

# Cored Wires for Lasting Connections

The Complete Range of  
Flux & Metal-Cored Wires



# General Benefits when Welding with Böhler Welding Cored Wires

The high deposition rate and deposition efficiency of Böhler flux-cored wires lead to a significant reduction of total welding costs through:

- Less welding time, less spatter and less cleaning time
- Excellent weldability especially with wires for welding in all positions
- Thin plates from 0.6 mm with metal-cored wires and thicker plates up to 100 mm with flux-cored types



## High-Alloyed Steels

### Flux-Cored Wires

Soft-martensitic steels	Böhler Welding Product	EN ISO	AWS
13Cr-4Ni	BÖHLER CN 13/4-PW-FD	T 13 4 P M21/C1 1 (H5)	E410NiMoT1-4/1 (H4)
Austenitic stainless steels			
AISI 304L	BÖHLER EAS 2-FD	T 19 9 L R M21/C1 3	E308LT0-4/1
	BÖHLER EAS 2 PW-FD	T 19 9 L P M21/C1 1	E308LT1-4/1
Low ferrite	BÖHLER EAS 2 PW-FD (LF)	T 19 9 L P M21/C1 1	E308LT1-4/1
	Avesta FCW-2D 308L/MVR	T 19 9 L R M21/C1 3	E308LT0-4/1
	Avesta FCW 308L/MVR-PW	T 19 9 L P M21/C1 1	E308LT1-4/1
Low ferrite	Avesta FCW 308L/MVR Cryo	T 19 9 L P M21/C1 1	E308LT1-4/1
AISI 316L	BÖHLER EAS 4 M-FD	T 19 12 3 L R M21/C1 3	E316LT0-4/1
	BÖHLER EAS 4 PW-FD	T 19 12 3 L P M21/C1 1	E316LT1-4/1
Low ferrite	BÖHLER EAS 4 PW-FD (LF)	T Z19 12 3 L P M21/C1 1	E316LT1-4/1
	Avesta FCW-2D 316L/SKR	T 19 12 3 L R M21/C1 3	E316LT0-4/1
	Avesta FCW 316L/SKR-PW	T 19 12 3 L P M21/C1 1	E316LT1-4/1
AISI 347	BÖHLER SAS 2-FD	T 19 9 Nb R M21/C1 3	E347T0-4/1
	BÖHLER SAS 2 PW-FD	T 19 9 Nb P M21/C1 1	E347T1-4/1
Low ferrite	BÖHLER SAS 2 PW-FD (LF)	T 19 9 Nb P M21/C1 1	E347T1-4/1
AISI 316Cb	BÖHLER SAS 4-FD	T 19 12 3 Nb R M21/C1 3	"E318T0-4/1"
	BÖHLER SAS 4 PW-FD	T 19 12 3 Nb P M21/C1 1	"E318T1-4/1"
AISI 317L	BÖHLER E 317L-FD	T Z19 13 4 L R M21/C1 3	E317LT0-4/1
	BÖHLER E 317L PW-FD	T Z19 13 4 L P M21/C1 1	E317LT1-4/1

