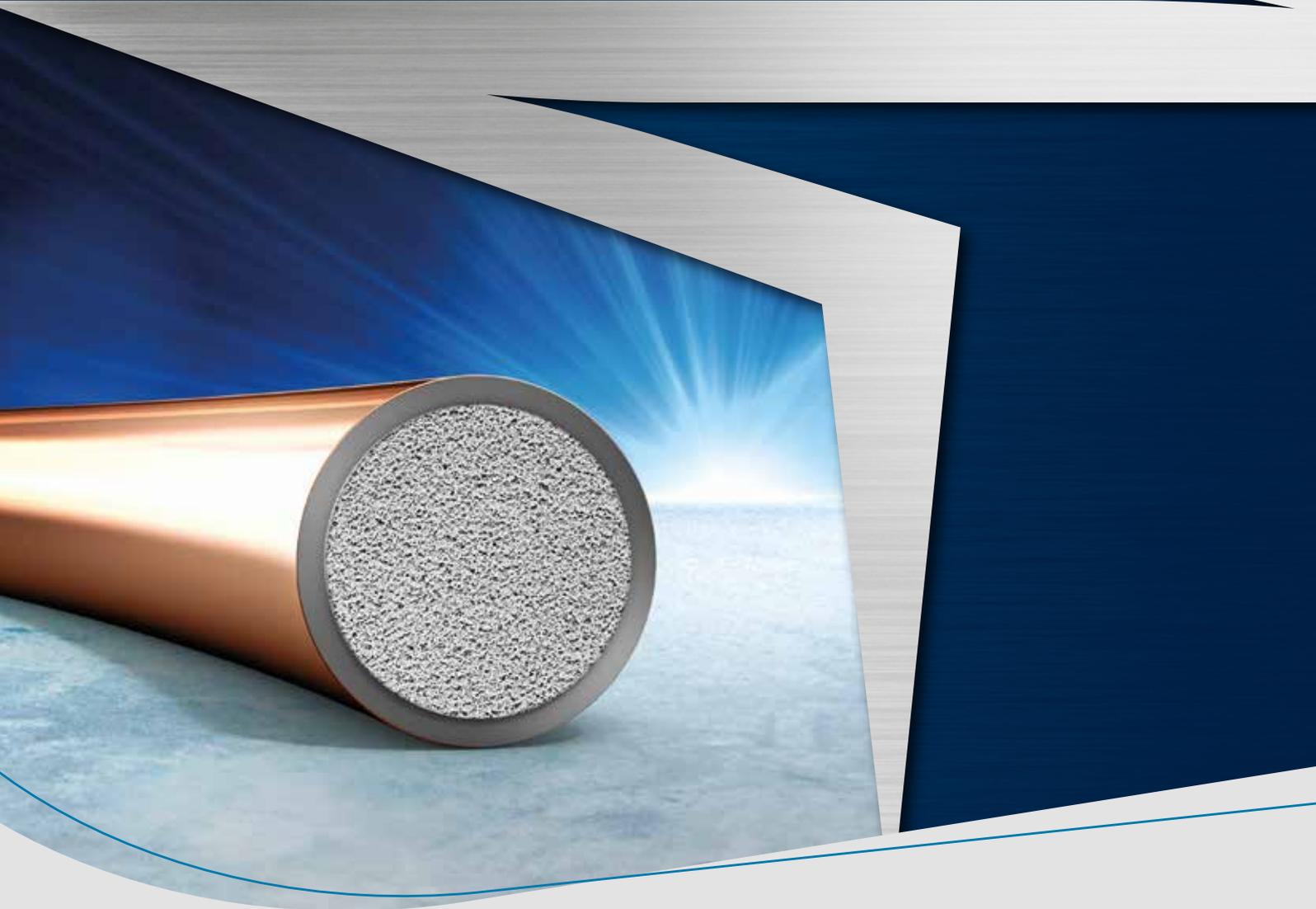
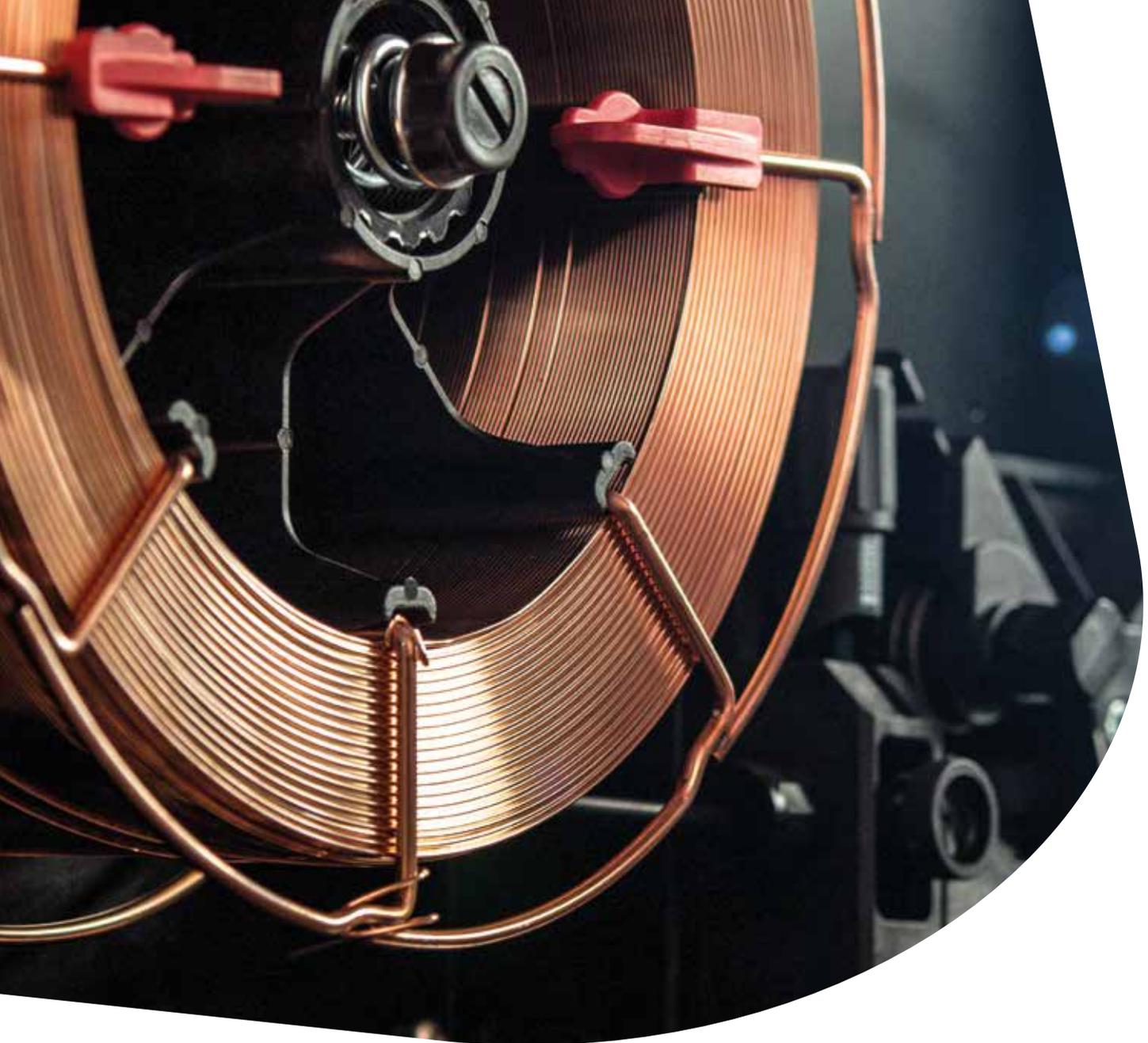




