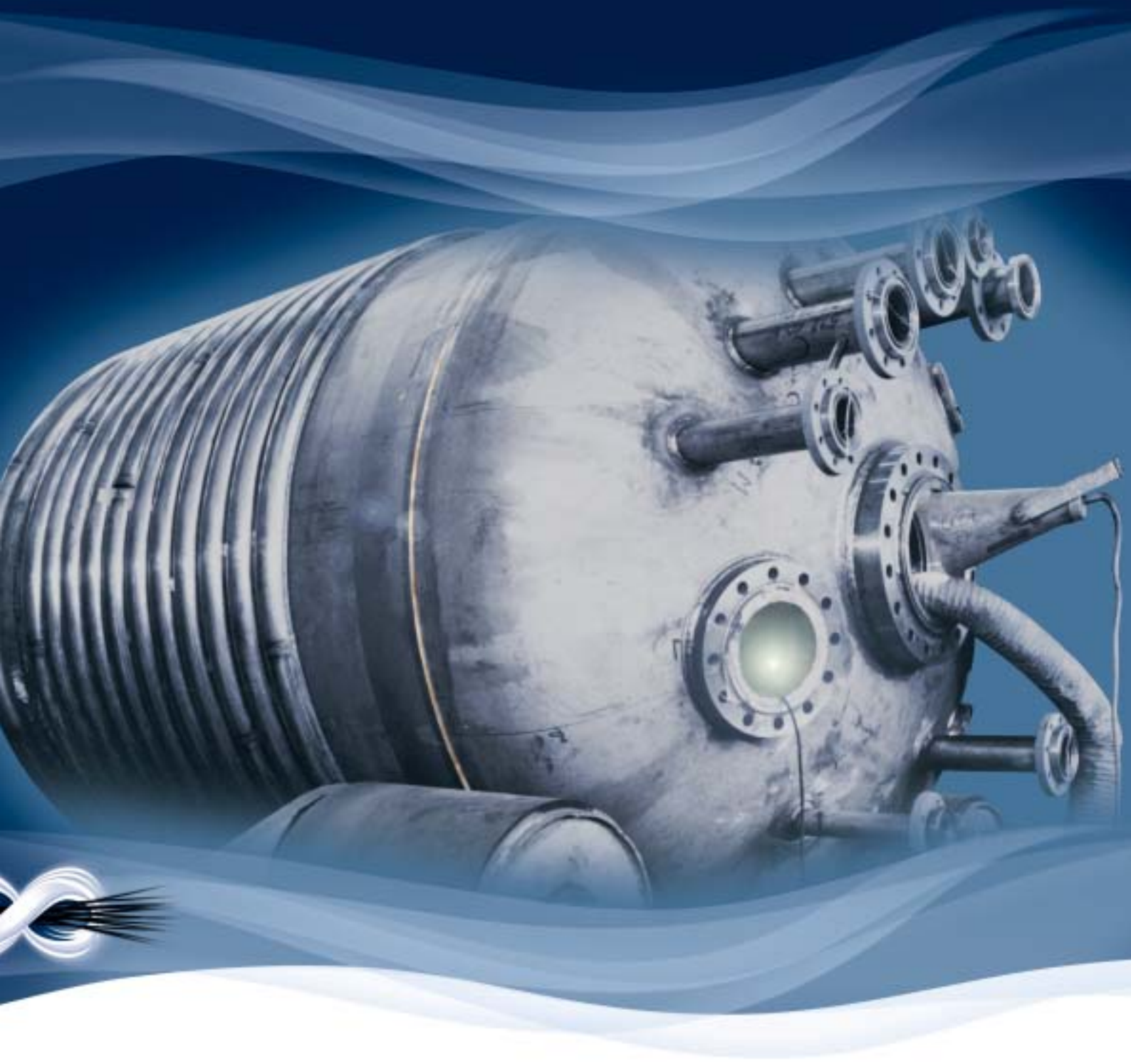
Böhler
WELDING



FLUX CORED WELDING WIRES FOR STAINLESS STEELS

Flux cored welding wires for stainless steels

BÖHLER Welding's flux cored wires combine the outstanding welding characteristics of BÖHLER's rutile stick electrodes with the productivity advantages of GMAW wires.

BÖHLER Welding's flux cored wires provide a powerful penetrating arc that deposits a smooth weld with minimum spatter formation.

Additionally, precise alloy adjustment ensure high quality welds with excellent corrosion resistance and mechanical properties.

To guarantee optimum weld metal chemistry and homogeneity all wires are manufactured utilizing austenitic stainless steel sheaths and agglomerated flux infills.

During manufacturing, an automatic system constantly monitors production ensuring that the flux fill is uniformly distributed throughout the entire length of the wire.

All wires are manufactured to DIN EN ISO 9001 quality system.

BÖHLER flux cored wires on basket spools, vacuum packaged in moisture resistant aluminized bags.

Features and benefits

- User friendly
- Reliable and consistent weld quality
- Smooth welding characteristics
- Minimum post weld cleaning
- Increased productivity
- Decreased welding costs

Pipe/flange joint weld made from duplex steel UNS S 31803 welded with BÖHLER CN 22/9 N-FD.

