB; PA; PD**







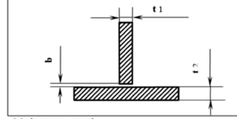
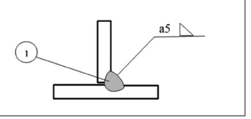


Project: **Welding of metal constructions / Stairs and railings**
City: **Göteborg / Hisings Kärra, Sweden**
Year: **2018 – present**
Type of welding: **135/138**
Welding position: **PB; PA; PC**

Metināšanas process: **135**
Savienojuma veids: **FW**
Metināšanas stāvoklis **PB**
Malu apstrādes veids: **(saskaņā ar LVS EN ISO 9692-1:2004 punktu 3.1.1)**

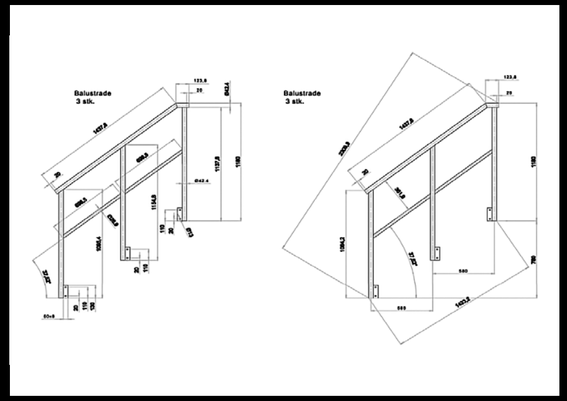
Pamatmateriāla specifikācija: **Grupa 1 (S3555JRH)**
Apakšgrupa 1.2 CEN ISO/TR 15608
Sagataves biezums **t**, mm: **t1 =10,0; t2 =10,0**
Caurules ārējais diametrs **D**, mm: ——
Atstarpe starp detaļām **b**, mm: ——

ŠUVES SAGATAVOŠANAS ELEMENTI (SKICE)[*]:

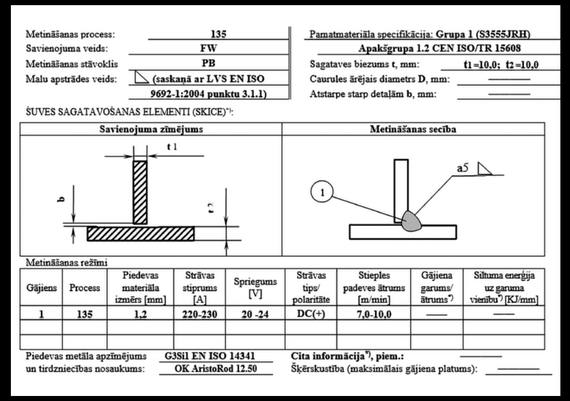
Savienojuma zīmējums	Metināšanas secība
	

Metināšanas režīmi

Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Spriegums [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums*)	Siltuma enerģija uz garuma vienību*) [KJ/mm]
1	**135**	**1,2**	**220-230**	**20 -24**	**DC(+)**	**7,0-10,0**	——	——



Project: **Stairs / Railings / Canopies**
City: **Göteborg, Sweden**
Year: **2018 – 2019**
Type of welding: **135/138**
Welding position: **PB; PA; PC**



Metināšanas process:	135	Pamatmateriāla specifikācija: Grupa 1 (S355SJRH)	
Savienojuma veids:	FW	Apakšgrupa 1.2 CEN ISO/TR 15608	
Metināšanas stāvoklis	PB	Sagataves biezums t, mm:	t1 =10,0; t2 =10,0
Malu apstrādes veids:	(saskaņā ar LVS EN ISO 9692-1:2004 punktu 3.1.1)	Caurules ārējais diametrs D, mm:	
		Atstarpe starp detaļām b, mm:	

ŠUVES SAGATAVOŠANAS ELEMENTI (SKICE)[1]:

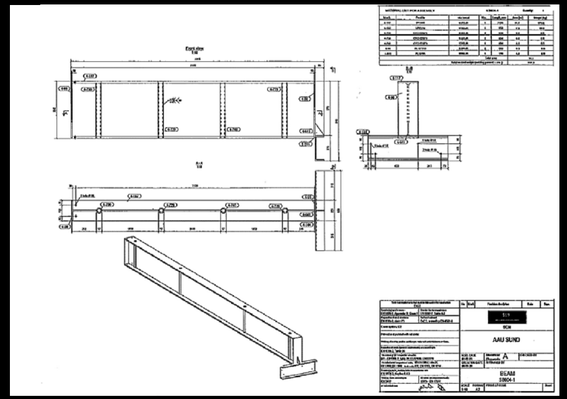
Savienojuma zīmējums	Metināšanas secība

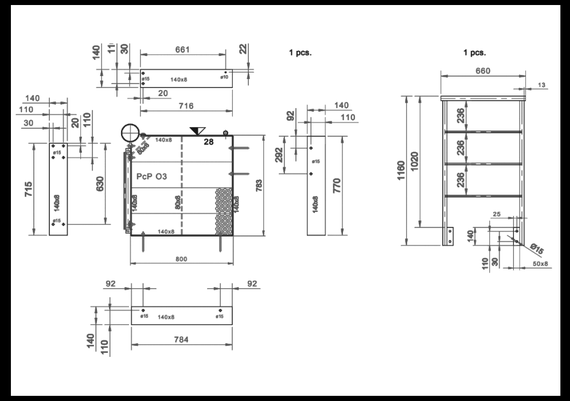
Metināšanas režīmi

Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Spriegums [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums[3]	Siltuma enerģija uz garuma vienību[3] [KJ/mm]
1	135	1,2	220-230	20 -24	DC(+)	7,0-10,0	—	—

Piedevas metāla apzīmējums un tirdzniecības nosaukums: G3Si1 EN ISO 14341 / OK AristoRod 12.50

Cita informācija[4], piem.: Šķērskustība (maksimālais gājiena platums): —





Project: **Construction works / Civil engineering project**
City: **Göteborg, Sweden**
Year: **2018**
Type of welding: **111**
Welding position: **PD; PB**

LATAK
EN ISO/IEC 17024:2012

"Certification Centre" Ltd
SPECIALIST CERTIFICATION CENTRE
SERTIFIKĀCIJAS CENTRS

WELDER QUALIFICATION TEST CERTIFICATE

Page 1 of 2

Designation (s): EN ISO 9606-1 111 T/P FW FM1 B s10/10 D60.3 PH ml
Certificate No: SC – M – 0217/2021
Welding Procedure Specification No: 111-3, 111-4
Welder's name, surname: Olegs Smirnovs
Identification:
Method of identification: PASSPORT
Date and place of birth: Latvia, 22.05.1976
Employer: "VLAVI SWE" Ltd.
Testing Standard/ Code: EN ISO 9606-1: 2017
Job knowledge: ~~Acceptable~~/ not tested (Delete as necessary)
Extra verification for fillet welds: ~~Yes~~ / No (Delete as necessary)

Welder's photograph (if required)

	TEST PIECE	RANGE OF QUALIFICATION
Welding process (es)	111 (MMA)	111 (MMA)
Product type (plate or pipe)	T+P	T, P
Transfer mode	-	-
Type of weld	FW	BW, FW
Parent material group(s)/subgroups	1.1	-
Filler material group(s)	FM1	FM1, FM2
Filler material (Designation)	B	A, B, RA, R, RB, RC, RR
Shielding gas	-	-
Auxiliaries	-	-
Type of current and polarity	DC/+	DC/+
Material thickness [mm]	10.0 (T), 10.0 (P)	≥ 3.0
Deposited thickness [mm]	-	-
Outside pipe diameter [mm]	60.3	≥ 30.15
Welding position	PH	PA, PB, PC, PD, PE, PF
Weld details	ml	sl, ml