# I am the Number One Seamless Cored Wire

Engineered by the Leading  
Welding Consumables Developers





## Benefit from the Specialist in Seamless Cored wires

Strong European quality traditions, deep application knowledge and best-in-class welding consumables. This is the essence of all of which voestalpine Böhler Welding stands for. These merits are equally valid for our comprehensive range of seamless, copper-coated flux- and metal-cored welding wires, brought together under the renowned Böhler Welding brand name. Packed with decades of application experience, they are designed to bring you productivity, weld quality and – above all – security.

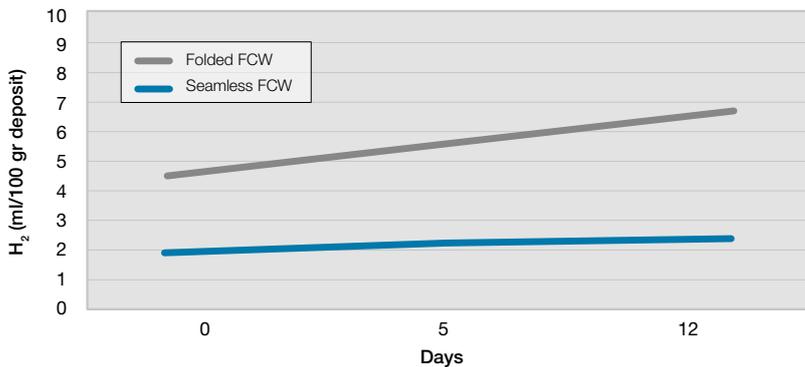
# Convincing Advantages that Speak for Themselves

## Optimal protection against hydrogen induced cracking

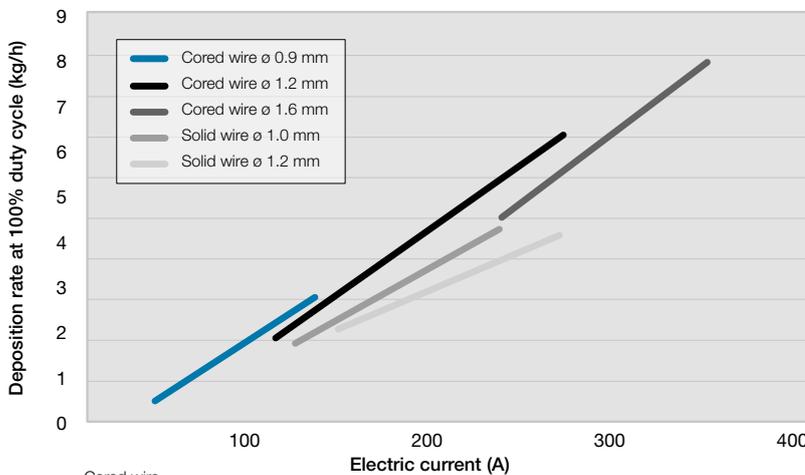
Within the field of flux-cored arc welding, the seamless design offers optimal protection against moisture reabsorption and thereby against hydrogen induced cracking / hydrogen assisted cracking (HIC, HAC, cold cracking). For the simple reason that there is no butt- or overlap-closed seam running over the wire length, moisture cannot penetrate into the filling, during storage and use of the wires. Böhler seamless cored wires are produced with extremely low levels of diffusible hydrogen – typically 2-3 ml/100g weld metal for rutile types and even lower for metal-cored and basic wires. For all types, the initial hydrogen level is guaranteed to be in

AWS hydrogen class H4. And they maintain this property until the moment of welding, regardless duration of storage and time of exposure at the work site. With Böhler seamless cored wires, you will always enjoy the best protection you can possibly get in flux-cored arc welding. Easy and secure. As an additional advantage, the copper-coating counteracts the formation of rust on the wire surface.

H<sub>DM</sub>: Rutile folded FCW versus rutile seamless FCW



Welding Conditions: 25 V – 250 A – Stick-out: 17 mm – Gas: M21  
Diffusible hydrogen content determined according to AWS A4.3-93, using the chromatography method.



Cored wire ø 0.9 mm ø 1.2 / 1.6 mm	Argon + 18 % CO <sub>2</sub> Argon + 18 % CO <sub>2</sub>	Stickout length 15 mm Stickout length 20 mm
Solid wire	Argon + 2 % CO <sub>2</sub>	Stickout length 12 mm

## Superior welding productivity

Böhler seamless cored wires carry all general productivity advantages brought along by the cored wire product design, when compared with solid wires. At equal wire diameters, the current conducting cross section of cored wires is smaller and, therefore, resistance heating in the sheath (I<sup>2</sup>R effect) is higher at the same welding current. This translates into a higher wire melt-off rate and – depending on cored wire type (flux- or metal-cored) – in higher deposition rates than with solid wires.

On top of this basic productivity advantage, cored wires offer a powerful option to very precisely influence welding characteristics by adding specific ingredients to the core, such as slag formers, arc stabilizers and alloying elements. Superior welding productivity is one of the unique features to be obtained with well-designed flux formulations. Böhler rutile cored wires with fast freezing slag, for instance, provide deposition rates in positional welding up to three times as high as obtainable with any other manual arc welding process. In the downhand position, Böhler metal-cored wires are the fastest way to join steel plate. Arc stabilizers make favorable spray arc welding start at welding currents where solid wires of the same diameter operate in the short or globular arc mode, with associated superior productivity and virtual absence of spatter.

## Excellent weldability and weld quality

Ingredients in the core also make sure that Böhler seamless cored wires have optimized weldability. Low spatter is one aspect. The level of spatter depends on flux formulation and arc type, but results are generally better than with solid wires, over a wider range of parameters. Tie-in (wetting) is usually smoother and weld penetration rounder and deeper, making it easier to avoid weld defects such as insufficient penetration and lack of fusion.

## Problem-free feeding

Whether you are using 16 kg basket spools or 250 kg Eco Drums, whether you weld manually close to the power source or robotic with long liners – problem-free wire feeding is what you will get. The seamless, copper-coated wire design adds sufficient stiffness and glide to overcome friction in liners, welding guns and contact tips. The copper-coating enhances current transfer between contact tip and wire resulting in a stable arc. Controlled wire cast and helix largely avoids “dog tailing”, promoting straight, well positioned welds.

## Full range for non- and low-alloyed steels

The Böhler range comprises a broad range of seamless, low-hydrogen cored wires covering the non- and low alloyed steel categories: high strength, low-temperature, weathering and creep resistant. They are available in all commonly used diameter sizes. Most types are tested according to EN and AWS classification standards and approved by relevant approval societies. There is a choice between types for use with CO<sub>2</sub> or with mixed shielding gas. The majority of industries will find excellent wires for their specific cored wire welding needs.