Take profit …

- from the cost effective flat & horizontal FCAW wires with their characteristics to provide fast travel speeds, reliable & consistent weld quality & smooth weld profiles
- from the unbeatable cost saving FCAW wires for positional welding
- from cost optimizing during sheet metal fabrication using 0.9 mm FCAW wires
- from decreasing downtimes to a minimum

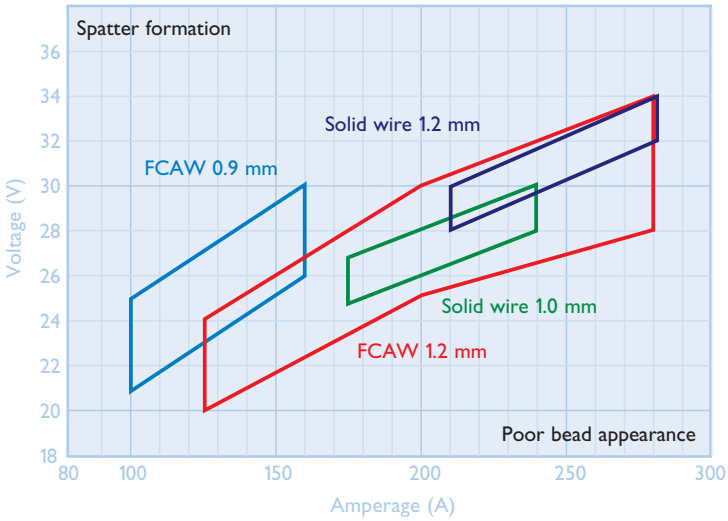
General benefits

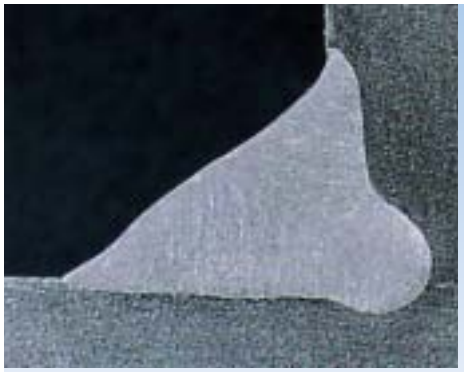
BÖHLER stainless steel flux cored welding wires offer a large tolerance window for welding parameters.

The wire enters the spray transfer mode typically from appr. 125 Amps. 22 Volts (for 1.2 mm wire, Ar/CO_2 gas mixture and at 100 A, 23 V for 0.9 mm wire) and produces a powerful penetrating arc that deposits a smooth spatter free weld metal.

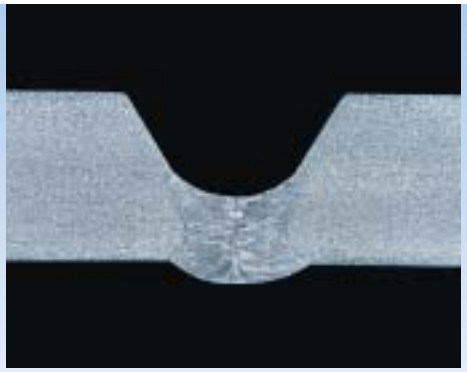
Welding parameters are easy to set up.

Unintentional operator changes to the welding settings can normally be tolerated without loss of quality. This results in excellent overall wire performance with reliable and consistent weld quality. This furthermore reduces the risk of weld defects and associated repair work costs.



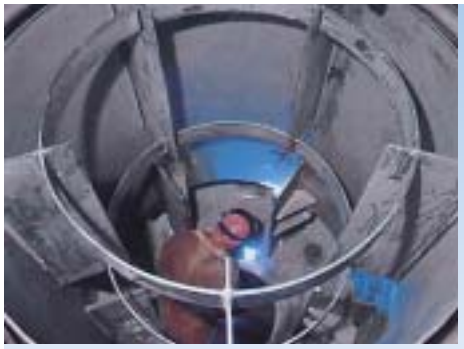


Solid wire ø 1.2 mm
The narrow arc causes deep „finger“ penetration which can give rise to lack of side wall fusion defects. As shown above, the bottom plate is hardly fused.

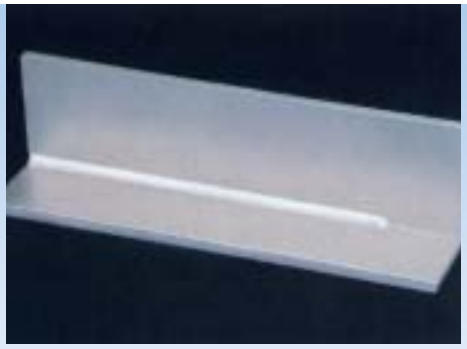


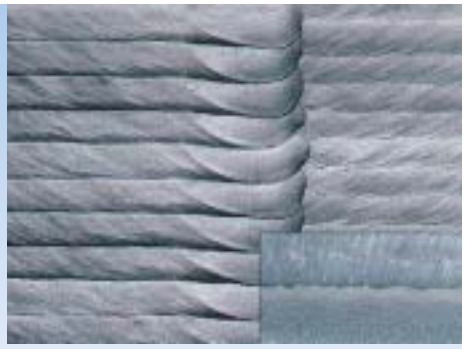
Flux cored wire ø 1.2 mm
Good root penetration and wetting characteristics with particularly high productivity on ceramic backing.

