

WELDING PROCEDURES

How can a company share their welding procedures?

If a welding procedure is qualified in accordance with EN 15614, that procedure can be used to qualify a procedure in accordance with EN 15612, which implies a standard welding procedure. The values for the existing procedure are retained, but the correct company is the owner of the procedure (15612), i.e no uncertainties during audits or reviews.

Standard welding procedures can be used if, for example:

- there are no special customer requirements, but verified values are wanted.
- certain standards are used, e.g. ISO 3834, EN 1090-2 in execution class EXC 2.

Limits to the procedures

- Maximum yield strength: **355 MPa**. This means that steel with yield strengths of 235, 275 and 355 MPa can be welded.
- In the qualified procedure, **butt welds** are welded on plate with a thickness of 6mm, 12mm or 30mm. This provides a valid range of **3-12mm, 3-24mm and 15-60mm** respectively.
- The valid range for **multi-pass fillet welding includes all throat sizes**. This provides a valid **diameter range of 50 mm or more** for branch connections as well as a **material thickness of 5 mm or more**.
- The valid range for a **single-pass fillet welds** includes throat sizes of **3-6 mm**. This provides a valid **diameter range of 40 mm** or more as well as a **material thickness of 3-12 mm**.
- The shielding gas used is a mix of 82% Argon and 18% carbon dioxide (M21).

Special procedures

Our special procedures have different valid ranges from the standard procedures. The consumables for special procedures are listed below the respective standard procedures in the table.

- The valid range for multi-pass fillet welding **includes all throat sizes**. The welded thickness in the qualified procedure is 10 mm against 15 mm. The qualified sample is done on a pipe with a diameter of 120 mm against plate. This provides a valid diameter range of **60 mm or more**. The valid thickness range for material 1 is **5-20mm** and for material 2, **7.5-30mm**.
- **The valid range for a single-pass fillet weld includes throat sizes of 3-6mm**. The welded thickness in the qualified procedure is 10mm against 15mm. The qualified sample is done on a pipe with a diameter of 120 mm against plate. This provides a valid diameter range of **60 mm or more**. The valid thickness range for material 1 is **5-20mm** and for material 2, **7.5-30mm**.
- Welding using carbon dioxide as shielding gas only qualifies for welding with carbon dioxide.
- Welding with primer applies to both welding with paint and without.

Price

The price of our procedures is **EUR 500 apiece**, irrespective of welding method or material thickness. This includes the right to use the basic procedure and a printout of the procedure, as per SS-EN ISO 15612, by a third party. For express delivery, 0-5 days, a surcharge of EUR 25 per procedure will be added.

Colour coding

Yellow = Welded but no result obtained from testing yet.

If you have any questions concerning the valid ranges of our procedures, contact Svetsprocedur.se

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Available welding procedures / WPQR
Böhler / Voest Alpin / UTP (Standard procedure)

Welding method	Product name	Classification	Valid range, butt weld	Valid range, fillet weld (single-pass) (mm)	Valid range, fillet weld (multi-pass) (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 SG 2	G423M213SI1	3-12	3-12	≥5
136	TI 46 FD	T462PM1H10	3-24*	3-12	≥5
136	TI 52 T-FD	T464PMIH5	3-24*	3-12	≥5
136	TI 60 T-FD	T5061NIPMH5	3-24*	3-12	≥5
136	TI 52 W-FD	T464PM1H10	3-24*	3-12	≥5
138	HL 46 MC	T462MM1H5	3-24	3-12	≥5
138	HL 51 FD	T464MM1H5	3-24	3-12	≥5
138	HL 51 T-MC	T466MM1H5	3-24	3-12	≥5

Böhler / Voest Alpin / UTP (Special procedure)

Welding method	Product name	Classification	Material thickness		Miscellaneous information
			Thickness	Thickness	
111	AWS E 7018-1	E425B42H5	5-20	7.5-30	Single-pass, 42µm primer, A 3-6
111	UTP 614 KB	E423B32H10	5-20	7.5-30	Single-pass, A 3-6



