



OUR COLLECTION OF RECIPES

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Table of content

- 2 History**
- 3 Information**
- 5 Change of filler material**
- 7 Available welding procedures (WPQR)**

Dratec	8	KOBELCO	20
Electrode jesenice	9	LINCOLN ELECTRIC	21
Elga	10	Luna Tools	22
ESAB	11	Magmaweld	23
EWM	14	Meltolit	25
GeKa	15	NST/NSSM	26
Grytgöls bruk	15	Oerlikon	27
Hyundai Welding	16	Selectarc	28
INE	17	Voestalpine/Böhler/Utp	29
KISWEL	18		



HISTORY

Svetsprocedur.se originates from Hebro-Verken AB which was founded in 1934 by Herbert Lindhe. Herbert was a blacksmith and initially worked, among other things, with shoeing horses and forging steel fences and gates.

Today, we no longer forge gates, but are the largest in Europe in sharing our knowledge in welding. We do this in the form of welding procedures (WPQR) welded according to ISO 15614-1. Joining steel is still our specialty.



Information about welding procedures

If you have a need for welding procedures for your production and do not weld pressure vessels or products with other requirements, our welding procedures are a good complement instead of producing your own procedures.

STANDARDPROCEDURER

Standard welding procedures according to ISO 15612:2018 can be used if:

- The execution class is EXC 2-3 according to EN 1090-2:2018. For EXC3 if the designer has prescribed it.
- Requirements from customer or standard requirements are missing, but verifying values need to be used.
- When certain standards are used, e.g. ISO 3834 series

Limitations for standard welding procedures

- Maximum tensile strength is 355 MPa.
- The cover range for material thickness is between 3-12 mm, 3-24 mm, 12,5-50 mm or 15-50 mm. For rotation welding positions PA, PC and PF it covers diameters for pipes >150 mm and all other welding positions for pipe diameters >500mm.
- Cover range for a-measure on multilayer fillet welds covers all a-measures. Covers diameters from 50 mm and material thickness from 5 mm.
- Cover range for single layer fillet welds are between 3-6 mm. Covers diameters from 40 mm and material thickness from 3-12 mm.
- Shielding gas that have been used for method 135, 136 and 138 are a mixed gas with 82% Argon and 18% carbon monoxide (ISO 14175 - M21).

Special procedures

Our special procedures has other cover ranges than compared to our standard procedures. For those filler materials that have special procedures, they can be found under the chapter special procedures.

- Cover range for a-measure on multilayer fillet welds covers all a-measures. Covers diameters from 60 mm and material thickness for material 1, 3-20 mm and for material 2 3-30 mm.
- Cover range for single layer fillet welds are between 3-6 mm. Covers diameters from 60* mm and material 1, 3-20 mm and for material 2 3-30 mm.
- Welding with carbon monoxide (according to ISO 14175 – C1) qualifies only for carbon monoxide
- Welding with base coat/ primer qualifies for welding with or without paint
- Welding of branches with an angle less than 60 degrees qualifies for angles from the test angle up to 90 degrees.

(*Less diameters is available for some filler materials.)

Classification of filler materials

Our procedures are welded with filler materials according to below classification

Welding method according to ISO 4063	Name	Standard
111	MMA Welding with covered electrode	ISO 2560-A
135	MAG-Welding with solid wire electrode	ISO 14731
136	MAG-Welding with flux cored electrode	ISO 17632-A
138	MAG-Welding with metal cored electrode	ISO 17632-A

Abbreviations

SL = Single-Layer.

ML = Multi-Layer.

A = A-measure in millimeters.

Take over for welding procedures

If a welding procedure is qualified according to ISO 15614-1:2017 (or earlier versions) this can be used to qualify procedures according to ISO 15612:2018 which is the standard for standard welding procedures. This means that the existing procedure parameters are maintained but rewritten so that the owner of the procedure is the correct company.

Cost

The price includes the right to use the standard procedure as well as a printout of the procedure according to ISO 15612:2018 by a third party. Regardless of joint type, welding method, thickness and location, the price of our procedures is SEK 600 Euro/piece.

If express delivery is needed (0-5 days) there will be an additional fee of 25 euro.

Contact

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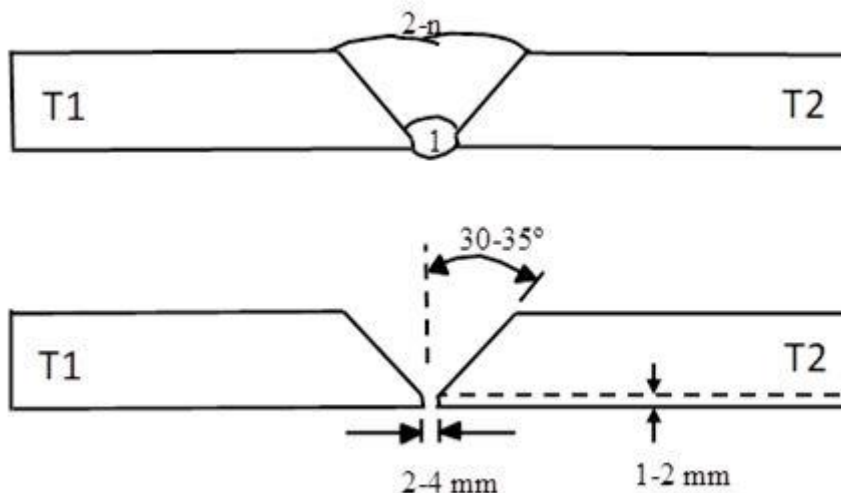
Change of filler material

Here follows a guide how to read a filler materials classification and rules when it is possible to change the filler material.