Flux cored wire ø 1.2 mm
The wide arc provides an uniform deep penetration with good side wall fusion and smooth weld profile.



BÖHLER stainless flux cored wires like our well known rutile electrodes produce weld metal with excellent bead appearance. The weld deposit is radiographically sound and spatter free with good wetting characteristics. The slag protects the weld pool from oxidation and is easily removed to reveal a smooth weld profile that requires minimum post weld cleaning.





Weld cladding welded with BÖHLER CN 23/12 Mo-FD (1st layer) and BÖHLER EAS 4M-FD (2nd layer). This is an ideal application for stainless steel flux cored wires due to their uniform ferrite levels and optimum corrosion resistance.

Cored wires have a wider arc column than solid wires. Therefore they operate with very safe penetration. The risk of lack of side wall fusion is minimized compared to solid wire welding even when the torch is slightly misdirected due to lack of welder concentration.

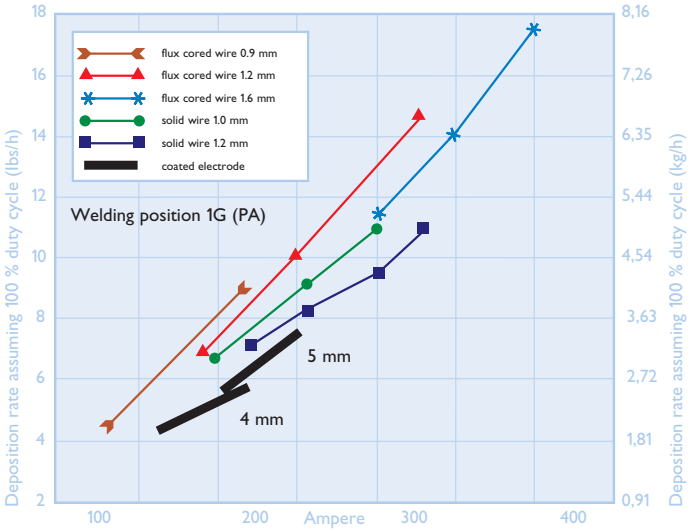
Cost saving potentials

In practical terms, the areas in which appreciable economies can be realized in a welding company will usually be restricted to:

- the selection of a more efficient welding process (deposition rate, lbs or kg/hr)
- mechanisation (increasing the effective arc-time)
- reduction of welding downtimes (grinding, slag and spatter removal, pickling etc.)

Cost comparisons

Although solid wires cost less than flux cored wires it is the overall total welding costs of the finished component that should be taken into consideration. Flux cored wires offer benefits that greatly reduce the overall welding costs, particularly in such areas as postweld cleaning, pickling, etc. which are often overlooked.



Flux cored wire	Shielding Gas	Wire Stick-Out
ø 0.9 mm	Argon + 18 % CO_2	15 mm
ø 1.2 / 1.6 mm	Argon + 18 % CO_2	20 mm
Solid wire	Argon + 2 % CO_2	12 mm

Apart from submerged arc welding, GMAW with flux cored wire is the most productive welding process.

The reason for this is the high current density (A/mm^2) due to the current mainly being conducted through the metal strip which represents a smaller cross sectional area than solid wires.

This in turn results in a resistance heating effect which causes the wire to melt faster and so promotes higher deposition rates and increased productivity.

The overall result being a reduction in welding time and thus a saving on the main cost which is labor.

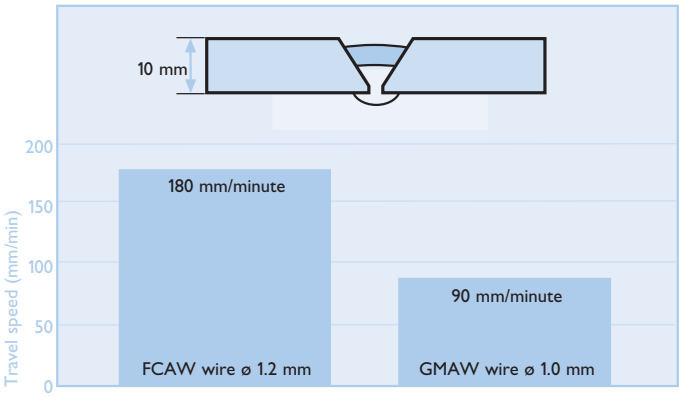
Your time saving

Most significant gains in time can be realized in positional welding when compared to pulse GMAW using solid wires.

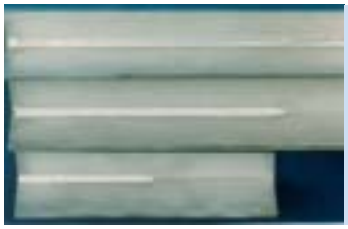
BÖHLER „PW"-wires provide, for instance, welding of vertical up welds in half the welding time in comparison to using pulse GMAW.

Productivity gains of 20 to 50 % can be obtained compared with GMAW using solid wires in the flat and horizontal welding position.