Type of qualification test	Performed and accepted	Not tested
Visual testing (FW)	X	-
Ultrasonic testing	-	X
Fracture test (FW)	X	-
Bend test	-	X
Notch tensile test	-	X
Macroscopic examination	-	X

Examining Body:
CERTIFICATION CENTRE Ltd
SPECIALIST CERTIFICATION CENTRE
Location: Lubanas street 150b, Riga

Date of issue: 28.04.2021
Name, Surname and signature of notified body Surveyor: A.Saulitis
Date of Welding: 21.04.2021

Revalidation 9.3 a)	Valid until: 20.04.2024	Revalidation 9.3 b)	-	Revalidation 9.3 c)	-

Prolongation for qualification by examining body for the following years

Confirmation of the validity by employer / welding coordinator for the following 6 months

WELDING PROCEDURE SPECIFIKATION (WPS)
(EN ISO 15609-1:2019)

1) Manufacturer: / Ražotājs
2) Location: / Atrašanas vieta — Dzintaru iela 19, Liepāja, Latvija
3) WPS No.: / WPS Nr. — 111-FW5_30-a5-1, EN ISO 15609-1
4) WPQR No.: / WPQR Nr. — RK-M-034/18, EN ISO 15614-1
5) Joint type: / Savienojuma tips — FW
6) Welding Process: / Metināšanas process — 111 (MMA), EN ISO 4063
7) Parent Material Specification: / Pamatmateriāla specifikācija — S235-S355, EN 10025, 1.1, 1.2, EN 15608
8) Parent Metal Thickness(mm): / Sagataves biezums — t1=5÷30; t2=5÷30;
9) Welding position: / Metināšanas stāvoklis — PB; PD; PF, EN ISO 6947
10) Method of preparation/cleaning: / Sagatavošanas / attīrīšanas metode — machining

11) Weld Preparation Details / Šuves sagatavošanas skice

Joint Design / Savienojuma skice / EN ISO 9692	Welding Sequence / Metināšanas secība

12) Welding Details / Metināšanas režīmi

Run / Gājiens	Process / Process	Filler Metal Size / Piedevas materiāla izmērs (mm)	Current / Strāvas stiprums (A)	Voltage / Spriegums (V)	Current type, Polarity / Strāvas tips, polaritāte	Wire Feed Speed / Stieples piedevas ātrums (m/min)	Welding Speed / Metināšanas ātrums (mm / min)	Heat Input / Ieliekama enerģija (kJ/mm)
1	111	3,2 4,0 (optional)	100 – 140 140 - 180	18-22 20-24	DC+	-	100 – 150 150 - 200	1,0 - 1,4

13) Filler Metal: / Piedevas metāls — E42 4 B 42 H5, EN ISO 2560-A
14) Shielding / Backing Gas: / Aizsarggāze / Formējoša gāze — n/a
15) Shielding Gas Flow Rate: / Aizsarggāzes plūsmas ātrums — n/a
16) Backing Gas Flow Rate: / Formējošas gāzes plūsmas ātrums — n/a
17) Preheat Temperature: / Iepriekšējas uzsildīšanas temp. — 5°C¹
18) Interpass Temperature: / Starpgājienu temperatūra — n/a, EN 1011-2
19) Post Weld Heat Treatment: / Termiska apstrāde pēc metināšanas — n/a
20) Details of Back Gouging/Backing: / Saknes apstrāde, paliktņi — sl
21) Electrode dryingtemperature, time: / Elektrodu žāvēšanas temperatūra, laiks — 350°C, 2 hours

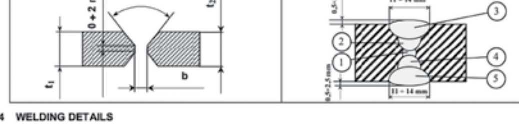
WELDING PROCEDURE SPECIFICATION (**WPS**)
(in accordance with the standard **EN ISO 15609 – 1:2005**)