<b>Duplex stainless steels</b>				
Lean duplex		Avesta FCW-2D LDX 2101	T 23 7 N L R M21/C1 3	E2307T0-4/1
		Avesta FCW LDX 2101-PW	T 23 7 N L P M21/C1 1	E2307T1-4/1
		Avesta FCW-2D 2304	T 23 7 N L R M21/C1 3	E2307T0-4/1
		Avesta FCW 2304-PW	T 23 7 N L P M21/C1 1	E2307T1-4/1
Duplex		Avesta FCW-2D 2205	T 22 9 3 N L R M21/C1 3	E2209T0-4/1
		Avesta FCW 2205-PW	T 22 9 3 N L P M21/C1 1	E2209T1-4/1
		BÖHLER CN 22/9 N-FD	T 22 9 3 N L R M21/C1 3	E2209T0-4/1
		BÖHLER CN 22/9 PW-FD	T 22 9 3 N L P M21/C1 1	E2209T1-4/1
		Avesta FCW LDX 2404-PW	T Z 25 9 4 N L P M21/C1 2	E2594T1-G
Super duplex		Avesta FCW 2507/P100-PW	T 25 9 4 N L P M21/C1 2	E2594T1-4/1
		Avesta FCW 2507/P100-PW NOR	T 25 9 4 N L P M21/C1 2	E2594T1-4/1
<b>Dissimilar joints</b>				
Special applications		BÖHLER A 7-FD	T 18 8 Mn R M21/C1 3	E307T0-G
		BÖHLER A 7 PW-FD	T 18 8 Mn P M21/C1 2	E307T1-G
		BÖHLER CN 23/12-FD	T 23 12 L R M21/C1 3	E309LT0-4/1
		BÖHLER CN 23/12 PW-FD	T 23 12 L P M21/C1 1	E309LT1-4/1
		Avesta FCW-2D 309L	T 23 12 L R M21/C1 3	E309LT0-4/1
		Avesta FCW 309L-PW	T 23 12 L P M21/C1 1	E309LT1-4/1
		BÖHLER CN 23/12 Mo-FD	T 23 12 2 L R M21/C1 3	E309LMoT0-4/1
		BÖHLER CN 23/12 Mo PW-FD	T 23 12 2 L P M21/C1 1	E309LMoT1-4/1
<b>High-temperature and creep-resistant steels</b>				
AISI 304 H	Bi-free	BÖHLER E 308 H-FD	T Z19 9 H R M21/C1 3	E308HT0-4/1
	Bi-free	BÖHLER E 308 H PW-FD	T Z19 9 H P M21/C1 1	E308HT1-4/1
	Bi-free	BÖHLER E 309L H-FD	T 23 12 L R M21/C1 3	E309LT0-4/1
	Bi-free	BÖHLER E 309L H PW-FD	T 23 12 L P M21/C1 1	E309LT1-4/1
AISI 347, AISI 321	Bi-free	BÖHLER E 347L H-FD	T 19 9 Nb R M21/C1 3	E347T0-4/1
	Bi-free	BÖHLER E 347 H PW-FD	T 19 9 Nb P M21/C1 1	E347HT1-4/1
<b>Nickel-base alloys</b>				
Alloy 600		BÖHLER NIBAS 70/20-FD	T Ni 6082 R M21 3	ENiCr3T0-4
		BÖHLER NIBAS 70/20 Mn-FD	T Ni 6083 R M21 3	ENiCr3T0-4 (mod.)
Alloy 625		BÖHLER NIBAS 625 PW-FD	T Ni 6625 P M21 2	ENiCrMo3T1-4

## Metal-Cored Wires

<b>Austenitic stainless steels</b>	<b>Böhler Welding Product</b>	<b>EN ISO</b>	<b>AWS</b>
AISI 304L	BÖHLER EAS 2-MC	T 19 9 L M M12 2	EC308L
AISI 316L	BÖHLER EAS 4 M-MC	T 19 12 3 L M M12 2	EC316L
<b>Ferritic stainless steels</b>			
AISI 430	BÖHLER CAT 430L Cb-MC	T Z17 Nb M M12 1	EC439Nb
	BÖHLER CAT 430L Cb Ti-MC	T Z17 Nb Ti L M M12 1	EC430G / EC439Nb
AISI 439	BÖHLER CAT 439L Ti-MC	T Z17 Ti L M M12 1	EC439
<b>Soft-martensitic steels</b>			
13Cr-4Ni steels	BÖHLER CN 13/4-MC	T 13 4 M M12 2	EC410NiMo (mod.)
	BÖHLER CN 13/4-MC (F)	T 13 4 M M12 2	EC410NiMo (mod.)
	High impact values	BÖHLER CN 13/4-MC HI	T 13 4 M M12 2
<b>Dissimilar joints</b>			
Special applications	BÖHLER A 7-MC	T 18 8 Mn M M12 1	EC307 (mod.)
	BÖHLER CN 23/12-MC	T 23 12 L M M12 2	EC309L
AISI 305	BÖHLER FF-MC	T 22 12 H M M13 1	EC309H (mod.)