Terms for changing the filler material as flux cored electrode or covered electrode.

1. In order to change a filler material, everything within the red marking must be identical to what is stated in the classification for the filler material. This is called the mandatory part of the classification. If this classification does not match, new welding procedures must be produced on all geometries.
2. The part behind the second red line, i.e., the hydrogen number must be the same or lower to be able to change the filler material. If the hydrogen number is higher, new welding procedures must be produced on all geometries.
3. If the weld is a butt weld and the classification is identical to above, a new butt weld procedure must be welded. In this procedure, only impact strength testing is done to obtain the correct impact strength values.

Reference: ISO 15614-1. Example of a butt weld:



Example of classification for tubular cored electrode/ T422ZPM211H5 according to ISO 17632-A



The red highlighted part of the code above represents the part of the classification that is mandatory.

Key:

T = Tube

42 = Strength and elongation (42 = 420 MPa or N/mm² in tensile strength)

2 = Symbol for impact properties (2 = Temperature -20°C and at least 47 Joule impact energy)

Z = Symbol for chemical composition for all-weld metal (Z = unknown chemical components)

P = Symbol for type of electrode core (P = Rutile slow freezing slag, (M = Metal powder))

M21 = Symbol for shielding gas (M = Mixed gas according to ISO 14175)

1 = Symbol for welding position (1 = all positions)

H5 = Symbol indication the hydrogen content of deposited metal (H5 = ≤5 ml hydrogen/100g deposited metal)

Example of classification of covered electrodes E424B42H5 according to ISO 2560-A



The red highlighted part of the code above represents the part of the classification that is mandatory.

Key:

E = Covered Electrode

42 = Strength and elongation (42 = 420 MPa or N/mm² in tensile strength)

4 = Symbol for impact properties for all-weld metal (4 = Temperature -40°C and at least 47 Joule impact energy)

B = Symbol for type of electrode covering (B = Basic covering)

4 = Symbol for nominal electrode efficiency and type of current (4 = 105-125 % and DC)

2 = Symbol for welding position (2 = All positions except for welding vertical down)

H5 = Symbol indication the hydrogen content of deposited metal (H5 = ≤5 ml hydrogen/100g deposited metal)

Example of classification for wire electrodes **G422M21G4Si1** according to ISO 14341



Key:

G = Wire electrode

42 = Strength and elongation (42 = 420 MPa or N/mm² in tensile strength)

2 = Symbol for impact properties (2 = Temperature -20°C and at least 47 Joule impact energy)

M21 = Symbol for shielding gas (M = Mixed gas according to ISO 14175)

G4Si1 = Symbol for chemical composition of wire electrodes

Terms for changing wire electrode:

To be able to replace a wire electrode, the entire classification must match. However, no new samples are required to be welded up if the classification is identical. This applies to both fillet and butt welds.

Available welding procedures/WPQR (WELDING PROCEDURE QUALIFICATION RECORD)



Standard welding procedure					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
135	DT-SG2	G424M213Si1	3-12	3-12	≥5
135	DT-SG 3	G464M214Si1	3-12	3-12	≥5
136	DT-RF 14	T464PM1H5	3-24*,***	3-12	≥5
136	DT-RF 14	T462PC1H5**	-	-	≥5
138	DT-MF 10	T464MM2H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
138	DT-MF 10	T464MM2H5	3-20	3-30	SL, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	EVBS	E424B12H10	3-24***	3-12	≥5
111	EVBS	E424B12H10	15-50***	-	-
111	EVBS 50	E424B32H5	3-24	3-12	≥5
111	EVBS	E424B12H10	15-50***	-	-