# Böhler Seamless Cored Wires

## Quick Guide

Rutile, all positional wires	Basic, downhand wires	Metal-cored, all-positional wires
<p>These give exceptional productivity in positional welding, due to a fast freezing slag that supports the weld metal, while allowing high welding currents. A single current/voltage setting can be applied for all welding positions. The wires are characterized by a smooth spray arc droplet transfer with very low spatter losses. Slag is easily removed and welds have a nice appearance. Root runs are welded economically on ceramic weld metal support.</p>	<p>These give good weldability and productivity in the flat and horizontal-vertical positions. They yield very clean welds with high elongation and impact toughness and good crack resistance, and are therefore often used for constructions with a high restraint and for root passes. Very low spatter losses. Slag release is acceptable and welds have a nice appearance. Use of ceramic weld metal support is an option for more productive welding of root runs.</p>	<p>These have highest weld metal recovery, because they produce hardly any slag. Multi-run welds can be performed without removing the few silicate islands present on the surface of beads. They are therefore often used for mechanized or robotized welding, but also for manual operations when removal of slag is not desirable. They are often applied for root pass welding. Use of ceramic weld metal support is an option.</p>
<p>Suited for single- and multi-pass welds. Diffusible hydrogen class EN H5 and AWS class H4 - typically 2-3 ml/100g weld metal, in mixed gas (1-2 ml/100g weld metal in 100% CO<sub>2</sub>).</p>	<p>Suited for single- and multi-pass welds. Diffusible hydrogen class EN H5 and AWS class H4 - typically 1-3 ml/100g weld metal.</p>	<p>Suited for single- and multi-pass welds. Diffusible hydrogen class EN H5 and AWS class H4 - typically 1-3 ml/100g weld metal.</p>

### Wires for normal strength steel

Product	Information
<b>BÖHLER Ti 52 T-FD</b> Rutile, all-positional Mixed gas and CO <sub>2</sub>	Multi-purpose wire for steel with up to 460 MPa YS. Good CVN impact toughness down to -40°C. General fabrication, shipbuilding.
<b>BÖHLER Ti 52 T-FD (HP)</b> Rutile, all-positional Mixed gas and CO <sub>2</sub>	Multi-purpose wire for steel with up to 460 MPa YS. Excellent CVN impact toughness down to -40°C for applications with highest toughness demands e.g. in offshore and shipbuilding.
<b>BÖHLER Ti 52 T-FD (CO<sub>2</sub>)</b> Rutile, all-positional CO <sub>2</sub>	Multi-purpose wire for steel with up to 460 MPa YS. Excellent productivity, especially in vertical-up welding. Single and multi-pass welds. Good CVN impact toughness down to -30°C. For excellent performance in shipbuilding.
<b>BÖHLER Ti 52 T-FD SR (CO<sub>2</sub>)</b> Rutile, all-positional CO <sub>2</sub>	Multi-purpose wire for steel with up to 460 MPa YS under stress relieve conditions. Excellent productivity, especially in vertical-up welding. Single and multi-pass welds. Good CVN impact toughness down to -40°C. For excellent performance in shipbuilding, storage vessels and heavy wall steel constructions. (CTOD pending)
<b>BÖHLER Kb 46 T-FD</b> Basic, downhand CO <sub>2</sub>	For C- and C-Mn steels up to 420 MPa YS, including fine grain steels. Excellent weldability in flat and horizontal position. Excellent CVN impact toughness down to -60°C.
<b>BÖHLER Kb 52 T-FD</b> Basic, downhand Mixed gas and CO <sub>2</sub>	For steel up to 460 MPa YS. Very tough weld metal with high crack resistance for steels with high CE and constructions with high restraint. Unlimited wall thickness. Outstanding CVN impact toughness down to -60°C with mixed gas.
<b>BÖHLER HL 51 T-MC</b> Metal-cored, all-positional Mixed gas and CO <sub>2</sub>	Multi-purpose wire for steel up to 460 MPa YS. Excellent CVN impact toughness down to -60°C. General fabrication.

### Wires for weather resistant steel

Product	Information
<b>BÖHLER NiCu1 Ti T-FD</b> Rutile, all-positional Mixed gas	For weathering steels such as CORTEN and PATINAX. Good CVN impact toughness down to -40°C. Buildings, bridges.
<b>BÖHLER NiCu1 T-MC</b> Metal-cored, all-positional Mixed gas	For weathering steels such as CORTEN and PATINAX. Excellent CVN impact toughness down to -60°C. Buildings, bridges.
<b>BÖHLER Kb NiCu1 T-FD</b> Basic, downhand	For weathering steel such as CORTEN and PATINAX. Excellent CVN impact toughness down to -60°C. Buildings, bridges.



Photo courtesy Max Bögl GmbH

## Wires for low temperature steel

Product	Information
<b>BÖHLER Ti 60 T-FD</b> Rutile, all-positional Mixed gas	For low-temperature steels up to 500 MPa YS and impact requirements down to -60°C. Alloyed with < 1% Ni to meet NACE offshore requirement. Offshore, upstream oil and gas exploration. CTOD tested.
<b>BÖHLER Ti 60 T-FD (CO<sub>2</sub>)</b> Rutile, all-positional CO <sub>2</sub>	For low-temperature steels up to 500 MPa YS and impact requirements down to -40°C. Alloyed with < 1% Ni to meet NACE offshore requirement. Offshore, upstream oil and gas exploration. (CTOD pending).
<b>BÖHLER Ti 60 T-FD SR</b> Rutile, all-positional Mixed gas	For low-temperature steels with impact requirements down to -60°C. As welded and stress relieved. Alloyed with < 1% Ni to meet NACE offshore requirement. Offshore, upstream oil and gas exploration. (CTOD pending).
<b>BÖHLER Ti 2 Ni T-FD</b> Rutile, all-positional Mixed gas	For low-temperature steels with impact requirements down to -60°C. Alloyed with 2% Ni for superior CVN impact properties. Offshore, upstream oil and gas exploration. CTOD tested.
<b>BÖHLER Kb 60 T-FD</b> Basic, downhand Mixed gas	For low-temperature steels with impact requirements down to -60°C. Alloyed with < 1% Ni to meet NACE offshore requirement. Offshore, upstream oil and gas exploration.
<b>BÖHLER HL 46 GS T-MC</b> Metal-cored, all-positional Mixed gas	Developed to weld galvanized steel plates. Well suited for thin plate applications. Single layer technology.
<b>BÖHLER HL 53 T-MC</b> Metal-cored, all-positional Mixed gas	For low-temperature steels with impact requirements down to -60°C. Alloyed with < 1% Ni to meet NACE offshore requirement. Exceptional mechanical properties down to -60°C, both as welded and stress relieved. This wire is especially suitable for rootpass welding in offshore and pipeline applications. CTOD pending.