FCAW offers
100 % faster travel speed = half welding time



Butt weld, 2nd layer, 3G-up, base metal UNS S 31803, 10 mm plate



FCAW	850 mm
GMAW	700 mm
SMAW	280 mm

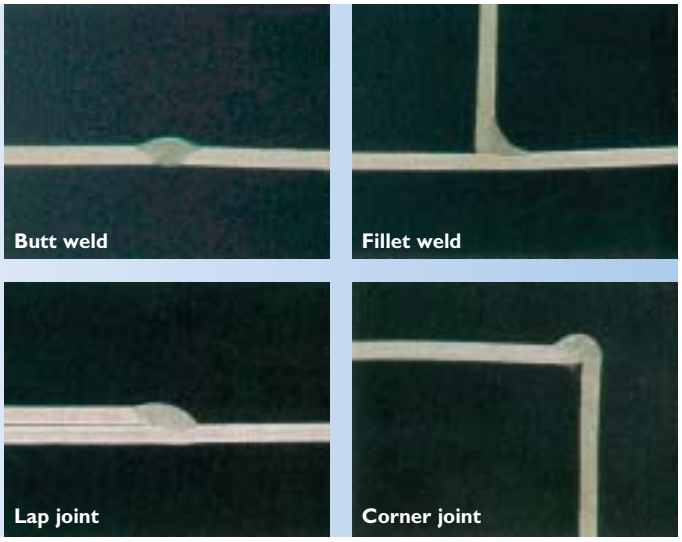
Comparable length of fillet welds made in one minute (throat: 3 mm, welding position 2F)

Additional cost savings due to

- Smooth welding characteristics & weld finish
- Little cleaning and pickling. Spatter and temper coloration is minimized
- Lower costs for the shielding gas
- Less distortion due to increased travel speeds
- Less repair work due to radiographically sound weld deposit and safe penetration

Sheet metal fabrication using BÖHLER 0.9 mm FCAW wires

- Ideal product for welding beads with small cross sectional area!
- For wall thicknesses ≥ 1.5 mm (1F, 2F, 3F down).
- Spray arc transfer with minimized spatter formation with as low as 100 A / 23 V / 9 m/min.
- Flat and smooth bead with good wetting characteristics and excellent bead appearance.
- Provides faster travel speeds, reduced heat input and less distortion!
- An excellent solution to save time and money in sheet metal fabrication!



Welding joints on 2 mm sheet metal

Lower-priced shielding gases

Stainless steel flux cored wires are welded using the commercially available shielding gases Argon +15-25 % CO_2 or 100 % CO_2. The gas flow rate is the same as when welding solid wires using Argon +2 % CO_2. This has a very positive influence on arc stability, producing a fine, spatter-free droplet transfer with safe penetration.

There is no carburization or burn-off of elements with an oxygen affinity, such as chromium, which would be unacceptable for corrosion reasons. This is assured due to the fact that each single metal droplet transfered in the arc is completely covered with slag thus preventing any reaction with the shielding gas.

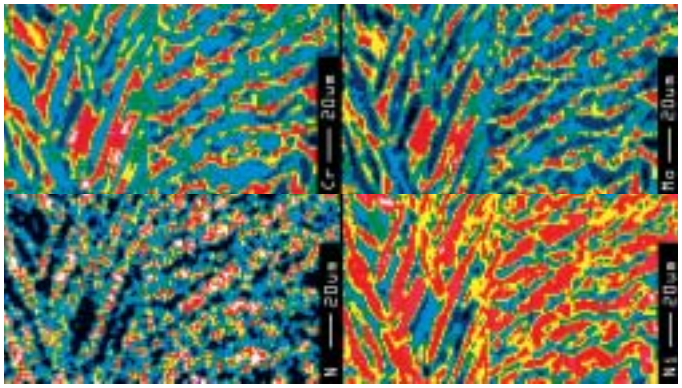
The cost benefits to the user result from lower gas costs as well as lower gas consumption due to shorter welding time.

Furthermore, with a piped bulk gas delivery and distribution system it is generally possible to make additional cost savings.

Metal droplet on a flux cored electrode

Complete covering of the droplet with rutile slag

Partially peeled slag after cooling off

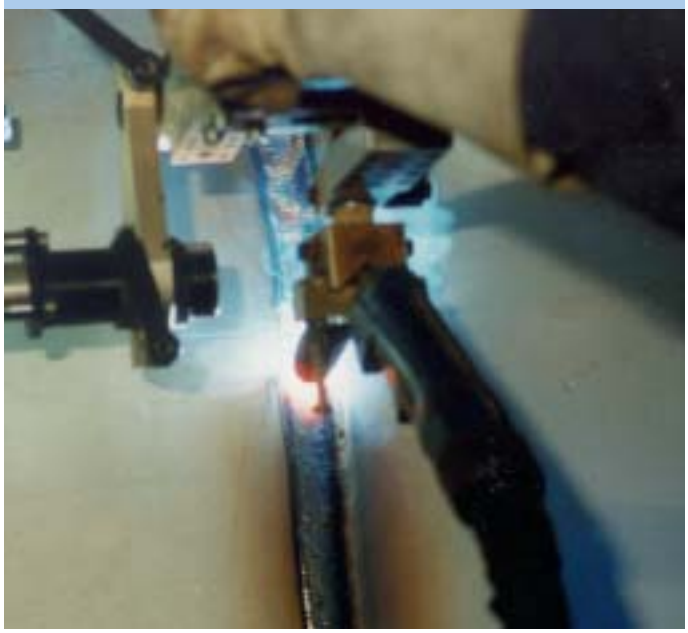


Electron probe microanalysis (EPMA) of the main alloying elements in the ferritic-austenitic microstructure of BÖHLER CN 22/9 PW-FD duplex weld metal