Location: m/t "AVON"
Manufacturer's WPS No.: U-T-025-01/19
Manufacturer's WPQR No.: WPQR 1
Manufacturer: SIA
Welding Process: 111 (MMA welding)
Joint Type: BW (butt weld)
Welding Position: PA;PE;PF acc. to EN ISO 6947
Joint preparation: X (according to EN ISO 9692-1: 2013 point 2.5.1)

Method of Preparation and Clearing: Milling, brushing and / or grinding
Parent Material Specification: steel subgroup No. 1.1 and 1.2 according to CEN ISO/TR 15608 (carbon steel)
Material Thickness t, [mm]: t_1=14,0÷16,0; t_2=14,0÷16,0
Outside Pipe Diameter D, [mm]: ———
Gap between workpieces b, [mm]: b = 1,0 ÷ 3,0

WELD PREPARATION DETAILS (SKETCH)*):

Joint Design	Welding sequence



WELDING DETAILS

Run	Welding Process	Size of Filler Material, [mm]	Current, [A]	Voltage, [V]	Type of current / Polarity	Wire Feed Speed, [m/min]	Run-out length / Travel speed [mm/min]*)	Heat input*) [KJ/mm]
1	111	3,2	105 ÷ 125	22 ÷ 24	DC / +	——	90 ÷ 110	1,01 ÷ 1,60
2÷5	111	3,2	105 ÷ 125	22 ÷ 24	DC / +	——	100 ÷ 130	0,85 ÷ 1,44

Filler Material for Root Run:
Designation: LVS EN ISO 2560-A E 42 5 B 42 H5
Trademark and Make: OK 48.00 (ESAB)
Any Special Baking or Drying: 350˚C, 2 h.
Shielded Gas / Flux:
Shielded: ———
Backing: ———
Gas Flow Rate:
Shielded: ———
Backing: ———
Tungsten Electrode Type / Size: ———
Details of Back Gouging / Backing: bs
Preheat Temperature: Min + 0°C
Interpass Temperature: Max +150°C
Post-Weld Heat Treatment and / or Ageing: ———

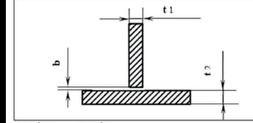
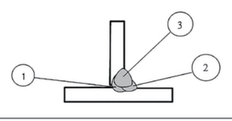
Other information*), e. g.:
Weaving (maximum width of run): 10,0 mm
Oscillation: amplitude, frequency, dwell time: ———
Distance contact tube / work piece: ———
Nozzle diameter: ———
Number of wire electrodes: ———
Torch angle: ———
Mode of metal transfer: ———
The lowest work piece temperature immediately prior to welding without pre-heating, °C: ———
Filler Material for Interpass and Face Runs:
Designation: LVS EN ISO 2560-A E 42 5 B 42 H5
Trademark and Make: OK 48.00 (ESAB)

Project: **Welding and assembling of metal constructions**
City: **Lödöse, Sweden**
Year: **2018**
Type of welding: **111/135**
Welding position: **PA; PB; PC; PD**

Metināšanas process: **135**
Savienojuma veids: **FW**
Metināšanas stāvoklis **PB**
Malu apstrādes veids: **(saskaņā ar LVS EN ISO 9692-1:2004 punktu 3.1.1)**

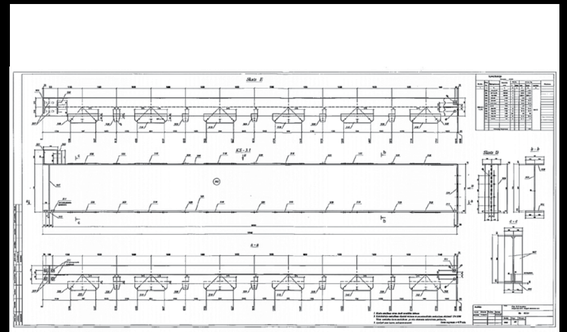
Pamatmateriāla specifikācija: **Grupa 1 (S355J2HN)**
Apakšgrupa 1.2 CEN ISO/TR 15608
Sagataves biezums **t**, mm: **t1 =10,0; t2 =10,0**
Caurules ārējais diametrs **D**, mm: ——
Atstarpe starp detaļām **b**, mm: ——