## Wires for high strength steel

Product	Information
<b>BÖHLER Ti 75 T-FD</b> Rutile, all-positional Mixed gas	Ni-Mo-alloyed wire for high strength steels up to 620 MPa YS. Excellent CVN impact toughness down to -40°C. The exceptional mechanical properties of this wire even at low temperatures as well as the low content of diffusible hydrogen make it especially suitable for off-shore applications.
<b>BÖHLER Ti 80 T-FD</b> Rutile, all-positional Mixed gas	Ni-Mo-alloyed wire for high strength steels up to 690 MPa YS. Excellent CVN impact toughness down to -60°C as well as the low diffusible hydrogen content make it especially suitable for offshore, pipeline and crane applications.
<b>BÖHLER Kb 63 T-FD</b> Basic, downhand Mixed gas	Cr-Ni-Mo-alloyed wire for high strength steels up to 550 MPa YS. Excellent CVN impact toughness down to -40°C. Multiple steel constructions.
<b>BÖHLER Kb 65 T-FD</b> Basic, downhand Mixed gas	Ni-Mo-alloyed wire for high strength steels up to 550 MPa YS. Excellent CVN impact toughness down to -40°C.
<b>BÖHLER Kb 85 T-FD</b> Basic, downhand Mixed gas	Ni-Mo-alloyed wire for high strength steels up to 690 MPa YS. Excellent CVN impact toughness down to -60°C.
<b>BÖHLER Kb 90 T-FD</b> Basic, downhand Mixed gas	Ni-Mo-alloyed wire for high strength steels up to 890 MPa YS, such as S890QL, S960QL and SQL 1100. Excellent CVN impact toughness down to -40°C.
<b>BÖHLER HL 65 T-MC</b> Metal-cored, all-positional Mixed gas	Ni-Mo-alloyed wire for high strength steels up to 550 MPa YS. Excellent CVN impact toughness down to -50°C. Especially suited for root pass welding in offshore and pipelines.
<b>BÖHLER HL75 T-MC</b> Metal-cored, all-positional Mixed gas	Ni-Mo- alloyed wire for single - or multilayer welding of high strength steels. This wire is especially suitable for the pipe welding of special base material like ASTM A519 Gr. 4130. It meets the NACE requirements. Excellent CVN impact toughness down to -40°C.
<b>BÖHLER 700 T-MC</b> Metal-cored, all positional Mixed gas	Ni-Mo-alloyed wire for high strength steels up to 690 MPa YS. Excellent CVN impact toughness down to -60°C. Applied in crane construction.
<b>BÖHLER 900 T-MC</b> Metal-cored, all-positional Mixed gas	Ni-Mo-alloyed wire for high strength steels up to 890 MPa YS. Excellent CVN impact toughness down to -60°C. Applied in crane construction and offshore fabrication.



## Wires for pipes

Product	Information
<b>BÖHLER Ti 70 Pipe T-FD</b> Rutile, all-positional Mixed gas	Developed for pipe welding of API 5L grades up to X70. Well suited for mechanized (orbital) welding. Good CVN impact toughness down to -50°C.
<b>BÖHLER HL 60 Pipe T-MC</b> Metal-cored, all-positional Mixed gas	For automatic (orbital) welding applications for pipeline construction. Matches the minimum strength requirements of X70 base material. Excellent CVN impact toughness down to -60°C. CTOD tested at -10°C.

## Wires for creep resistant steel

Product	Information
<b>BÖHLER DMO Kb T-FD</b> Basic, downhand Mixed gas	For 0.5% Mo type creep resistant steels for service temperatures up to 500°C. Excellent CVN impact toughness down to -60°C, as welded and post weld heat treated.
<b>BÖHLER DCMS Kb T-FD</b> Basic, downhand Mixed gas	For 1% Cr-0.5% Mo type creep resistant steels for service temperatures up to 500°C.
<b>BÖHLER CM2 Kb T-FD</b> Basic, downhand Mixed gas	For 2.25% Cr-0.5% Mo type creep resistant steels for service temperatures up to 600°C
<b>BÖHLER DCMV Kb T-FD</b> Basic, downhand Mixed gas	For Cr-Mo-V- alloyed steels resistant to creep up to 550°C. This wire is especially suitable for welding steel G17CrMoV5-10 with post weld heat treatment.
<b>BÖHLER CM5 Kb T-FD</b>	Basic cored wire for use in downhand positions with mixed gas. For 5% Cr-0.5% Mo type creep resistant steels.
<b>BÖHLER DMO T-MC</b> Metal-cored, all-positional Mixed gas	For 0.5% Mo type creep resistant steels for service temperatures up to 500°C.
<b>BÖHLER DCMS T-MC</b> Metal-cored, all-positional Mixed gas	For 1% Cr-0.5% Mo type creep resistant steels for service temperatures up to 500°C
<b>BÖHLER CM2 T-MC</b> Metal-cored, all-positional Mixed gas	For 2.25% Cr-0.5% Mo type creep resistant steels for service temperatures up to 600°C.