Additional process benefits

- Excellent suitability for **mechanized welding.**
- **Conventional MIG/MAG welding machines** are adequate for welding flux cored welding wires.
- Ease of handling and troublefree processing **make training and re-testing of the welders easier** while at the same time maintaining and **improving quality assurance aspects.**
- **Better accessibility** e.g. in single-bevel T-butt welds as a result of welding with longer stick out compared with solid wire.
- **Multi-pass weldability**.
  Very low temper coloration on the weld surface easily removed by brushing plus good wetting and self-releasing slag render multipass welding easier compared with solid wire especially in CrNi(Mo) steels with a higher chromium content. In addition, the amount of pickling required always remains low regardless of the number of passes.
- Ideal for **partial welds** and **tack welds.**
- **Reduced storage requirement**
  The most common wire diameter of 1.2 mm may be used universally for wall thicknesses above 3 mm thick with current intensities between 130 A to 280 A and spray-arc welding. In addition to this, there is 0.9 mm for sheet metal, as well as the highly efficient PW-type for positional welding also in diameter 1.2 mm. Use of the 1.6 mm dimensions is primarily useful to special applications in the current intensity range 280 – 350 A.

Mechanized welding with BÖHLER EAS 4 PW-FD



Application in the pulp industry

Minimum wall thicknesses

Type of weld	Welding position	Minimum wall thickness (mm)	
		0.9 mm	1.2 mm
fillet weld	2F (horizontal)	1.5	3.0
fillet weld	3F (vertical down)	1.5	3.0
fillet weld	3F (vertical up)	5.0	5.0*
butt weld	1G (flat)	1.5	3.0
butt weld	3G (vertical down)	2.0	3.0
butt weld	3G (vertical up)	5.0	5.0*

* for positional welding wires

Flux cored wires for flat and horizontal welding

Typical all weld metal properties **(shielding gas Argon +15-25% CO_2)**, as welded condition.
Abbreviations: YS = Yield Strength, TS = Tensile Strength, EL = Elongation, CVN = Impact Strength