# Unalloyed Steels

## Flux-Cored Wires

Special feature	Böhler Welding Product	EN ISO	AWS
	BÖHLER Ti 42 T-FD	T 46 2 R M 3 H5 / T 42 0 R C 3 H5	E70T1-M21A0-CS1-H4 / E70T1-C1AZ-CS1-H4
	BÖHLER Ti 46-FD	T 46 2 P M 1 H10 / T 42 2 P C 1 H5	E71T1-M21A0-CS1-H8 / E71T1-C1A0-CS1-H4
	BÖHLER Ti 52-FD	T 46 4 P M 1 H10 / T 42 2 P C 1 H5	E71T1-M21A4-CS1-H8 / E71T1-C1A2-CS1-H4
	BÖHLER Ti 52 T-FD	T 46 4 P M 1 H5 / T 46 2 P C 1 H5	E71T1-M21A4-CS1-H4 / E71T1-C1A2-CS1-DH4
Stress relief	BÖHLER Ti 52 T-FD (HP)	T 46 5 P M 1 H5 / T 42 2 P C 1 H5	E71T1-M21AP6-CS2-H4 / E71T1-C1A0-CS2-H4
Stress relief	BÖHLER Ti 52 T-FD SR (CO <sub>2</sub> )	T 42 4 P C 1 H5	E71T12-C1AP4-CS2-H4

## Metal-Cored Wires

Special feature	Böhler Welding Product	EN ISO	AWS
Low silicate type	BÖHLER HL 46-MC	T 46 2 M M 1 H5	E70C-6MH4
	BÖHLER HL 51-MC	T 46 4 M M 1 H5	E70C-6MH4
	BÖHLER HL 51 T-MC	T 46 6 M M 1 H5 / T 42 5 M C 1 H5	E70T15-M21A8-CS1-H4 / E70T15-C1A6-CS1-H4
Galvanized steels	BÖHLER HL 46 GS T-MC	T 46 Z M 1 H5	E70T15-M21AZ-CS1-H4

## Basic Flux-Cored Wires

Special feature	Böhler Welding Product	EN ISO	AWS
High impact values	BÖHLER Kb 46 T-FD	T 42 4 B M 1 H5 /	E71T5-M21A4-CS1-H4 /
		T 42 4 B C 3 H5	E71T5-C1A4-CS1-H4
High impact values	BÖHLER Kb 52 T-FD	T 46 4 B M 3 H5 /	E70T5-M21A4-CS1-H4 /
		T 42 4 B C 3 H5	E70T5-C1A4-CS1-H4

## Self-Shielded Flux-Cored Wires

Special feature	Böhler Welding Product	EN ISO	AWS
Pipeline welding	BÖHLER Pipeshield 71 T8-FD	–	E71T8-A4-K6



# High-Strength and Low Temperature Steels

## Flux-Cored Wires

Special feature	Böhler Welding Product	EN ISO	AWS
Weatherproof steels	BÖHLER NiCu1 Ti T-FD	T 46 4 Z P M 1 H5	E81T1-M21A4-GH4
High-strength steels	BÖHLER Ti 60-FD	T 50 6 1Ni P M 1 H5	E81T1-M21A8-Ni1-H4
	BÖHLER Ti 60 T-FD	T 50 6 1Ni P M 1 H5 / T 46 4 1Ni P C 1 H5	E81T1-M21A8-Ni1-H4 / E81T1-C1A4-Ni1-H4
Stress relief	BÖHLER Ti 60 K2 T-FD (CO <sub>2</sub> )	T 50 6 1,5Ni P C 1 H5	E81T1-C1A8-K2-H4
Low temperature	BÖHLER Ti 60 T-FD SR	T 50 6 1Ni P M 1 H5	E81T1-M21AP8-Ni1-H4
High-strength steels	BÖHLER Ti 2 Ni T-FD	T 46 6 2Ni P M 1 H5	E81T1-M21A8-Ni2-H4
	BÖHLER Ti 70 Pipe-FD	T 55 4 Mn1Ni P M 1 H5	E91T1-M21A4-G
	BÖHLER Ti 70 Pipe T-FD	T 55 5 Mn1Ni P M 1 H5	E91T1-M21A6-K2-H4
	BÖHLER Ti 80 T-FD	T 69 6 Z P M 1 H5	E111T1-M21A8-GH4