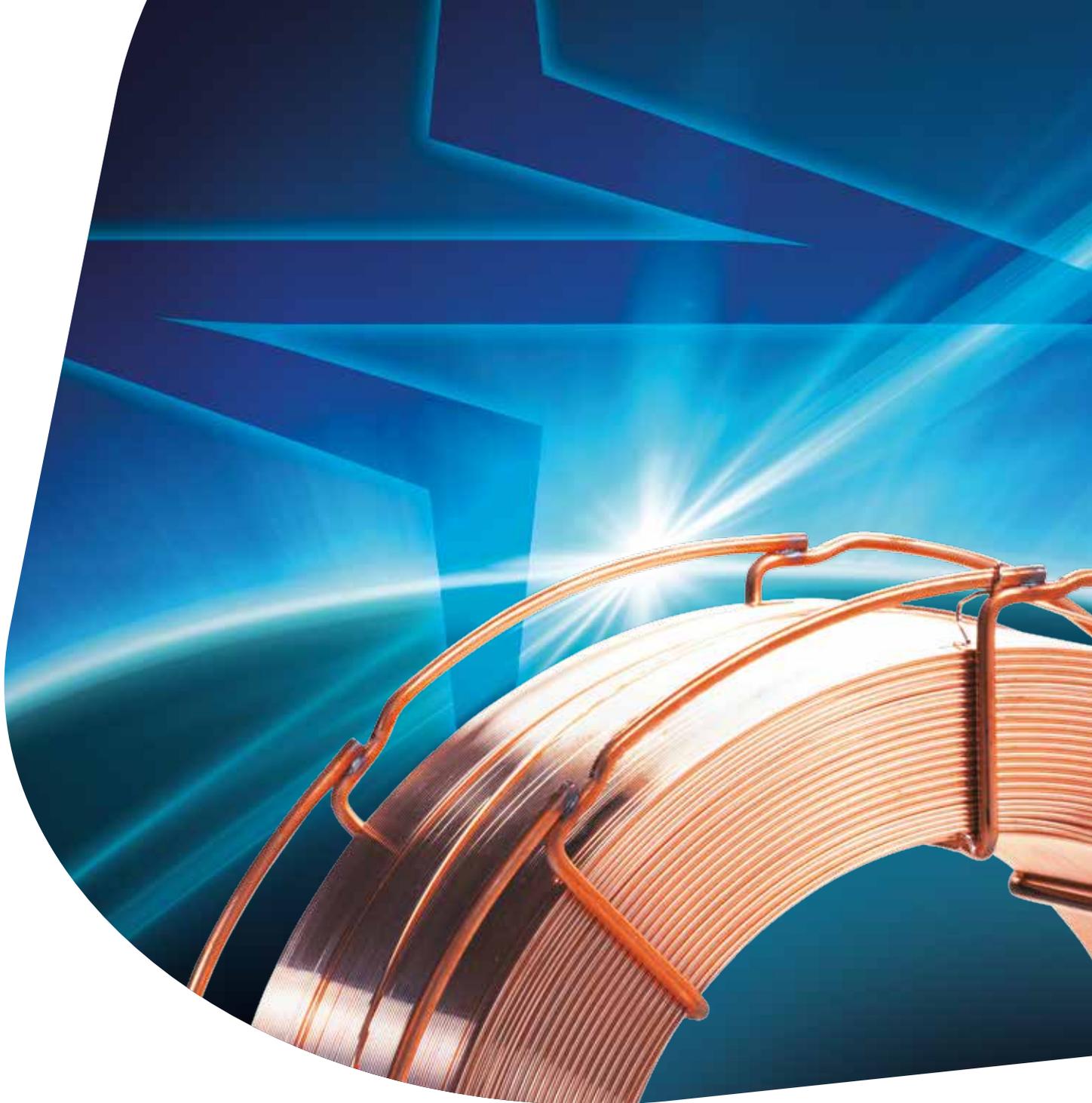


# Böhler Seamless Cored Wires

## Classifications and low-temperature performance

### Shielding GAS M21 acc. EN ISO 14175

Alloy group	Product name	EN ISO	Product Classification	AWS A5.36	Product Classification	ISO V Test Values						
						20°C	-20°C	-30°C	-40°C	-50°C	-60°C	CTOD
Unalloyed steel grades	BÖHLER Ti 52 T-FD	17632-A	T46 4 P M 1 H5	A5.36	E71T1-M21A4-CS1-H4	110			60			
		17632-B	T555T1-1MA-H5	A5.36M	E491T1-M21A4-CS1-H4							
	BÖHLER Ti 52 T-FD (HP)	17632-A	T46 4 P M 1 H5	A5.36	E71T1-M21A4-CS1-H4	120	110		90	≥47		
		17632-B	T554T1-1MA-H5	A5.36M	E491T1-M21A4-CS1-H4							
	BÖHLER Kb 52 T-FD	17632-A	T46 4 B M 3 H5	A5.36	E70T5-M21A4-CS1-H4	160			100		80	
		17632-B	T556T5 OMA H5	A5.36M	E490T5-M21A4-CS1-H4							
	BÖHLER HL 51 T-MC	17632-A	T 46 6 M M 1 H5	A5.36	E70T15-M21A8-CS1-H4				90		60	
		17632-B	T 556T15-1MA H5	A5.36M	E490T15-M21A6-CS1-H4							
	BÖHLER HL 46 GS T-MC	17632-A	T46 Z M M 1 H5	A5.36	E70T15-M21AZ-CS1-H4							
		17632-B	T55ZT15-1MA H5	A5.36M	E490T15-M21AZ-CS1-H4							
Low- and medium alloyed steel grades	BÖHLER NiCu1 Ti T-FD	17632-A	T46 4 Z P M 1 H5	A5.36	E81T1-M21A4-GH4				70			
		17632-B	T554T1-1MA-G-H5	A5.36M	E551T1-M21A4-GH4							
	BÖHLER Ti 60 T-FD	17632-A	T 50 6 1Ni P M 1 H5	A5.36	E81T1-M21A8-Ni1-H4	110			90 (60)	70	65	-10°C
		17632-B	T556T1-1MA-N2-UH5	A5.36M	E551T1-M21A6-Ni1-H4							
	BÖHLER Ti 60 T-FD SR	17632-A	T50 6 1Ni P M 1 H5	A5.36	E81T1-M21AP8-Ni1-H4				120 (60)		90 (50)	-10°C
		17632-B	T556T1-1MAP-N2-H5	A5.36M	E551T1-M21AP6-Ni1-H4							
	BÖHLER Ti 2 Ni T-FD	17632-A	T50 6 2Ni P M 1 H5	A5.36	E81T1-M21A8-Ni2-H4						80	-40°C
		17632-B	T576T1-1MA-N5-H5	A5.36M	E551T1-M21A6-Ni2-H4							
	BÖHLER Ti 75 T-FD	18276-A	T62 4 Mn1.5Ni P M 1H5	A5.36	E101T1-M21A4-K2-H4				90			
		18276-B	T694T1-1MA-N3M1-UH5	A5.36M	E691T1-M21A4-K2-H4							
	BÖHLER Ti 80 T-FD	18276-A	T69 6 Z P M 1 H5	A5.36	E111T1-M21A8-GH4				75		60	
		18276-B	T766T1-1MA-G-UH5	A5.36M	E761T1-M21A6-GH4							
	BÖHLER Kb NiCu1 T-FD	17632-A	T46 6 1Ni B M 3 H5	A5.36	E80T5-M21A8-GH4						130	
		17632-B	T55 6 T5-OMA-G-H5	A5.36M	E550T5-M21A6-GH4							
	BÖHLER Kb 60 T-FD	17632-A	T 46 6 1Ni B M 3 H5	A5.36	E80T5-M21P8-Ni1-H4				100		80	
		17632-B	T556T5-OMA-N2-UH5	A5.36M	E550T5-M21P6-Ni1-H4							
	BÖHLER Kb 63 T-FD	18276-A	T55 4 Z B M 3 H5	A5.36	E90T5-M21A4-GH4				80			
		18276-B	T624T5-OMA-G-UH5	A5.36M	E620T5-M21A4-GH4							
	BÖHLER Kb 65 T-FD	18276-A	T55 4 1NiMo B M 3 H5	A5.36	E90T5-M21A4-GH4				100			
		18276-B	T62 4 T5-OMA-N2M2-UH5	A5.36M	E620T5-M21A4-GH4							
BÖHLER Kb 85 T-FD	18276-A	T 69 6 Mn2NiCrMo B M 3 H5	A5.36	E110T5-M21A8-K4-H4						80		
	18276-B	T766T5-OMA-N4C1M2-H5	A5.36M	E760T5-M21A6-K4-H4								
BÖHLER Kb 90 T-FD	18276-A	T89 4 Mn2Ni1CrMo B M 3 H5	A5.36	E120T5-M21A4-GH4				75				
	18276-B	T83 4 T5-OMA-N4C2M2-UH5	A5.36M	E830T5-M21A4-GH4								
BÖHLER NiCu1 T-MC	18276-A	T46 6 Z M M 1 H5	A5.36	E80T15-M21A8-GH4				100		70		
	18276-B	T55 6 T15-1MA-G-H5	A5.36M	E550T15-M21A6-GH4								