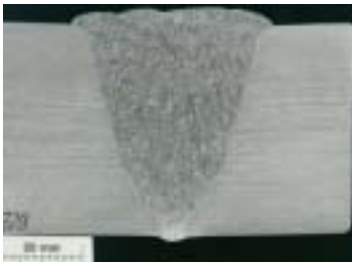
Designation BÖHLER Approvals	Sizes mm	Classification EN AWS	Chemical composition %	Mechanical properties N/mm²	Base metals and other characteristics
E 308 H-FD	1.2	**T Z19 9 H R M (C) 3** **E308HT0-4(1)**	C 0.05 Si 0.6 Mn 1.2 Cr 19.4 Ni 10.1	YS 390 TS 585 EL 42 % CVN 80 J	AISI 304 H, 321 H, 347 H, 304. Controlled ferrite content of 3 - 8 FN. Bi_{max} < 0,001 %. Suitable for service temperatures up to +700 °C.
EAS 2-FD TÜV-D, TÜV-A, CWB, GL, DB, ÖBB, SEPROZ, CE	0.9 1.2 1.6	**T 19 9 L R M (C) 3** **E308LT0-4(1)** ø 0.9 mm **T 19 9 L P M (C) 1** **E308LT1-4(1)**	C 0.03 Si 0.7 Mn 1.5 Cr 19.8 Ni 10.2	YS 380 TS 560 EL 40 % CVN 60 J ≥32 J … -196 °C	AISI 304 L, AISI 304, AISI 321, AISI 347, AISI 304 LN, AISI 302. Suitable for service temperatures from -196 °C to +350 °C.
SAS 2-FD TÜV-D, SEPROZ, CE	1.2 1.6	**T 19 9 Nb R M (C) 3** **E347T0-4(1)**	C 0.03 Si 0.6 Mn 1.4 Cr 19.0 Ni 10.4 Nb +	YS 420 TS 600 EL 35 % CVN 75 J ≥32 J … -196 °C	AISI 347, AISI 304, AISI 321, AISI 304 L, AISI 304 LN, AISI 302. Suitable for service temperatures from -196 °C to +400 °C.
EAS 4 M-FD TÜV-D, TÜV-A, CWB, GL, DB, SEPROZ, ÖBB, CE	0.9 1.2 1.6	**T 19 12 3 L R M (C) 3** **E316LT0-4(1)** ø 0.9 mm **T 19 12 3 L P M (C) 1** **E316LT1-4(1)**	C 0.03 Si 0.7 Mn 1.5 Cr 19.0 Mo 2.7 Ni 12.0	YS 400 TS 560 EL 38 % CVN 55 J ≥32 J … -120 °C	AISI 316 L, AISI 316, AISI 316 Ti, AISI 316 Cb, AISI 316 LN. Suitable for service temperatures from -120 °C to +400 °C.
SAS 4-FD	1.2 1.6	**T 19 12 3 Nb R M (C) 3** **E318T0-4(1)**# # at the moment not classified according AWS A5.22-95	C 0.03 Si 0.6 Mn 1.3 Cr 18.8 Mo 2.6 Ni 12.2 Nb +	YS 430 TS 570 EL 35 % CVN 65 J ≥32 J … -120 °C	AISI 316 Cb, AISI 316 Ti, AISI 316, AISI 316 L. Suitable for service temperatures from -120 °C to +400 °C.
E 317 L-FD	1.2 1.6	**T Z19 13 4 L R M (C) 3** **E317LT0-4(1)**	C ≤ 0.035 Si 0.7 Mn 1.3 Cr 18.8 Mo 3.4 Ni 13.1	YS 420 TS 570 EL 32 % CVN 50 J ≥32 J … -60 °C	For CrNiMo-steels (3-4 % Mo) AISI 317 L, AISI 316 LN, AISI 316 L, AISI 317 LN. With high corrosion resistance at service temperatures from -60 °C to +300 °C.
CN 22/9 N-FD TÜV-D, ABS, DNV, GL, RINA, SEPROZ, CWB, CE	1.2	**T 22 9 3 NL R M (C) 3** **E2209T0-4(1)**	C ≤ 0.03 Si 0.8 Mn 0.9 Cr 22.7 Mo 3.2 Ni 9.0 N 0.13 PRE_N ≥ 35	YS 600 TS 800 EL 27 % CVN 60 J ≥32 J … -40 °C	UNS S31803, UNS S32205, 1.4462 similar and dissimilar joints. PRE_N ≥ 35. CPT ASTM G48/A or ASTM A923 Method C … 22 °C, Ferrite 30 - 50 FN. Suitable for service temperatures from -40 °C to +250 °C.
A 7-FD	1.2 1.6	**T 18 8 Mn R M (C) 3** **E307T0-G**	C 0.1 Si 0.8 Mn 6.8 Cr 18.8 Ni 9.0	YS 420 TS 630 EL 39 % CVN 60 J ≥32 J … -100 °C Hardness 200 HB, Cold-workhardened up to 400 HV.	Universal application! Very tough & crack resistant alloy. Service temperatures -100 °C up to scaling resistance of +850 °C.
CN 23/12-FD TÜV-D, TÜV-A, CWB, GL, DB, ÖBB, LR, SEPROZ, CE	0.9 1.2 1.6	**T 23 12 L R M (C) 3** **E309LT0-4(1)** ø 0.9 mm **T 23 12 L P M (C) 1** **E309LT1-4(1)**	C 0.03 Si 0.7 Mn 1.4 Cr 22.8 Ni 12.5	YS 400 TS 540 EL 35 % CVN 60 J ≥32 J … -60 °C	Dissimilar joints between high alloyed Cr- and CrNi-steels to un- and low alloyed steels. Also for weld cladding. For service temperatures from -60 °C to +300 °C.
CN 23/12 Mo-FD TÜV-D, TÜV-A, ABS, GL, DNV, DB, ÖBB, RINA, SEPROZ, CE	0.9 1.2 1.6	**T 23 12 2 L R M (C) 3** **E309LMoT0-4(1)** ø 0.9 mm **T 23 12 2 L P M (C) 1** **E309LMoT1-4(1)**	C 0.03 Si 0.6 Mn 1.4 Cr 22.7 Mo 2.7 Ni 12.3	YS 500 TS 700 EL 30 % CVN 55 J ≥32 J … -60 °C	Dissimilar joints between high alloyed Cr- and CrNi(Mo)-steels to un- and low alloyed steels. Also for Mo containing weld cladding. For service temperatures from -60 °C to +300 °C.
NIBAS 70/20-FD TÜV-D	1.2 1.6	**Typ Ni 6082** **(NiCr20Mn3 Nb)** **ENiCr-3T0-4**	C 0.03 Si 0.4 Mn 3.2 Cr 19.6 Nb 2.5 Fe ≤ 2.0 Ni bal. Ti +	YS 400 TS 650 EL 39 % CVN 135 J 110 J … -196 °C	Alloy 600, 2.4640 Ni Cr 15 Fe, 2.4817 LC-NiCr 15 Fe, 2.4867 NiCr 6015. Nickel base FCAW wire. For welding of nickel base alloys, high temperature steels, heat resisting and croyogenic materials, dissimilar joints. Suitable service temp. -196 °C up to scaling resistance of +1200 °C (S-free atmosphere)
CN 13/4-MC SEPROZ	1.2 1.6	**T 13 4 M M 2** **EC410NiMo (mod.)**	C ≤ 0.025 Si 0.7 Mn 0.9 Cr 12.0 Ni 4.6 Mo 0.6	Wbh: (a) 580 °C/8H YS 760 TS 900 EL 16 % CVN 65 J ≥47 J … -20 °C	1.4317, 1.4313, 1.4351, ACI Grade CA 6 NM, 1.4414 For the fabrication and repair welding of hydro turbine components made of soft martensitic 13 % Cr, 4 % Ni alloyed steels and cast steels.