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
111	EVBS	E424B12H10	3-20	3-30	SL, A-measure 3-6 mm
111	EVBS	E424B12H10	3-20	3-30	ML, A-measure 3-6 mm
111	EVBS 50	E424B32H5	3-20	3-30	SL, A-measure 3-6 mm
111	EVBS 50	E424B32H5	3-20	3-30	ML, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	P48S	E424B42H5	3-24	3-12	≥5
111	P48S	E424B42H5	15-50***	-	-
111	P48M	E425B42H5	3-24	3-12	≥5
135	Elgamatic 100	G422MG3Si1	3-24	3-12	≥5
136	DWA 50	T422PM1H5	3-24*	3-12	≥5
136	Elgacore 71T	T462PC1H10*	-	-	≥5
136	Megafil 713R	T464PM1H5	3-24*,***	3-12	≥5
138	MXA 100 XP	T464MM1H5	3-24	3-12	≥5
138	MXA 100	T424MM3H5	3-24	3-12	≥5
138	Elgacore Edge	T463MM3H5	3-24	3-12	≥5
138	Elgacore Matrix	T464MM3H5	3-24	3-12	≥5
138	Megafil 710M	T466MM1H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
111	ELGA P48S	E424B42H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	ELGA P48S	E424B42H5	3-20	3-30	ML, 42 µm paint, A-measure 3-6 mm
111	ELGA P48M	E425B42H5	3-20	3-30	SL, 133 µm paint, A-measure 3-6 mm
136	Megafil 713R	T464PM1H5	3-20	3-30	SL, A-measure 3-6 mm
136	Megafil 713R	T462PC11H5**	3-20	3-30	SL, A-measure 3-6 mm C1 - carbon dioxide
138	MXA 100 XP	T464MM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	MXA 100 XP	T464MM1H5	Ø8-32	3-30	SL, A-measure 3-6 mm
138	Elgacore Edge	T463MM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	Elgacore Matrix	T464MM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	Elgacore Matrix	T464MM1H5	Ø8-32	3-30	SL, A-measure 3-6 mm
138	Megafil 710M	T466MM1H5	3-20	3-30	SL, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	OK 48.00	E424B42H5	3-24	3-12	≥5
111	OK 48.00	E424B42H5	15-50***	-	-
111	OK 48.04	E424B32H5	3-24***	3-12	≥5
111	OK 48.04	E424B32H5	15-50***	-	-
111	OK 48.05	E424B42H5	3-24	3-12	≥5
111	OK 48.05	E424B42H5	15-50***	-	-
111	OK 48.15	E423B32H5	3-24***	3-12	≥5
111	OK 48.50	E424B32H5	3-24***	3-12	≥5
111	OK 48.50	E424B32H5	15-50***	-	-
111	OK 48.60	E424B42H5	3-24***	3-12	≥5
111	OK 48.60	E424B42H5	15-50***	-	-
111	OK 53.05	E424B22H10	3-24***	3-12	≥5
111	OK 53.05	E424B22H10	15-50***	-	-
111	OK Femax 38.65	E424B73H5	3-24***	3-12	≥5
111	OK Femax 38.65	E424B73H5	15-50***	-	-
111	Filarc 27P	E464B41H5	3-24***	3-12	≥5
111	Filarc 35	E424B42H5	3-24	3-12	≥5
111	Filarc 35	E424B42H5	15-50***	-	-
111	Filarc 35S	E424B32H5	3-24***	3-12	≥5
111	Filarc 35S	E424B32H5	15-50***	-	-
111	Filarc 36D	E424B22H10	3-24***	3-12	≥5
111	Filarc 36D	E424B22H10	15-50***	-	-
111	Filarc 56S	E425B12H5	3-24***	3-12	≥5
135	Filarc PZ6000	G423M213Si1	3-24	3-12	≥5
135	Filarc PZ6138	T5061NiPM211H5	3-24***	3-12	≥5
135	OK Aristorod 12.50	G424M213Si1	3-12	3-12	≥5
135	OK Aristorod 12.51	G423M213Si1	3-12	3-12	≥5
135	OK Aristorod 12.63	G464M214Si1	3-12	3-12	≥5
135	OK Aristorod 12.64	G464M214Si1	3-12	3-12	≥5
135	Purus 42	G423M213Si1	3-12	3-12	≥5
135	Purus 42 CF	G424M213Si1	3-12	3-12	≥5
135	Purus 46	G464M214Si1	3-12	3-12	≥5

135	Purus 46 CF	G464M214Si1	3-12	3-12	≥5
136	Tubrod 15.13	T422PM1H5	3-24*	3-12	≥5
136	Tubrod 15.14	T462PM2H5	3-24*	3-12	≥5
136	Tubrod 15.14	T462PC1H5**	-	-	≥5
136	Tubrod 15.15	T462PM2H5	3-24*	3-12	≥5
136	Tubrod 15.15	T462PC1H5**	-	-	≥5
138	Tubrod 14.10	T464MM2H5	3-24	3-12	≥5
138	Tubrod 14.11	T424MM3H5	3-24	3-12	≥5
138	Coreweld 46LS	T464MM2H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method ISO 4063	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
111	OK 48.00	E424B42H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	OK 48.00	E424B42H5	3-20	3-30	ML, 42 µm paint
111	OK 48.04	E424B32H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	OK 48.04	E424B32H5	3-20	3-30	ML, 42 µm paint
111	OK 48.05	E424B42H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	OK 48.05	E424B42H5	3-20	3-30	ML, 42 µm paint
111	OK 48.15	E423B32H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	OK 48.15	E423B32H5	3-20	3-30	ML, 42 µm paint
111	OK 48.50	E424B32H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	OK 48.50	E424B32H5	3-20	3-30	ML, 42 µm paint
111	OK 48.60	E424B42H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	OK 48.60	E424B42H5	3-20	3-30	ML, 42 µm paint
111	OK 53.05	E424B22H10	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	OK 53.05	E424B22H10	3-20	3-30	ML, 42 µm paint
111	OK Femax 38.65	E424B73H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	OK Femax 38.65	E424B73H5	3-20	3-30	ML, 42 µm paint
111	Filarc 35	E424B42H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	Filarc 35	E424B42H5	3-20	3-30	ML, 42 µm paint
111	Filarc 35S	E424B32H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	Filarc 35S	E424B32H5	3-20	3-30	ML, 42 µm paint