### Shielding GAS M21 acc. EN ISO 14175

Alloy group	Product name	EN ISO	Product Classification	AWS A5.36	Product Classification	ISO V Test Values							
						20°C	-20°C	-30°C	-40°C	-50°C	-60°C	CTOD	
Low- and medium alloyed steel grades	BÖHLER HL 53 T-MC	17632-A	T50 6 1Ni M M 1 H5	A5.36	E80T15-M21A8-Ni1-H4							90 (90)	(-40°C)
		17632-B	T576T15-1MA-N2-UH5	A5.36M	E550T15-M21A6-Ni1-H4								
	BÖHLER HL 65 T-MC	18276-A	T55 4 1NiMo M M 1 H5	A5.36	E90T15-M21A4-K3-H4						70		
		18276-B	T62 5 T15-1MA-N2M2-UH5	A5.36M	E620T15-M21A4-K3-H4								
	BÖHLER HL75 T-MC	18276-A	T62 4 Mn1NiMo M M 2 H5	A5.36	E101T15-M21A4-G-H4							70 (60)	
		18276-B	T 694T15-1MA-N2M2-UH5	A5.36M	E691T15-M21A4-G-H4								
	BÖHLER 700 T-MC	18276-A	T69 6 Mn2NiCrMo M M 1 H5	A5.36	E110T15-M21A8-K4-H4							80 (70)	70 (60)
		18276-B	T766T15-1MA-N4C1M2-UH5	A5.36M	E760T15-M21A6-K4-H4								
	BÖHLER 900 T-MC	18276-A	T89 6 Mn2NiCrMo M M 2 H5	A5.36	E120T15-M21A8-GH4							58	55
		18276-B	T836T15-1MA-N4C1M2-UH5	A5.36M	E830T15-M21A6-GH4								

( ) Values after post weld heat treatment. For PWHT conditions please check the individual data sheets on our website

Shielding GAS M21 acc. EN ISO 14175

Alloy group	Product name	EN ISO	Product Classification	AWS A5.36	Product Classification	ISO V Test Values						
						20°C	-20°C	-30°C	-40°C	-50°C	-60°C	CTOD
Creep resistant	BÖHLER DMO Kb T-FD	17632-A	T46 6 Mo B M 3 H5	A5.36	E80T5-M21P8-A1-H4	210 (140)			150 (140)		130 (120)	
		17632-B	T556T5-0M-2M3-H5	A5.36M	E550T5-M21P6-A1-H4							
		17634-A	T Mo B M 3 H5									
		17634-B	T55T5-0M-2M3-H5									
	BÖHLER DCMS Kb T-FD	17634-A	T CrMo1 B M 3 H5	A5.36	E80T5-M21PY-B2-H4	(100)						
		17634-B	T55T5-0M-1CM-H5	A5.36M	E550T5-M21PY-B2-H4							
	BÖHLER CM2 Kb T-FD	17634-A	T CrMo2 B M 4 H5	A5.36	E90T5-M21PY-B3-H4	(100)						
		17634-B	T62T5-0M-2C1M	A5.36M	E620T5-M21PY-B3-H4							
	BÖHLER DCMV Kb T-FD	17634-A	T Z B M 3 H5	A5.36	E90T5-M21PY-GH4	100						
		17634-B	T62T5-0M-G-H5	A5.36M	E620T5-M21PY-GH4							
	BÖHLER CM5 Kb T-FD	17634-A	T CrMo5 B M 4 H5	A5.36	E80T5-M21PY-B6-H4	100						
		17634-B		A5.36M	E550T5-M21PY-B6-H4							
	BÖHLER DMO T-MC	17632-A	T46 2 Mo M M 1 H5	A5.36	E80T15-M21P0-A1-H4		(90)					
		17632-B	T552T15-1M-2M3-H5	A5.36M	E550T15-M21P2-A1-H4							
		17634-A	T MoL M M 1 H5									
	BÖHLER DCMS T-MC	17634-A	T CrMo1 M M 1 H5	A5.36	E80T15-M21PY-B2-H4	(110)	(80)					
17634-B		T55T15-1M-1CM-H5	A5.36M	E550T15-M21PY-B2-H4								
BÖHLER CM2 T-MC	17634-A	T CrMo2 M M 1 H5	A5.36	E90T15-M21PY-B3-H4	(110)							
	17634-B	T62T15-1M-2C1M-H5	A5.36M	E620T15-M21PY-B3-H4								
Pipe steel grades	BÖHLER Ti 70 Pipe T-FD	18276-A	T55 5 Mn1Ni P M 1 H5	A5.36	E91T1-M21A6-K2-H4				90	80		
		18276-B	T625T1-1MA-N3M1-UH5	A5.36M	E621T1-M21A5-K2-H4							
	BÖHLER HL 60 Pipe T-MC	17632-A	T46 6 Z M M 1 H5	A5.36	E80T15-M21A8-K6-H4				160		140	(-10°C)
		17632-B	E556T15-1MA-N1-H5	A5.36M	E550T15-M21A6-K6-H4							

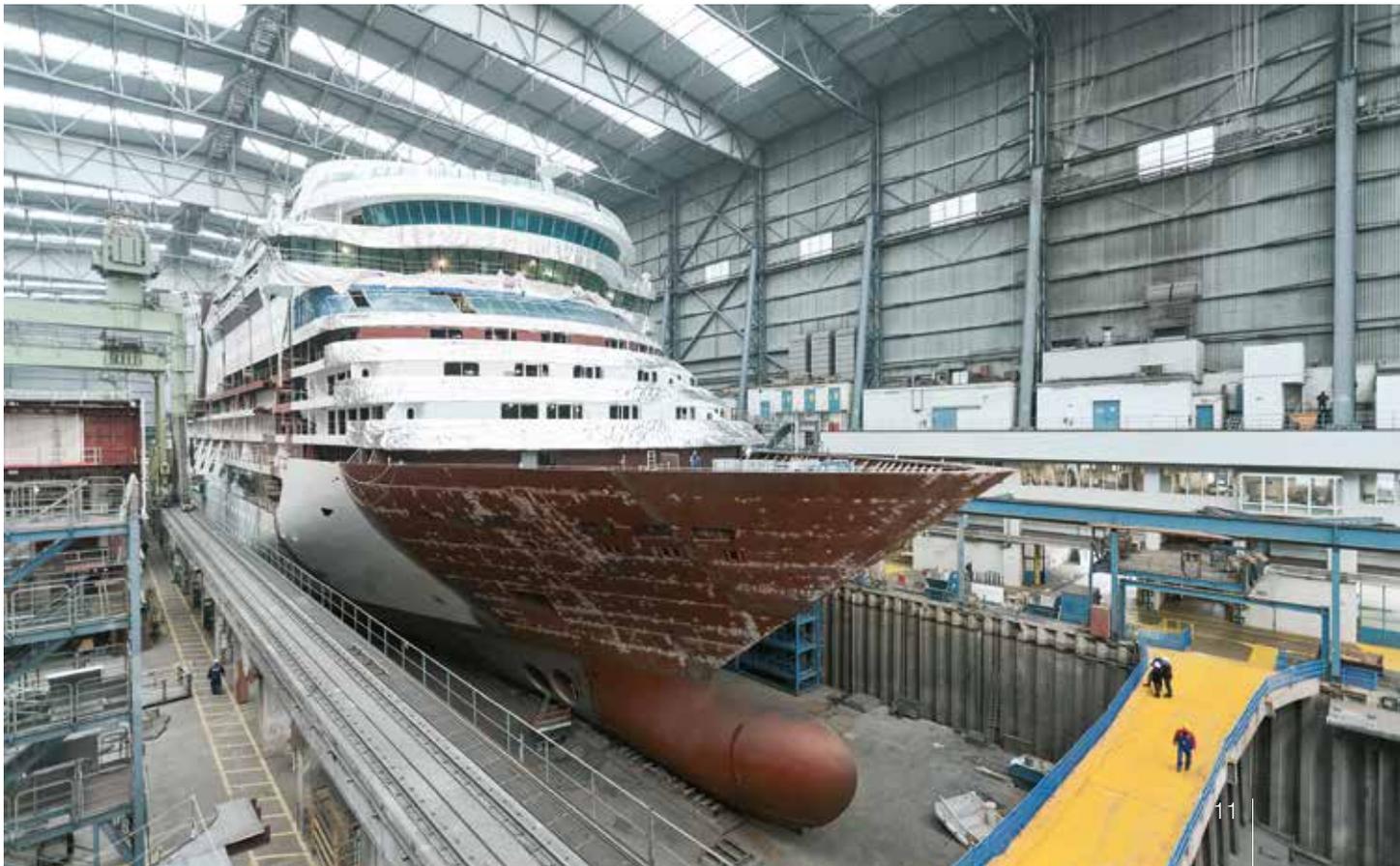
( ) Values after post weld heat treatment. For PWHT conditions please check the individual data sheets on our website