## Metal-Cored Wires

Special feature	Böhler Welding Product	EN ISO	AWS
Weatherproof steels	BÖHLER NiCu1 T-MC	T 46 6 Z M M 1 H5	E80T15-M21A8-GH4
High-strength steels	BÖHLER HL 53 T-MC	T 50 6 1Ni M M 1 H5	E80T15-M21A8-Ni1-H4
	BÖHLER HL 65 T-MC	T 55 4 1NiMo M M 1 H5	E90T15-M21A4-K1-H4
	BÖHLER HL 75 T-MC	T 62 4 Mn1NiMo M M 2 H5	E101T15-M21A4-G-H4
	BÖHLER X70-MC	T 69 6 Mn2NiCrMo M M 1 H5	E110C-K4H4
	BÖHLER alform® 700-MC	T 69 6 Mn2NiCrMo M M 1 H5	E110C-K4H4
	BÖHLER alform® 900-MC	T 89 2 ZMn2NiCrMo M M 1 H5	E120C-GH4
	BÖHLER alform® 960-MC	T 89 4 ZMn2NiCrMo M M 1 H5	E120C-GH4

## Basic Flux-Cored Wires

Special feature	Böhler Welding Product	EN ISO	AWS
High impact values	BÖHLER Kb 65 T-FD	T 55 4 1NiMo B M 3 H5	E90T5-M21A4-GH4
High impact values	BÖHLER Kb 85 T-FD	T 69 6 Mn2NiCrMo B M 3 H5	E110T5-M21A8-K4-H4

## Self-Shielded Flux-Cored Wires

Special feature	Böhler Welding Product	EN ISO	AWS
Pipeline welding	BÖHLER Pipeshield 71.1 T8-FD	-	E71T8-A4-Ni1
	BÖHLER Pipeshield 81 T8-FD	-	E81T8-A4-Ni2



# Creep-Resistant Steels

## Flux-Cored Wires

Special feature	Böhler Welding Product	EN ISO	AWS
0.5Mo	BÖHLER DMO Ti-FD	T MoL P M 1 H10	E81T1-M21PY-A1H8
1Cr-0.5Mo	BÖHLER DCMS Ti-FD	T CrMo1 P M 1 H10	E81T1-M21PY-B2H8
2.25Cr-1Mo	BÖHLER CM 2 Ti-FD	T CrMo2 P M 1 H10	E91T1-M21PY-B3-H8
COST CB2	BÖHLER CB 2 Ti-FD	T ZCrMoCo9VNbNB P M 1	E91T1-GM
9Cr-1Mo	BÖHLER C 9 MV Ti-FD	T ZCrMo9VNb P M 1	E91T1-M21PY-B91
Grade P92	BÖHLER P 92 Ti-FD	T ZCrWMo9VNb P M 1	E91T1-M21PZ-B92

## Metal-Cored Wires

Special feature	Böhler Welding Product	EN ISO	AWS
0.5Mo	BÖHLER DMO T-MC	T 46 2 Mo M M 1 H5	E80T15-M21P0-A1-H4
1Cr-0.5Mo	BÖHLER DCMS T-MC	T CrMo1 M M 1 H5	E80T15-M21PY-B2-H4
2.25Cr-1Mo	BÖHLER CM 2 T-MC	T CrMo2 M M 1 H5	E90T15-M21PY-B3-H4
9Cr-1Mo	BÖHLER C 9 MV-MC	T 69T15-1G-9C1MV	E90C-B9

## Basic Flux-Cored Wires

Special feature	Böhler Welding Product	EN ISO	AWS
0.5Mo	BÖHLER DMO Kb T-FD	T 46 6 Mo B M 3 H5	E80T5-M21P8-A1-H4
1Cr-0.5Mo	BÖHLER DCMS Kb T-FD	T CrMo1 B M 3 H5	E80T5-M21PY-B2-H4
2.25Cr-1Mo	BÖHLER CM 2 Kb T-FD	T CrMo2 B M 3 H5	E90T5-M21PY-B3-H4
1.2Cr-0.9Mo-0.2V	BÖHLER DCMV Kb T-FD	T Z B M 3 H5	E90T5-M21PY-GH4
5Cr-0.5Mo	BÖHLER CM5 Kb T-FD	T CrMo5 B M 3 H5	E80T5-M21PY-B6-H4

## Glossary (Abbreviations)

FCW	Flux-cored wire rutile type	HP	High performance with increased impact values
PW	Positional welding type (all positions)	HL	German "Hochleistung" i.e. high deposition
FD	German "Fülldraht" i.e. flux-cored wire	alform®	Trademark of voestalpine steel for thermomechanically rolled high strength steels
EAS	Extra low carbon austenitic steels	Bi-free	Bismuth free alloys acc. API Standard RP 582
SAS	Stabilized austenitic steels	FF	Heat resistant austenitic steel grades
CN	Chromium/Nickel content of stainless alloy	MVR	Low carbon austenitic stainless steel without molybdenum
HI	High Impact values ISO-V notch	SKR	Low carbon austenitic steel with molybdenum
GS	Galvanized steel	NIBAS	Nickel-base
LF/CRYO	Low ferrite for cryogenic applications (FN between 3 and 8 measured with "Fischer" FeritScope)	MC	Metal-cored
T	Seamless tubular cored wires	Kb	Basic type flux-cored wire
SR	Suitable for stress relief treatment		