111	Filarc 36D	E424B2H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	Filarc 36D	E424B2H5	3-20	3-30	ML, 42 µm paint
135	OK Aristorod 12.63	G465M214Si1	Ø8-32	3-30	SL, A-measure 3-6 mm
135	OK Aristorod 12.64	G465M214Si1	Ø8-32	3-30	SL, A-measure 3-6 mm
138	Tubrod 14.10	T464MM2H5	Ø8-32	3-30	SL, A-measure 3-6 mm
138	Coreweld 46 LS	T464MM2H5	Ø8-32	3-30	SL, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	SE 7018 BH5	E424B32H5	3-24***	3-12	≥5
111	SE 7018 BH5	E424B32H5	15-50***	-	-
111	SE 7016 BR	E424B12H10	3-24***	3-12	≥5
111	SE 7016 BR	E424B12H10	15-50***	-	-
135	SW 70S G3	G424M213Si1	3-12	3-12	≥5
135	SW 70S G3 Bronze	G424M213Si1	3-12	3-12	≥5
135	SW 70S G3 Mec	G424M213Si1	3-12	3-12	≥5
135	SW 70S G4	G464M214Si1	3-12	3-12	≥5
135	SW 70S G4 Bronze	G464M214Si1	3-12	3-12	≥5
135	SW 70S G4 Mec	G464M214Si1	3-12	3-12	≥5
136	FCW 71T Rutile	T422PM1H5	3-24	3-12	≥5
138	FCW T70C Metal	T466MM1H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
111	SE 7016 BR	E424B12H10	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	SE 7016 BR	E424B12H10	3-20	3-30	ML, 42 µm paint, A-measure 3-6 mm
111	SE 7018 BH5	E424B32H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	SE 7018 BH5	E424B32H5	3-20	3-30	ML, 42 µm paint, A-measure 3-6 mm

* Metallpulverfylld tråd använd i roten.

** Svetsad med carbon dioxide ISO 14175 – C1

***SWPS klassad ner till -20°C (hänvisning till ISO 15614-1:2017 kapitel 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	Laser B 47	E424B42H5	3-24***	3-12	≥5
111	Laser B 47	E424B42H5	15-50***	-	-
111	Laser B 47-A	E424B32H5	3-24***	3-12	≥5
111	Laser B 47-A	E424B32H5	15-50***	-	-
111	Laser B 50	E425B42H5	3-24***	3-12	≥5
111	Laser B 60	E424B42H5	3-24***	3-12	≥5
111	Laser B 60	E424B42H5	15-50***	-	-
136	Elcor R 71 SC	T463PM1H5	3-24*,***	3-12	≥5
138	Elcor M 70 SC	T466MM11H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
111	Laser B 47	E424B42H5	3-20	3-30	SL, A-measure 3-6 mm
111	Laser B 47	E424B42H5	3-20	3-30	ML, A-measure 3-6 mm
111	Laser B 47-A	E424B32H5	3-20	3-30	SL, A-measure 3-6 mm
111	Laser B 47-A	E424B32H5	3-20	3-30	ML, A-measure 3-6 mm
111	Laser B 50	E425B42H5	3-20	3-30	SL, A-measure 3-6 mm
111	Laser B 60	E424B42H5	3-20	3-30	SL, A-measure 3-6 mm
111	Laser B 60	E424B42H5	3-20	3-30	ML, A-measure 3-6 mm
138	Elcor M 70 SC	T466MM11H5	3-20	3-30	ML, A-measure 3-6 mm



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
135	GB74	G422MG3Si1	3-12	3-12	≥5
135	GB76	G422MG4Si1	3-12	3-12	≥5