Shielding GAS C1 acc. EN ISO 14175

Alloy group	Product name	EN ISO	Product Classification	AWS A5.36	Product Classification	ISO V Test Values						
						20°C	-20°C	-30°C	-40°C	-50°C	-60°C	CTOD
Unalloyed steel grades	BÖHLER Ti 52 T-FD	17632-A	T46 2 P C 1 H5	A5.36	E71T1-C1A2-CS1-H4	55						
		17632-B	T553T1-1CA-H5	A5.36M	E491T1-C1A3-CS1-H4							
	BÖHLER Ti 52 T-FD (CO <sub>2</sub> )	17632-A	T46 3 P C 1 H5	A5.36	E71T1-C1A2-CS1-H4	100	95	70				
		17632-B	T553T1-1CA-H5	A5.36M	E491T1-C1A3-CS1-H4							
	BÖHLER Ti 52 T-FD (HP)	17632-A	T 42 2 P C 1 H5	A5.36	E71T1-C1A0-CS1-H4	110	100					
		17632-B	T492T1-1CA-H5	A5.36M	E491T1-C1A2-CS1-H4							
	BÖHLER Ti 52 T-FD SR (CO <sub>2</sub> )	17632-A	T42 4 P C 1 H5	A5.36	E71T12-C1AP4-CS1-H4		110 (90)		85 (70)			(-10°C)
		17632-B	T494T12-1CAP-H5	A5.36M	E491T12-C1AP4-CS1-H4							
	BÖHLER Kb 46 T-FD	17632-A	T 42 4 B C 1 H5	A5.36	E70T5-C1A4-CS1-H4				90		80	
		17632-B	T496T5-1CA-H5	A5.36M	E490T5-C1A4-CS1-H4							
	BÖHLER Kb 52 T-FD	17632-A	T42 4 B C 3 H5	A5.36	E70T5-C1A4-CS1-H4	140			80			
		17632-B	T496T5 - 0CA H5	A5.36M	E490T5-C1A4-CS1-H4							
BÖHLER HL 51 T-MC	17632-A	T42 5 M C 1 H5	A5.36	E70T15-C1A6-CS1-H4				80	60			
	17632-B	T495T15-1CA-H5	A5.36M	E490T15-C1A5-CS1-H4								
Low-and medium alloyed	BÖHLER Ti 60 T-FD (CO <sub>2</sub> )	17632-A	T46 4 1Ni P C 1 H5	A5.36	E81T1-C1A4-Ni1-H4		110		80			(-10°C)
		17632-B	T554T1-1CA-N2-H5	A5.36M	E551T1-C1A4-Ni1-H4							
	BÖHLER Ti 60 K2 T-FD (CO <sub>2</sub> )	17632-A	T46 6 1.5Ni P C 1 H5	A5.36	E81T1-C1A8-K2-H4				80	70	60	
		17632-B	T556T1-1CA-N3-H5	A5.36M	E551T1-M21A6-K2-H4							
	BÖHLER Kb 85 T-FD (CO <sub>2</sub> )	18276-A	T69 4 Mn2NiCrMo B C 3 H5	A5.36	E110T5-C1A4-K4-H4				80			
		18276-B	T764T5-0CA-N4C1M2-UH5	A5.36M	E760T5-C1A4-K4-H4							

( ) Values after post weld heat treatment. For PWHT conditions please check the individual data sheets on our website



# Certificates and Approvals

Metal-cored types	CE	TÜV	GL	DNV	DB	ABS	LR	BV	RINA	CWB	RS
HL 46 GS T-MC											
HL 53 T-MC	■	■	■	■	■	■					
HL 75 T-MC				■		■					
HL 65 T-MC	■										
HL-60 Pipe T-MC											
HL 51 T-MC	■	■	■	■	■	■	■	■	■	■	
NiCu1 T-MC	■										
900 T-MC	■	■			■						
700 T-MC	■	■		■	■	■	■			■	
CM2 T-MC	■	■									
DCMS T-MC	■	■			■						
DMO T-MC	■	■			■						

Basic types	CE	TÜV	GL	DNV	DB	ABS	LR	BV	RINA	CWB	RS
Kb 46 T-FD	■	■									
Kb 52 T-FD	■	■	■	■	■	■	■	■	■		
Kb 90 T-FD	■										
Kb 85 T-FD	■	■		■		■	■				
Kb 85 T-FD (CO <sub>2</sub> )											
Kb 65 T-FD											
Kb 60 T-FD	■										
Kb NiCu1 T-FD	■										
CM5 Kb T-FD											
CM2 Kb T-FD											
DMO Kb T-FD	■	■									
DCMV Kb T-FD	■	■									
DCMS Kb T-FD											

Rutile types	CE	TÜV	GL	DNV	DB	ABS	LR	BV	RINA	CWB	RS
Ti 52 T-FD	■	■	■	■	■	■	■	■	■	■	■
Ti 52 T-FD SR (CO <sub>2</sub> )	■			■		■	■				
Ti 52 T-FD (HP)	■			■			■		■	■	
Ti 52 T-FD (CO <sub>2</sub> )	■	■	■	■	■	■	■	■	■		■
NiCu1 Ti T-FD	■										
Ti 60 T-FD	■	■	■	■	■	■	■	■	■	■	■
Ti 60 T-FD SR	■			■		■	■				
Ti 60 T-FD (CO <sub>2</sub> )	■			■		■	■				
Ti 60 K2 T-FD (CO <sub>2</sub> )	■										
Ti 70 Pipe T-FD	■	■									
Ti 75 T-FD	■										
Ti 80 T-FD	■		■	■		■	■	■			
Ti 2Ni T-FD	■			■		■	■				■