Flux cored wires for positional welding

Typical all weld metal properties **(shielding gas Argon +15-25% CO_2)**, as welded condition.
Abbreviations: YS = Yield Strength, TS = Tensile Strength, EL = Elongation, CVN = Impact Strength

Designation BÖHLER Approvals	Sizes mm	Classification EN AWS	Chemical composition %	Mechanical properties N/mm²	Base metals and other characteristics
E 308 H PW-FD	1.2	**T Z19 9 H P M (C) 1** **E308HT1-4(1)**	C 0.05 Si 0.6 Mn 1.2 Cr 19.4 Ni 10.1	YS 390 TS 585 EL 42 % CVN 90 J	For creep resistant austenitic CrNi-steels like AISI 304 H, 321 H, 347 H, 304. Controlled ferrite content of 3 - 8 FN. Bi_{max} 0,001 %. Suitable for service temperatures up to +700 °C.
EAS 2 PW-FD TÜV-D, CWB, DB, SEPROZ, ÖBB, CE	1.2 1.6	**T 19 9 L P M (C) 1** **E308 LT1-4(1)**	C 0.03 Si 0.7 Mn 1.5 Cr 19.8 Ni 10.2	YS 380 TS 560 EL 40 % CVN 70 J ≥32 J … -196 °C	AISI 304 L, AISI 304, AISI 321, AISI 347, AISI 304 LN, AISI 302. Suitable for service temperatures from -196 °C to +350 °C.
SAS 2 PW-FD TÜV-D, SEPROZ, CE	1.2	**T 19 9 Nb P M (C) 1** **E347T1-4(1)**	C 0.03 Si 0.7 Mn 1.4 Cr 19.0 Ni 10.4 Nb +	YS 420 TS 600 EL 35 % CVN 75 J ≥32 J … -120 °C	AISI 347, AISI 304, AISI 321, AISI 304 L, AISI 304 LN, AISI 302. Suitable for service temperatures from -120 °C to +400 °C.
EAS 4 PW-FD TÜV-D, CWB, DB, SEPROZ, ÖBB, CE	1.2 1.6	**T 19 12 3 L P M (C) 1** **E316LT1-4(1)**	C 0.03 Si 0.7 Mn 1.5 Cr 19.0 Mo 2.7 Ni 12.0	YS 400 TS 560 EL 38 % CVN 65 J ≥32 J … -120 °C	AISI 316 L, AISI 316, AISI 316 Ti, AISI 316 Cb, AISI 316 LN. Suitable for service temperatures from -120 °C to +400 °C.
SAS 4 PW-FD TÜV-D, CE	1.2	**T 19 12 3 Nb P M (C) 1** **E318T1-4(1)**# # at the moment not classified according AWS A5.22-95	C 0.03 Si 0.6 Mn 1.3 Cr 18.8 Mo 2.6 Ni 12.2 Nb +	YS 430 TS 570 EL 35 % CVN 65 J 40 J … -120 °C	AISI 316 Cb, AISI 316 Ti, AISI 316 L, AISI 316. Suitable for service temperatures from -120 °C to +400 °C.
E 317 L PW-FD BV	1.2	**T Z19 13 4 L P M (C) 1** **E317LT1-4(1)**	C ≤ 0.035 Si 0.7 Mn 1.3 Cr 18.8 Mo 3.4 Ni 13.1	YS 380 TS 560 EL 39 % CVN 58 J ≥32 J … -60 °C	For CrNiMo-steels with increased Mo-content, resp. for corrosion resistant claddings and mild steels, AISI 317L, 317LN, 316 L, 316 LN. Excellent positional welding charac-teristics and fast travel speeds.
CN 22/9 PW-FD TÜV-D, ABS, CWB, DNV, GL, RINA, SEPROZ, CE	1.2	**T 22 9 3 NL P M (C) 1** **E2209T1-4(1)**	C ≤ 0.03 Si 0.8 Mn 0.9 Cr 22.7 Mo 3.2 Ni 9.0 N 0.13 $PREN$ ≥ 35	YS 600 TS 800 EL 27 % CVN 80 J 45 J … -46 °C	UNS S31803, UNS S32205, 1.4462 similar and dissimilar joints. $PREN$ ≥ 35. CPT ASTM G48/A or ASTM A923 Method C… 22 °C, Ferrite 30-50 FN. Suitable for service temperatures from -50 °C to +250 °C.
A 7 PW-FD	1.2	**T 18 8 Mn P M (C) 2** **E307T1-G**	C 0.1 Si 0.8 Mn 6.8 Cr 19.0 Ni 9.0	YS 420 TS 630 EL 39 % CVN 60 J ≥32 J … -100 °C	Universal application. Very tough & crack resistant alloy.Service temperatures -100 °C up to scaling resistance of +850 °C.
CN 23/12 PW-FD TÜV-D, ABS, SEPROZ, CWB, DB, ÖBB, CE	1.2 1.6	**T 23 12 L P M (C) 1** **E309LT1-4(1)**	C 0.03 Si 0.7 Mn 1.4 Cr 22.8 Ni 12.5	YS 400 TS 540 EL 35 % CVN 65 J 50 J … -60 °C	Dissimilar joints between high alloyed Cr- and CrNi-steels to un- and low alloyed steels. Also for weld cladding. For service temperatures from -60 °C to +300 °C.
CN 23/12 Mo PW-FD TÜV-D, SEPROZ, BV, CE	1.2	**T 23 12 2 L P M (C) 1** **E309LMoT1-4(1)**	C 0.03 Si 0.7 Mn 1.4 Cr 22.7 Mo 2.7 Ni 12.3	YS 530 TS 720 EL 32 % CVN 65 J 50 J … -60 °C	Dissimilar joints between high alloyed Cr- and CrNi(Mo)-steels to un- and low alloyed steels. Also for Mo containing weld cladding. For service temperatures from -60 °C to +300 °C.