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 - C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	S-7018.GH	E423B32H5	3-24***	3-12	≥5
135	SM-70	G424M213Si1	3-12	3-12	≥5
135	SM-70 EN	G464MG4Si1	3-12	3-12	≥5
136	SC-71 MJ	T464PM1H5	3-24*	3-12	≥5
136	SC-71 LHM	T463PM1H5	3-24*,***	3-12	≥5
136	SC-71 MSR	T464PM1H5	3-24	3-12	-
138	SC-70 ML	T464MM2H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
111	S-7018.GH	E423B32H5	3-20	3-30	SL, A-measure 3-6 mm
136	Supercored 71	T422PC1H10**	3-20	3-30	SL, A-measure 3-6 mm C1 – carbon dioxide
136	Supercored 71	T422PC1H10**	3-20	3-30	ML, C1 - carbon dioxide
136	SC-71MSR	T4643PM1H5	3-20	3-30	SL, A-measure 3-6mm
138	SC-70 ML	T464MM2H5	Ø8-32	3-30	SL, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	INE 50 B	E424B42H5	3-24***	3-12	≥5
111	INE 50 B	E424B42H5	15-50***	-	-
111	INE 55B	E425B42H5	3-24***	3-12	≥5
135	INEFIL	G464M213Si1	3-24	3-12	≥5
135	INEFIL 19.12	G464M214Si1	3-24*	3-12	≥5
135	INEFIL NR	G464M213Si1	3-24*	3-12	≥5
136	INETUB R71T1	T462PM212H5	3-24	3-12	≥5
136	INETUB R71T1	T462PC12H5**	-	-	≥5
136	INETUB R81T1-Ni1	T4641NiPM212H5	-	-	≥5
138	INETUB M71TG	T4644MM212H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
111	INE 50 B	E424B42H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6
111	INE 50 B	E424B42H5	3-20	3-30	ML, 42 µm paint,
111	INE 55 B	E425B42H5	3-20	3-30	SL, A-measure 3-6 mm, Ø ≥60
135	INEFIL	G464M213Si1	3-20	3-30	SL, A-measure 3-6 mm, Ø ≥19
135	INEFIL 19.12	G464M214Si1	3-20	3-30	SL, A-measure 3-6 mm, Ø ≥19
135	INEFIL NR	G464M214Si1	3-20	3-30	SL, A-measure 3-6 mm, Ø ≥19
138	INETUB M71TG	T4644MM212H5	3-20	3-30	SL, A-measure 3-6 mm, Ø ≥60
138	INETUB M71TG	T4644MM212H5	Ø8-32	3-30	SL, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



KISWEL

STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	KH-500LF	E383B12H10	3-24***	3-12	≥5
111	KH-500W	E383B12H10	3-24***	3-12	≥5
111	KK-50LF	E423B12H10	3-24***	3-12	≥5
111	K-7016HR	E423B12H5	3-24***	3-12	≥5
111	K-7018	E423B32H10	3-24***	3-12	≥5
111	K-7018HR	E423B32H5	3-24***	3-12	≥5
111	K-7018N	E424B32H10	3-24***	3-12	≥5
111	K-7018N	E424B32H10	15-50***	-	-
111	K-7018NP	E424B32H5	3-24***	3-12	≥5
111	K-7018NP	E424B32H5	15-50***	-	-
135	KC-29	G464M4Si1	3-12	3-12	≥5
135	ZO-29	G464M4Si1	3-12	3-12	≥5
135	ZO-28	G423M3Si1	3-24	3-12	≥5
135	KC-28	G423M3Si1	3-24	3-12	≥5
136	K-71TMJ	T464PM211H5	3-24*,***	3-12	≥5
136	K-71TLF	T462PM211H5	3-24*,***	3-12	≥5
138	KX-706M	T462MM213H5	3-24	3-12	≥5
138	KX-706MU	T464MM13H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
111	KK-50LF	E423B12H10	3-20	3-30	SL, A-measure 3-6 mm
111	K-7016HR	E423B12H5	3-20	3-30	SL, A-measure 3-6 mm
111	K-7018	E423B32H10	3-20	3-30	SL, A-measure 3-6 mm
111	K-7018HR	E423B32H5	3-20	3-30	SL, A-measure 3-6 mm
111	K-7018N	E424B32H10	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	K-7018N	E424B32H10	3-20	3-30	ML, 42 µm paint
111	K-7018NP	E424B32H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	K-7018NP	E424B32H5	3-20	3-30	ML, 42 µm paint

136	K-71TMJ	T464PM211H5	3-20	3-30	ML
136	K-71TLF	T422PC11H5*	3-20	3-30	SL, A-measure 3-6 mm
136	K-71TLF	T422PC11H5*	3-20	3-30	ML, C1 – carbon dioxide
136	K-71T Plus	T422PC11H5*	3-20	3-30	SL, A-measure 3-6 mm, C1 – carbon dioxide
136	K-71T Plus	T422PC11H5*	3-20	3-30	ML, C1 – carbon dioxide
138	KX-706MU	T464MM13H5	Ø8-32	3-30	SL, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)

STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
136	DW-50	T422PM1H5	3-24*,***	3-12	≥5
136	DW-A50	T422PM1H5	3-24*,***	3-12	≥5
136	DW-A55S	T464MM1H5	3-24	3-12	≥5
138	MX-A55S	T464MM1H5	3-24	3-12	≥5
138	MX-A100	T424MM3H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
136	DW-A55E	T464PM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	MX-A55E	T464MM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	MX-A55E	T464MM1H5	Ø8-32	3-30	SL, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	Baso G	E425B32H5	3-24***	3-12	≥5
111	Lincoln 7016 DR	E423B12H5	3-24***	3-12	≥5
111	Baso 100	E423B12H5	3-24***	3-12	≥5
111	Baso 120	E423B12H5	3-24***	3-12	≥5
111	Baso 26V	E423B15H10	3-24***	3-12	≥5
111	Basic 7018P	E424B42H5	3-24***	3-12	≥5
111	Basic 7018P	E424B42H5	15-50***	-	-
111	Conarc One	E425B32H5	3-24***	3-12	≥5
111	Conarc 48	E464B42H5	3-24	3-12	≥5
111	Conarc 49C	E464B32H5	3-24***	3-12	≥5
111	Conarc 51	E424B12H5	3-24***	3-12	≥5
111	Conarc 51	E424B12H5	15-50***	-	-
111	Conarc V180	E424B73H5	3-24***	3-12	≥5
111	Conarc V180	E424B73H5	15-50***	-	-
111	Vandal	E424B32H5	3-24***	3-12	≥5
111	Vandal	E424B32H5	15-50***	-	-
135	UltraMag	G464M3Si1	3-24	-	≥5
136	Outershield 71E-H	T463PM1H5	3-24*	3-12	≥5
136	Outershield 71M-H	T462PM2H5	3-24*,***	3-12	≥5
136	Pipelinier G70M	T464PM2H10	3-24*,***	3-12	≥5
136	Pipelinier G60M-E	T464PM2H5	3-24*,***	3-12	≥5
138	Outershield MC710-H	T463MM2H5	3-24	3-12	≥5
138	Outershield MC710RF-H	T463MM2H5	3-24	3-12	≥5
138	Outershield MC715-H	T464MM2H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
111	Baso G	E425B32H5	3-20	3-30	SL, A-measure 3-6 mm

111	Conarc One	E425B32H5	3-20	3-30	SL, 133 µm paint, A-measure 3-6 mm
111	Baso 100	E425B32H5	3-20	3-30	SL, 133 µm paint, A-measure 3-6 mm
111	Baso 120	E425B32H5	3-20	3-30	SL, 133 µm paint, A-measure 3-6 mm
111	Baso 26V	E423B15H10	3-20	3-30	SL, 103 µm paint, A-measure 3-6 mm
111	Basic 7018P	E424B42H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	Basic 7018P	E424B42H5	3-20	3-30	ML, 42 µm paint
111	Vandal	E424B42H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	Vandal	E424B42H5	3-20	3-30	ML, 42 µm paint
111	Conarc 51	E424B42H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	Conarc 51	E424B42H5	3-20	3-30	ML, 42 µm paint,
111	Conarc V180	E424B42H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	Conarc V180	E424B42H5	3-20	3-30	ML, 42 µm paint
136	Pipeliner G70M	T464PM2H10	3-20	3-30	SL, A-measure 3-6 mm
136	Pipeliner G60M-E	T464PM2H5	3-20	3-30	SL, A-measure 3-6 mm
138	Outershield MC710-H	T463MM2H5	3-20	3-30	SL, A-measure 3-6 mm Branches 45°
138	Outershield MC710RF-H	T463MM2H5	3-20	3-30	SL, A-measure 3-6 mm Branches 45°
138	Outershield MC715-H	T464MM2H5	3-20	3-30	SL, A-measure 3-6 mm
138	Outershield MC715-H	T464MM2H5	Ø8-32	3-30	SL, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 - C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
135	RM 70	G422MG3Si1	3-12	3-12	≥5

STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	ESB 40	E423B32H10	3-24***	3-12	≥5
111	ESB 42	E424B12H10	3-24***	3-12	≥5
111	ESB 42	E424B12H10	15-50***	-	-
111	ESB 45	E424B22H5	3-24***	3-12	≥5
111	ESB 45	E424B22H5	15-50***	-	-
111	ESB 48	E423B42H10	3-24***	3-12	≥5
111	ESB 50	E423B42H5	3-24***	3-12	≥5
111	ESB 52	E425B42H5	3-24***	3-12	≥5
135	MG 2	G424M213Si1	3-12	3-12	≥5
135	MG 20	G424M213Si1	3-12	3-12	≥5
136	FCW 11	T462PC1	-	-	≥5
136	FCW 11A	T462PC1H5	-	-	≥5
136	FCW 12	T462PM1	3-24	3-12	≥5
136	FCW 13	T462PC1H5	-	-	≥5
136	FCW 14	T463PM1H5	3-24*,***	3-12	≥5
136	FCW 16	T462PC1	-	-	≥5
136	FCW 17	T464PM1H5	3-24*,***	3-12	≥5
138	FCW 21	T464MM2H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
111	ESB 40	E423B32H10	3-20	3-30	SL, 103 µm paint, A-measure 3-6 mm
111	ESB42	E424B12H10	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	ESB42	E424B12H10	3-20	3-30	ML, 42 µm paint,
111	ESB45	E424B22H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	ESB45	E424B22H5	3-20	3-30	ML, 42 µm paint,
111	ESB 48	E423B42H10	3-20	3-30	SL, 103 µm paint, A-measure 3-6 mm
111	ESB 50	E423B42H5	3-20	3-30	SL, 103 µm paint, A-measure 3-6 mm