## Spool Types

<p><b>D200</b></p> 	<p>Plastic spool D200 Precision layer wound Dimensions: Ø external 200mm Ø internal 52mm width 47mm</p> <p>Available packaging: M5=5kg</p>	<p>Available diameters: 1.0mm 1.2mm 1.6mm</p>
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<p><b>BS300</b></p> 	<p>Wire basket Precision layer wound Dimensions: Ø external 300mm Ø internal 180mm width 100mm</p> <p>Available packaging: S1=15kg S2=18kg S3=16kg</p>	<p>Available diameters: 1.0mm 1.2mm 1.6mm</p>
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<p><b>K200</b></p> 	<p>Wire basket K200 Precision layer wound Dimensions: Ø external 200mm Ø internal 100mm width 47mm</p> <p>Available packaging: K8=5kg</p>	<p>Available diameters: 1.0mm 1.2mm 1.6mm</p>
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<p><b>D300</b></p> 	<p>Plastic spool D300 Precision layer wound Dimensions: Ø external 300mm Ø internal 52mm width 100mm</p> <p>Available packaging: P0=12.5kg P1=15kg P3=16kg</p>	<p>Available diameters: 1.0mm 1.2mm 1.6mm</p>
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<p><b>K300</b></p> 	<p>Wire basket K300 Precision layer wound Dimensions: Ø external 300mm Ø internal 180mm width 100mm</p> <p>Available packaging: K0=12.5kg K1=15kg K2=18kg K3=16kg</p>	<p>Available diameters: 1.0mm 1.2mm 1.6mm</p>
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<p><b>Eco Drum</b></p> 	<p>Robot drum Weight: app. 230kg flux cored wire Dimensions: h 780mm Ø 510mm</p>	<p>Available diameters: 1.0mm 1.2mm 1.6mm</p>
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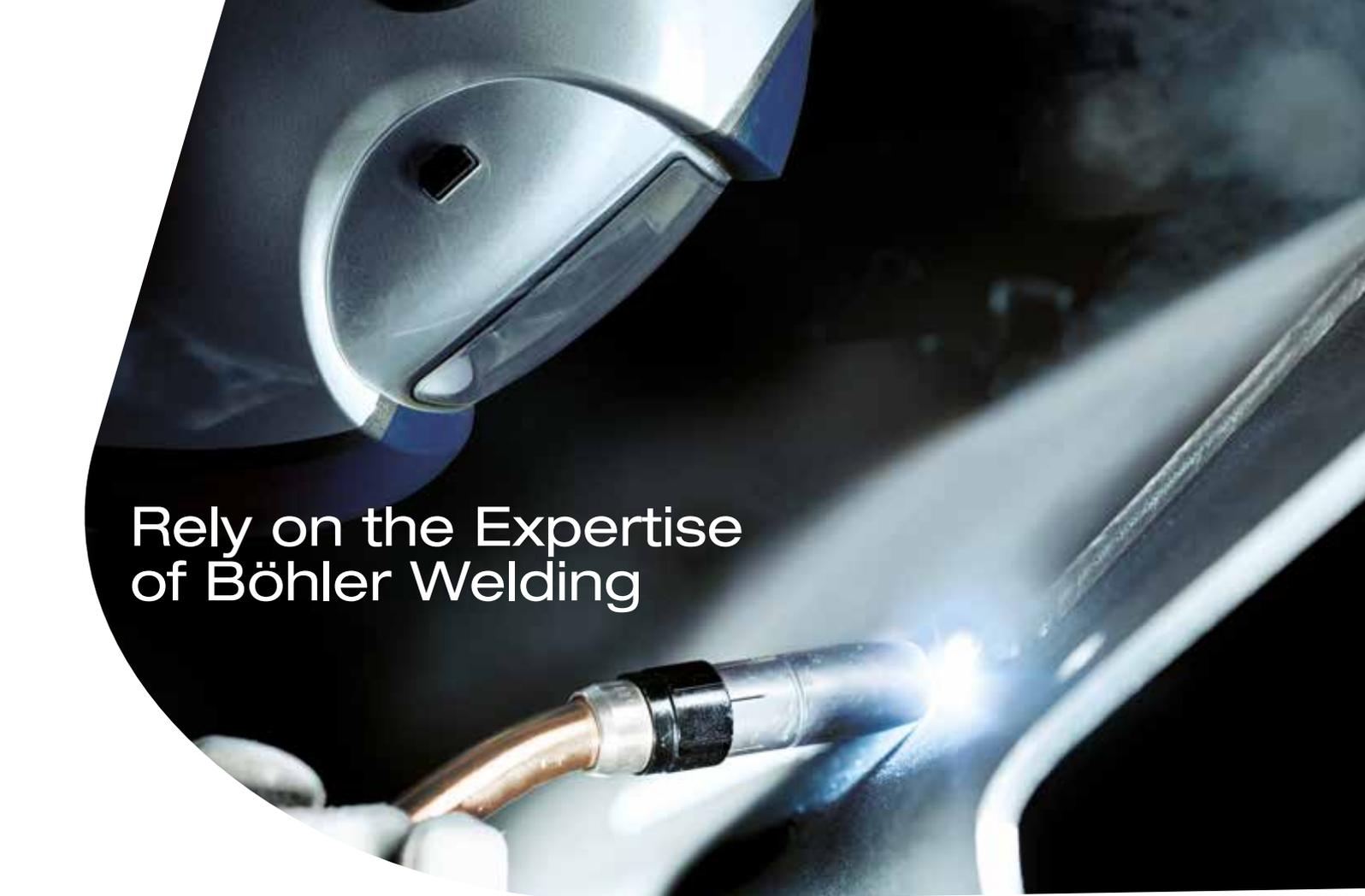


Photo courtesy Welcon A/S Denmark

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böhlerwelding  
by voestalpine

voestalpine



# Rely on the Expertise of Böhler Welding

voestalpine Böhler Welding is a leading manufacturer and worldwide supplier of filler metals for industrial welding and brazing applications.

As a part of the voestalpine Group, a worldwide operating steel-based technology group and one of the world's leading suppliers of specialized steel products, we are a part of a global network of metallurgy experts.

#### **Our customers benefit from:**

- Comprehensive welding and steel know-how under one roof
- Coordinated complete solutions comprised of steel and welding filler metals
- A partner offering maximum economic stability and technological expertise

#### **Customer first**

Absolute customer focus is our guiding principle. We see ourselves as a provider of solutions to challenging welding projects. We ensure that our customers get the right filler metals, use them correctly, and that all welding process parameters are adjusted for the best possible performance. We consider it as our responsibility to guarantee that we deliver to our customers, now and in the future, the best possible solutions. We also strive to develop new products, optimize existing products, and streamline processes so as to achieve very short turnaround times. We focus on technologically advanced industrial sectors and provide products that are geared to their specific requirements.

#### **Three competences – three brands**

In our efforts to afford our customers the best possible support and promote development in line with specific targets, we have built our core competences within Joint Welding, Repair & Maintenance Welding and Soldering & Brazing.

This way we offer our customers the largest and most comprehensive product portfolio of filler metals within our three brands:

- Böhler Welding
- UTP Maintenance
- Fontargen Brazing

# 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.