(Standard procedure)

Welding method	Product name	Classification	Valid range, butt weld	Valid range, fillet weld (single-pass) (mm)	Valid range, fillet weld (multi-pass) (mm)
111	P48S	E424B42H5	3-24	3-12	≥5
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
138	MXA 100 XP	T464MM1H5	-	3-12	≥5
138	MXA 100	T424MM3H5	-	3-12	≥5



(Special procedure)

Welding method	Product name	Classification	Material thickness		Miscellaneous information
			Thickness	Thickness	
111	ELGA P48S	E424B42H5	5-20	7.5-30	Single-pass, 42µm primer, A 3-6
111	ELGA P48S	E424B42H5	5-20	7.5-30	Multi-pass, 42µm primer, A 3-6
111	ELGA P48M	E425B42H5	5-20	7.5-30	Single-pass, 42µm primer, A 3-6

ESAB (Standard procedure)

Welding method	Product name	Classification	Valid range, butt weld	Valid range, fillet weld (single-pass) (mm)	Valid range, fillet weld (multi-pass) (mm)
111	OK 48.00	E424B42H5	3-24	3-12	≥5
111	OK 48.05	E424B42H5	3-24	3-12	≥5
135	Autrod 12.50	G424M213Si1	3-12	3-12	≥5
135	Autrod 12.51	G423M213Si1	3-12	3-12	≥5
135	Autrod 12.64	G463M214Si1	3-12	3-12	≥5
136	Tubrod 15.13	T422PM1H5	3-24*	3-12	≥5
138	Tubrod 14.11	T424MM3H5	3-24	3-12	≥5
138	Coreweld 46LS	T464MM2H5	-	3-12	≥5

ESAB (Special procedure)

Welding method	Product name	Classification	Material thickness		Miscellaneous information
			Thickness	Thickness	
111	ESAB OK 48.00	E424B42H5	5-20	7.5-30	Single-pass, 42µm primer, A 3-6
111	ESAB OK 48.00	E424B42H5	5-20	7.5-30	Multi-pass, 42µm primer, A 3-6
111	ESAB OK 48.05	E424B42H5	5-20	7.5-30	Single-pass, 42µm primer, A 3-6
111	ESAB OK 48.05	E424B42H5	5-20	7.5-30	Multi-pass, 42µm primer, A 3-6

FILARC (Standard procedure)

Welding method	Product name	Classification	Valid range, butt weld	Valid range, fillet weld (single-pass) (mm)	Valid range, fillet weld (multi-pass) (mm)
111	Filarc 35	E424B42H5	3-24	3-12	≥5
136	PZ6113	T463PM2H5	3-24*	3-12	≥5
138	PZ6105R	T422MM3H5	3-24	3-12	≥5

FILARC (Special procedure)

Welding method	Product name	Classification	Material thickness		Miscellaneous information
			Thickness	Thickness	
111	Filarc 35	E424B42H5	5-20	7.5-30	Single-pass, 42µm primer, A 3-6
111	Filarc 35	E424B42H5	5-20	7.5-30	Multi-pass, 42µm primer, A 3-6



(Standard procedure)

Welding method	Product name	Classification	Valid range, butt weld	Valid range, fillet weld (single-pass) (mm)	Valid range, fillet weld (multi-pass) (mm)
135	GB74	G422MG3Si1	3-12	3-12	≥5
135	GB76	G422MG4Si1	3-12	3-12	≥5

Electrode Jesenice (Standard procedure)

Welding method	Product name	Classification	Valid range, butt weld	Valid range, fillet weld (single-pass) (mm)	Valid range, fillet weld (multi-pass) (mm)
111	EVB S	E424B12H10	3-24	3-12	≥5
111	EVB 50	E424B32H5	3-24	3-12	≥5

**(Standard procedure)**

Welding method	Product name	Classification	Valid range, butt weld	Valid range, fillet weld (single-pass) (mm)	Valid range, fillet weld (multi-pass) (mm)
135	SM-70	G424M213Si1	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
138	SC-70 ML	T464MM2H5	3-24	3-12	≥5