ŠUVES SAGATAVOŠANAS ELEMENTI (SKICE)*:

Savienojuma zīmējums	Metināšanas secība
	

Metināšanas režīmi

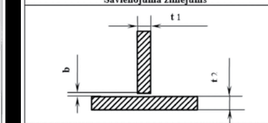
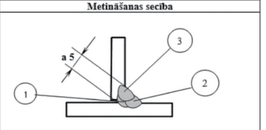
Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Spriegums [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums*	Siltuma enerģija uz garuma vienību* [KJ/mm]
1	135	1,0	220-230	26,3-26,8	DC(+)	12,0-12,4	——	——
1	135	1,0	220-230	26,3-26,8	DC(+)	12,0-12,4	——	——
1	135	1,0	220-230	26,3-26,8	DC(+)	12,0-12,4	——	——



Metināšanas process: **111**
Savienojuma veids: **FW**
Metināšanas stāvoklis **PB**
Malu apstrādes veids: **(saskaņā ar LVS EN ISO 9692-1:2004 punktu 3.1.1)**

Pamatmateriāla specifikācija: **Grupa 1 (S355JRH)**
Apakšgrupa 1.2 CEN ISO/TR 15608
Sagataves biezums **t**, mm: **t1 =12,0; t2 =12,0**
Caurules ārējais diametrs **D**, mm: ——
Atstarpe starp detaļām **b**, mm: ——

ŠUVES SAGATAVOŠANAS ELEMENTI (SKICE)*:

Savienojuma zīmējums	Metināšanas secība
	

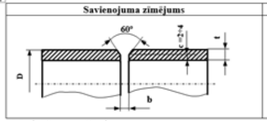
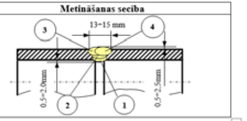
Metināšanas režīmi

Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Spriegums [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums*	Siltuma enerģija uz garuma vienību* [KJ/mm]
1	111	2,5	60-90	20 -21	DC(+)	——	——	——
2;3	111	3,2	90-130	21 -24	DC(+)	——	——	——

Project: **Welding of metal constructions**
City: **Tråvad, Sweden**
Year: **2017**
Type of welding: **135**
Welding position: **PA; PB; PC**

Savienojuma veids:	BW	Apakšgrupa 1.2 LVS CEN ISO/TR 15608:2006	
Metināšanas stāvoklis	H-L045	Sagataves biezums t, mm:	12,5
Malu apstrādes veids:	Y (saskaņā ar LVS EN ISO 9692-1:2004 punktu 1.5)	Caurules ārējais diametrs D, mm:	159,0
		Atstarpe starp detaļām b, mm:	1 ÷ 4

ŠUVES SAGATAVOŠANAS ELEMENTI (SKICE)*):

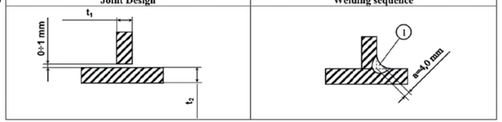
Savienojuma zīmējums	Metināšanas seciba
	

Metināšanas režīmi

Gājiens	Process	Piedevas materiāla izmērs [mm]	Strāvas stiprums [A]	Sprieguma [V]	Strāvas tips/ polaritāte	Stieples padeves ātrums [m/min]	Gājiena garums/ ātrums*)	Siltuma enerģija uz garuma vienību*) [KJ/mm]
1	136	1,2	110-150	25-27	DC(+)	5,0-5,8	——	——
2	136	1,2	180-250	27-30	DC(+)	5,8-11,0	——	——
3	136	1,2	180-250	27-30	DC(+)	5,8-11,0	——	——
4	136	1,2	180-250	27-30	DC(+)	5,8-11,0	——	——