111	ESB 52	E425B42H5	3-20	3-30	SL, 133 µm paint, A-measure 3-6 mm
136	FCW 11	T462PC1	3-20	3-30	SL, A-measure 3-6 mm
136	FCW 11A	T462PC1H5	3-20	3-30	SL, A-measure 3-6 mm
136	FCW 12	T462PM1	3-20	3-30	SL, A-measure 3-6 mm
136	FCW 13	T462PC1H5	3-20	3-30	SL, A-measure 3-6 mm
136	FCW 16	T462PC1	3-20	3-30	SL, A-measure 3-6 mm
136	FCW 17	T464PM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	FCW 21	T464MM2H5	3-20	3-30	SL, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	7016 E	E383B12H10	3-24***	3-12	≥5
135	Italfil SG2	G424M213Si1	3-12	3-12	≥5
135	Italfil SG3	G464M214Si1	3-12	3-12	≥5
136	Megafil 713R	T464PM1H5	3-24*,***	3-12	≥5
136	Megafil 821R	T5061NiPM1H5	3-24*,***	3-12	≥5
138	Megafil 710M	T466MM1H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
136	Megafil 713R	T464PM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	Megafil 710M	T466MM1H5	3-20	3-30	SL, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
135	NST -Carbomig 2	G462M213Si1	3-12	3-12	≥5
136	NSSW - FC-1X	T462PMM211H10	3-24	3-12	≥5
136	NSSW - FC-1X	T462PC11H10**	-	-	≥5
136	NSSW - SF-1A	T422ZPM1H5	3-24*	3-12	≥5
136	NSSW - SF-1A	T422ZPM1H5	15-50*	-	-
136	NSSW - SF-3A	T464ZPM1H5	3-24*	3-12	≥5
138	NSSW - SM-3A	T424ZMM1H5	3-12	3-12	≥5
138	NSSW - SM-3A	T424ZMM1H5	12,5-50	-	-
138	NSSW - MCW-71	T464MM1H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
136	NST FC-1X	T462PMM211H10	3-20	3-30	SL, A-measure 3-6 mm
136	NST FC-1X	T462PC11H10**	3-20	3-30	SL, A-measure 3-6 mm C1 - Carbon dioxide
136	NSSW SF-1A	T422ZPM1H5	3-20	3-30	SL, A-measure 3-6 mm
136	NSSW SF-3A	T464ZPM1H5	3-20	3-30	SL, A-measure 3-6 mm
136	NSSW SF-1E	T422PC1H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm C1 - Carbon
136	NSSW SF-1E	T422PC1H5**	3-20	3-30	ML, 42 µm paint, C1 - Carbon
138	NSSW - MCW-71	T464MM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	NSSW - MCW-71	T464MM1H5	Ø8-32	3-30	SL, A-measure 3-6 mm
138	NSSW SM-3A	T424ZMM1H5	3-20	3-30	SL, A-measure 3-6 mm

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 - C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)

STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	Spezial	E383B12H10	3-24	3-12	≥5
111	Supercito	E425B32H5	3-24	3-12	≥5
135	Carbofil 1	G424M213Si1	3-12	3-12	≥5
135	Carbofil 1 Gold	G424M213Si1	3-12	3-12	≥5
135	Carbofil 1A Elite	G464M214Si1	3-12	3-12	≥5
135	Ultrafil 1	G424M213Si1	3-12	3-12	≥5
136	Fluxofil 14 HD	T463PM1H5	3-24*	3-12	≥5
136	Fluxofil 464M	T464PM1H5	3-24*,***	3-12	≥5
136	Fluxofil 71	T462PM1H5	3-24*,***	3-12	≥5
136	Citoflux R00	T423PM1H5	3-24*	3-12	≥5
138	Citoflux M60	T464MM1H5	3-24	3-12	≥5
138	Fluxofil M10	T464MM1H5	3-24	3-12	≥5
138	Fluxofil MC466M	T466MM1H5	3-24	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
136	Fluxofil 464M	T464PM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	Citoflux M60	T464MM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	Fluxofil M10	T464MM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	Fluxofil M10	T464MM1H5	Ø8-32	3-30	SL, A-measure 3-6 mm
138	Fluxofil MC466M	T466MM1H5	3-20	3-30	SL, A-measure 3-6 mm Branches 45°

* Metal core wire is used in the root run

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)



STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	Selectarc B56S	E424B42H5	3-24***	3-12	≥5
111	Selectarc B56S	E424B42H5	15-50***	-	-
111	Selectarc B7016Sp	E383B12H10	3-24***	3-12	≥5
111	Selectarc B58	E424B32H5	3-24***	3-12	≥5
111	Selectarc B58	E424B32H5	15-50***	-	-
111	Selectarc B7018S	E464B32H5	3-24***	3-12	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness		Additional information
			Thickness	Thickness 2	
111	Selectarc B56S	E424B42H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	Selectarc B56S	E424B42H5	3-20	3-30	ML, 42 µm paint
111	Selectarc B58	E424B32H5	3-20	3-30	SL, 42 µm paint, A-measure 3-6 mm
111	Selectarc B58	E424B32H5	3-20	3-30	ML, 42 µm paint

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)

STANDARD PROCEDURE					
Welding method ISO 4063	Product name	Classification	Cover range butt weld (mm)	Cover range fillet weld (SL) (mm)	Cover range fillet weld (ML) (mm)
111	AWS E 7018-1	E425B42H5	3-24	3-12	≥5
111	Fox 7018	E423B42H5	3-24	3-12	≥5
111	Phoenix Spezial D	E423B12H10	3-24	3-12	≥5
111	Phoenix K 50 R	E423B32H5	3-24	3-12	≥5
111	UTP 614 KB	E423B32H10	3-24	3-12	≥5
135	Böhler EMK 6	G424M213Si1	3-12	3-12	≥5
135	Böhler EMK 6 D	G423M213Si1	3-24	3-12	≥5
135	Böhler EMK 6 NC	G423M213Si1	3-24	3-12	≥5
135	Böhler EMK 8	G464M214Si1	3-24	3-12	≥5
135	Böhler EMK 8 D	G464M214Si1	3-24	3-12	≥5
135	Böhler EMK 8 NC	G464M214Si1	3-24	3-12	≥5
135	Böhler SG 2	G423M213Si1	3-12	3-12	≥5
136	TI 46 FD	T462PM1H10	3-24*	3-12	≥5
136	TI 46 T-FD	T463PM211H5	3-24*,**	3-12	≥5
136	TI 52 T-FD	T464PM1H5	3-24*	3-12	≥5
136	TI 52 W-FD	T464PM1H10	3-24*	3-12	-
136	TI 60 T-FD	T5061NiPM1H5	3-24*	3-12	≥5
138	HL 46 MC	T462MM1H5	3-24	3-12	≥5
138	HL 46 T-MC	T463MM211H5	3-24**	3-12	≥5
138	HL 51 FD	T464MM1H5	3-24	3-12	≥5
138	Diamondspark (HL 51 T-MC)	T466MM1H5	3-24	-	≥5
138	HL 51 L-MC	T466MM1H5	3-24	-	≥5

SPECIAL PROCEDURE FILLET WELD					
Welding method	Product name	Classification	Material thickness (mm)		Additional information
			Thickness 1	Thickness 2	
111	AWS E 7018-1	E425B42H5	3-20	3-30	SL, 133 µm paint, A-measure 3-6 mm
111	Böhler Fox EV 50	E425B42H5	3-20	3-30	SL, 133 µm paint, A-measure 3-6 mm
111	Böhler Fox EV 50-W	E425B42H5	3-20	3-30	SL, 133 µm paint, A-measure 3-6 mm
111	UTP 614 KB	E423B32H10	3-20	3-30	SL, 103 µm paint, A-measure 3-6 mm

* Metal core wire is used in the root run

111	FOX 7018	E423B42H5	3-20	3-30	SL, 103 µm paint, A-measure 3-6 mm
111	Phoenix Special D	E423B12H10	3-20	3-30	SL, 103 µm paint, A-measure 3-6 mm
136	TI 46 T-FD	T422PC1H5**	3-20	3-30	SL, 42 µm paint, A-measure 3-6
136**	TI 46 T-FD	T463PM211H5	3-20	3-30	SL, A-measure 3-6 mm
136	TI 52 T-FD	T464PM1H5	3-20	3-30	SL, A-measure 3-6 mm
138**	HL 46 T-MC	T463MM211H5	3-20	3-30	SL, A-measure 3-6 mm
138	HL 51 FD	T464MM1H5	3-20	3-30	SL, A-measure 3-6 mm
138	HL 51 FD	T464MM1H5	Ø8-32	3-30	SL, A-measure 3-6 mm
138	HL 51 L-MC	T464MM21H5	Ø8-32	3-30	SL, A-measure 3-6 mm
138	Diamondspark HL 51 T-MC	T466MM1H5	3-20	3-30	SL, A-measure 3-6 mm,
138	HL 51 L-MC	T466MM1H5	3-20	3-30	SL, A-measure 3-6 mm

** Welded with carbon dioxide ISO 14175 – C1

***SWPS impact testing to -20°C (reference to ISO 15614-1:2017 chapter 8.4.4)

The incorrect product name and classification may occur. The supplier's classification always applies before what is on this list.

Last updated **2022-12-08**



svetsprocedur