- Offers complete welder appeal.
- Easy to operate in all welding positions with one single parameter setting using Argon mixtures or CO_2.
- Powerful penetrating arc, spray transfer, minimum spatter formation, self releasing slag, excellent wetting behaviour, flat and smooth bead profile.
- Fast travel speeds and a wide range of operating parameters offer highest productivity.
- BÖHLER offers an outstanding range of products for high quality welds and considerable cost savings when positional welding.



Macro section from a 49 mm wall S 31803 duplex stainless steel pipe weld for the off-shore industry.

BÖHLER EAS 4 PW-FD with self-releasing slag and X-ray quality weld deposit.

Operating Parameters

Flat and horizontal welding positions

Welding position	Type of joint	Wall thicknesses mm	Wire ø mm	Amperage A	Voltage V	Wire feed speed m /minute
downhand and horizontal	lap joint + I-joint	1,5 - 4	0.9	100 - 160	22 - 28	8.0 - 15.0
	I-joint	3 - 5	1.2	130 - 150	23 - 24	4.5 - 6.0
	V-groove, root	5 - 15	1.2	130 - 150	22 - 24	4.5 - 6.0
	V-groove, fill+cap	5 - 15	1.2	200 - 280	26 - 30	8.5 - 14.5
	V-groove, fill+cap	10 - 20	1.6	200 - 350	25 - 33	4.5 - 9.5
	fillet weld	1,5 - 5	0.9	100 - 160	23 - 28	8.0 - 15.0
	fillet weld	3 - 7	1.2	130 - 220	22 - 28	4.5 - 10.0
	fillet weld	7 - 15	1.2	200 - 280	26 - 30	8,5 - 14.5
	fillet weld	8 - 20	1.6	200 - 350	25 - 33	4.5 - 9.5

Limit the length of arc to 3 mm with 0.9 mm wire
5 mm with 1.2 mm wire

The trailing torch angle permits good weld pool control while at the same time promoting defect free sidewall fusion, despite high deposition rates.

Torch positioning, flat and horizontal welding positions

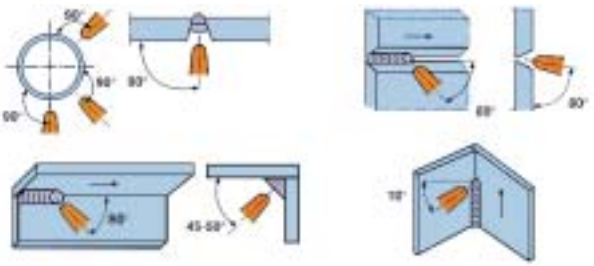
Positional welding

Optimum parameter settings for 1.2 mm wire — **Range of welding parameters**

Welding position	Type of joint	Amperage A	Voltage V	Wire feed speed m/min.	Amperage A	Voltage V	Wire feed speed m/min.
vertical up 3G, 3F	V-groove, root pass	130 - 140	23 - 26	6 - 6.5	130 - 200	22 - 30	6 - 11
	V-groove, filler and cap	150 - 180	24 - 28	7 - 9			
	Fillet weld	150 - 180	24 - 28	7 - 9			
overhead 4G, 4F	V-groove, root pass	140 - 170	24 - 28	6.5 - 9	130 - 200	22 - 30	6 - 11
	V-groove, filler and cap	180 - 200	26 - 29	9 - 11			
	Fillet weld	180 - 200	26 - 29	9 - 11			
horizontal 2G flat postion 1G	V-groove, root pass	140 - 150	23 - 25	6.5 - 7	130 - 250	22 - 32	6 - 13
	V-groove, filler and cap	170 - 190	26 - 28	8 - 10			

Limit the length of arc to 3 mm with 1.2 mm postional welding wire

Torch positioning, positional welding.
Slight weaving is recommended for all welding positions



General

Dependent on the characteristics of the welding machine optimum parameter setting can vary accordingly. Recommended shielding gases are Argon +15-25 % CO_2 or 100 % CO_2. (When using 100 % CO_2 it is necessary to increase the welding voltage by 2 Volts!). The gas flow rate should be 15-18 l/min. The wire stick-out should be 12-25 mm when welding 1.2-1.6 mm wires and 12-20 mm when welding 0.9 mm wires. Adequate fume extraction is recommended as always when welding stainless steels. Rebaking: 150 °C, if necessary!

Packaging

Available packaging, basket spool B 300

.035”	0.9 mm	25 lb	(12,5 kg)
.045”	1.2 mm	33 lb	(15 kg)
1/16”	1.6 mm	33 lb	(15 kg)

For other forms of supply please contact your BÖHLER representative.

All wires are vacuum packaged in moisture resistant alumini-zed bags for maximum protection.

BÖHLER Welding’s flux cored wires are precision layer wound and have excellent feeding characteristics.

Some applications

Dewatering-filter for the pulp industrie, base metal 1.4306 / AISI 304 L, welded with BÖHLER EAS 2-FD

Chemical carrier, cargo vessels, UNS S 31803

Apparatus construction: duplex steel UNS S31803 / 1.4462, wall thickness 30-40 mm, welded with BÖHLER CN 22/9 N-FD

Dissimilar joint weld 3F, welded with BÖHLER CN 23/12 Mo PW-FD

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