7 Welding Process:	136 (MAG welding)	Parent Material Specification:	Steel group No. 1
8 Joint Type:	FW (fillet weld)		acc. to CEN ISO/TR 15608 (steel with min $R_{eH} \leq 355$ N/mm²)
9 Welding Position:	PB acc. to EN ISO 6947	Material Thickness t, [mm]:	t_1=10,0; t_2=10,0
10 Joint preparation:	(according to EN ISO	Outside Pipe Diameter D, [mm]:	——
11	9692-1: 2013 point 3.1.1.)	Gap between workpieces b, [mm]:	b=0 ÷ 0,5

12 WELD PREPARATION DETAILS (SKETCH)*):

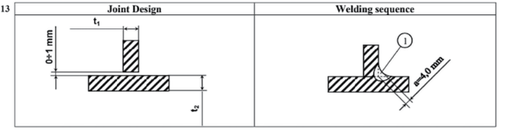
13 Joint Design	Welding sequence
	

14 WELDING DETAILS

15 Run	Welding Process	Size of Filler Material, [mm]	Current, [A]	Voltage, [V]	Type of current / Polarity	Wire Feed Speed, [m/min]	Run-out-length / Travel speed [mm/min] *)	Heat input *) [kJ/mm]
1	136	1,2	170 ÷ 190	21 ÷ 23	DC / +	6,5 ÷ 7,5	146 ÷ 199	0,86 ÷ 1,44
2	136	1,2	190 ÷ 210	22 ÷ 24	DC / +	7,5 ÷ 8,5	168 ÷ 233	0,86 ÷ 1,44
3	136	1,2	190 ÷ 210	22 ÷ 24	DC / +	7,5 ÷ 8,5	155 ÷ 213	0,94 ÷ 1,56
4	136	1,2	190 ÷ 210	22 ÷ 24	DC / +	7,5 ÷ 8,5	194 ÷ 268	0,75 ÷ 1,25

7 Welding Process:	136 (MAG welding)	Parent Material Specification:	Steel group No. 1
8 Joint Type:	FW (fillet weld)		acc. to CEN ISO/TR 15608 (steel with min $R_{eH} \leq 355$ N/mm²)
9 Welding Position:	PB acc. to EN ISO 6947	Material Thickness t, [mm]:	t_1=10,0; t_2=10,0
10 Joint preparation:	(according to EN ISO	Outside Pipe Diameter D, [mm]:	——
11	9692-1: 2013 point 3.1.1.)	Gap between workpieces b, [mm]:	b=0 ÷ 0,5

12 WELD PREPARATION DETAILS (SKETCH)*):

13 Joint Design	Welding sequence
	

14 WELDING DETAILS

15 Run	Welding Process	Size of Filler Material, [mm]	Current, [A]	Voltage, [V]	Type of current / Polarity	Wire Feed Speed, [m/min]	Run-out-length / Travel speed [mm/min] *)	Heat input *) [kJ/mm]
1	136	1,2	170 ÷ 190	21 ÷ 23	DC / +	6,5 ÷ 7,5	146 ÷ 199	0,86 ÷ 1,44
2	136	1,2	190 ÷ 210	22 ÷ 24	DC / +	7,5 ÷ 8,5	168 ÷ 233	0,86 ÷ 1,44
3	136	1,2	190 ÷ 210	22 ÷ 24	DC / +	7,5 ÷ 8,5	155 ÷ 213	0,94 ÷ 1,56
4	136	1,2	190 ÷ 210	22 ÷ 24	DC / +	7,5 ÷ 8,5	194 ÷ 268	0,75 ÷ 1,25

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