# Spool and Drum Types

	Dimensions	Available diameters	Products
	<b>Blue wire basket BS300</b>		
	Precision layer wound Ø external 300 mm Ø pinhole 52 mm Width 95 mm	0.9 mm .035 in 1.2 mm .045 in 1.6 mm 1/16 in	Stainless steel cored wires Ø 1.2 mm 15 kg/spool 33 lbs./spool Ø 0.9 mm 12.5 kg/spool 28 lbs./spool
	<b>Basket spool B300</b>		
	Precision layer wound Ø external 300 mm Ø internal 180 mm Width 100 mm	1.0 mm .039 in 1.2 mm .045 in 1.6 mm 1/16 in	Un/medium alloyed cored wires 15 kg/spool 33 lbs./spool 16 kg/spool 35 lbs./spool
	<b>Plastic spool S200</b>		
	Precision layer wound Ø external 200 mm Ø pinhole 52 mm Width 47 mm	0.9 mm .035 in 1.0 mm .039 in 1.2 mm .045 in 1.6 mm 1/16 in	Stainless steel flux-cored wires Un/medium alloyed cored wires 5 kg/spool 11 lbs./spool
	<b>Octagonal drum</b>		
	Height 865 mm Ø 580 mm	1.0 mm .039 in 1.2 mm .045 in 1.6 mm 1/16 in	Stainless steel cored wires 200 kg/drum 440 lbs./drum Un/medium alloyed cored wires 250 kg/drum 550 lbs./drum
	<b>Blue plastic spool S300</b>		
	Precision layer wound Ø external 300 mm Ø pinhole 52 mm Width 110 mm	0.9 mm .035 in 1.2 mm .045 in 1.6 mm 1/16 in	Stainless steel cored wires Ø 1.2 mm 15 kg/spool 33 lbs./spool Ø 0.9 mm 12.5 kg/spool 28 lbs./spool
	<b>Wire basket spool BS300</b>		
	Precision layer wound Ø external 300 mm Ø pinhole 52 mm Width 100 mm	0.9 mm .035 in 1.2 mm .045 in 1.6 mm 1/16 in	Un/medium alloyed cored wires 15 kg/spool 33 lbs./spool 16 kg/spool 35 lbs./spool
	<b>Basket spool B240</b>		
	Precision layer wound Ø external 240 mm Ø internal 170 mm Width 75 mm	2.0 mm .078 in	Un/medium alloyed cored wires 6 kg/spool 13 lbs./spool 5 spools/bin

Ø 0.9 mm (.035 in) and Ø 1.6 mm (1/16 in) and drum packaging are not available for all products, please contact your sales representative for detailed information.

# voestalpine Böhler Welding

## Welding know-how joins steel

With over 100 years of experience, voestalpine Böhler Welding is the global top address for the daily challenges in the areas of joint welding, wear and corrosion protection as well as brazing. Customer proximity is guaranteed by more than 40 subsidiaries in 25 countries, with the support of 2,200 employees, and through more than 1,000 distribution partners worldwide. And with individual consultation by our application technicians and welding engineers, we make sure that our customers master the most demanding welding challenges. voestalpine Böhler Welding offers three specialized and dedicated brands to cater our customers' and partners' requirements.



**Lasting connections** – More than 2,000 products for joint welding in all conventional arc welding processes are united in a product portfolio that is unique throughout the world. Creating lasting connections is the brand's philosophy in welding and between people.



**Tailor-made Protectivity™** – Decades of industry experience and application know-how in the areas of repair of cracked material, anti-wear and cladding, combined with innovative and custom-tailored products, guarantee customers an increase in the productivity and protection of their components.



**In-depth know-how** – Through deep insight into processing methods and ways of application, Fontargen Brazing provides the best brazing and soldering solutions based on proven products with German technology. The expertise of this brand's application engineers has been formulated over many years of experience from countless application cases.