**(Special procedure)**

Welding method	Product name	Classification	Material thickness		Miscellaneous information
			Thickness	Thickness	
136	Supercored 71	T422PC1H10	5-20	7.5-30	Single-pass, A 3-6, CO2 gas
136	Supercored 71	T422PC1H10	3-24		Butt weld, CO2 gas

**(Standard procedure)**

Welding method	Product name	Classification	Valid range, butt weld	Valid range, fillet weld (single-pass) (mm)	Valid range, fillet weld (multi-pass) (mm)
111	Conarc 48	E464B42H5	3-24	3-12	≥5
136	Outershield 71E-H	T463PM1H5	3-24*	3-12	≥5
138	Outershield MC710-H	T463MM2H5	3-24	3-12	≥5

LUNA (Standard procedure)

Welding method	Product name	Classification	Valid range, butt weld	Valid range, fillet weld (single-pass) (mm)	Valid range, fillet weld (multi-pass) (mm)
135	RM 70	G422MG3Si1	3-12	3-12	≥5



(Standard procedure)

Welding method	Product name	Classification	Valid range, butt weld	Valid range, fillet weld (single-pass) (mm)	Valid range, fillet weld (multi-pass) (mm)
111	E 7016	E424B12H10	3-24	3-12	≥5
111	E 7016	E424B12H10	15-60	-	-
111	E 7018	E424B32H5	3-24	3-12	≥5
135	Carbomig 2	G462M213Si1	3-12	3-12	≥5
136	SF-1A	T422ZPM1H5	3-24*	3-12	≥5
136	SF-1A	T422ZPM1H5	15-60*	-	-
136	SF-3A	T464ZPM1H5	3-24*	3-12	≥5
138	SM-3A	T424ZMM1H5	-	3-12	≥5
138	MC1	T464MM1H5	-	3-12	≥5



(Special procedure)

Welding method	Product name	Classification	Material thickness		Miscellaneous information
			Thickness	Thickness	
111	E 7016	E424B12H10	5-20	7.5-30	Single-pass, 42µm primer, A 3-6
111	E 7016	E424B12H10	5-20	7.5-30	Multi-pass, 42µm primer, A 3-6
111	E 7018	E424B32H5	5-20	7.5-30	Single-pass, 42µm primer, A 3-6
111	E 7018	E424B32H5	5-20	7.5-30	Multi-pass, 42µm primer, A 3-6
136	Nittetsu SF-1A	T422ZPM1H5	5-20	7.5-30	Single-pass, A 3-6mm
136	Nittetsu SF-3A	T464ZPM1H5	5-20	7.5-30	Single-pass, A 3-6mm
136	Nittetsu SF-1E	T422ZPC1H5	5-20	7.5-30	Single-pass, A 3-6 42µm primer, CO2 gas.
136	Nittetsu SF-1E	T422ZPC1H5	5-20	7.5-30	Multi-pass, 42µm primer CO2 gas
138	Nittetsu SM-3A	T424ZMM1H5	5-20	7.5-30	Single-pass, A 3-6



(Standard procedure)

Welding method	Product name	Classification	Valid range, butt weld	Valid range, fillet weld (single-pass) (mm)	Valid range, fillet weld (multi-pass) (mm)
111	Spezial	E383B12H10	3-24	3-12	≥5
111	Supercito	E425B32H5	3-24	3-12	≥5
136	Fluxofil 14 HD	T463PM1H5	3-24*	3-12	≥5
136	Citoflux R00	T423PM1H5	3-24*	3-12	≥5
138	Citoflux M60	T464MM1H5	-	3-12	≥5

Since not all companies have consented to our using their logo for information purposes, these manufacturers' names appear in text format only.

**Welding wire filled with metal powder were used for the root.*

Incorrect use of product names, classifications and similar may appear. The manufacturer's classification always takes precedence before this list.

List last updated on 2017-03-06