


BÖHLER HL 46 T-MC

Seamless Metalcored Wire



All-positional metal-cored wire for high strength steel up to 460 MPa yield strength

Features	User benefits	
» Important reduction of silicates on single and multi-run welds	» No need for interrun cleaning	
» Low spatter	» Less post weld cleaning	
» High weld metal recovery	» Productive welding	
» Welder-friendly	» Low defect rate	
» Wide parameter box	» Easy setting » Low defect rate	
» Dependable feedability	» Increased arc time	
» Copper-coated seamless cored wire	» Excellent current transfer » Resistance to moisture absorption » Less contact tip wear	
» Low-hydrogen weld metal	» Low risk of HAC	

Less silicates make less post weld cleaning

Seamless tubular, metal-cored wire from the Diamond Spark range. Designed for multi-pass welds without the need of interrun cleaning. For manual and mechanized welding of unalloyed and fine-grain constructional steels with service temperatures from -30 °C to +450 °C. Very suited for flat and horizontal fillet welds.

BÖHLER HL 46 T-MC features a stable, spray arc droplet transfer over a wide parameter box and shows very low spatter losses and an excellent bead appearance.

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. The seamless design offers the best possible protection against moisture reabsorption during storage and use of the wires and thereby against hydrogen induced cracking. Diffusible hydrogen level is typically 1-3 ml/ 100 g weld metal.

Typical applications:

- » General construction such as bridges and stadiums
- » Earth moving and road construction machinery (yellow goods)
- » Medium and thin-plate welding e.g. in automotive industry and shipbuilding

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Classifications		Operating data		
EN ISO 17632-A	AWS A5.36	Allows welding with standard power sources.		
T46 3 M M 1 H5	E70T15-M21A2-CS1-H4	Welding positions	Polarity	Shielding gas
			DC+	EN ISO 14175: M20, M21

Typical chemical composition, all weld metal, wt. %			
Shielding gas	C	Si	Mn
M21	0.06	0.8	1.5

Mechanical properties, all weld metal (single values typical)							
Shielding gas	Condition	Yield strength $R_{p0.2\%}$ MPa	Tensile strength R_m MPa	Elongation A_5 %	CVN Impact toughness ISO-V KV J		
					-20 °C	-30 °C	-40 °C
M21	as welded	480 (≥460)	580 (≥550-660)	29 (≥22)	120	90 (≥47)	70 (≥27)

Steels to be welded		
EN	Shipbuilding steel	ASTM
S235JR-S355JR, S235JO-S355JO, S450JO, S235J2-S355J2, S275N-S460N, S275M-S460M, P235GH-P355GH, P355N, P285NH-P460NH, P195TR1-P265TR1, P195TR2-P265TR2, P195GH-P265GH, L245NB-L415NB, L450QB, L245MB-L450MB, GE200-GE240	A, B, D, E	A 106 Gr. A, B, C; A 181 Gr. 60, 70; A 283 Gr. A, C; A 285 Gr. A, B, C; A 414 Gr. A, B, C, D, E, F, G; A 501 Gr. B; A 516 Gr. 55, 65, 70; A 573 Gr. 58, 65, 70; A 588 Gr. A, B; A 633 Gr. C; A 662 Gr. B; A 711 Gr. 1013; A 841 Gr. A; API 5 L Gr. B, X42, X52, X56, X60, X65

Approvals
TÜV, DB, ABS, BV, DNV-GL, CWB, LR, CE

Overview spool types					
Plastic spool D200			Wire basket spool BS300		
	Precision layer wound Dimensions: Ø external 200 mm Ø internal 52 mm Width 47 mm	Available spool weight: 5 kg Available diameters: 1.0 mm 1.2 mm		Precision layer wound Dimensions: Ø external 300 mm Ø internal 52 mm Width 100 mm	Available spool weight: 15 kg Available diameters: 1.0 mm 1.2 mm 1.6 mm
Wire basket spool K300			Plastic spool D300		
	Precision layer wound Dimensions: Ø external 300 mm Ø internal 180 mm Width 100 mm	Available spool weight: 16 kg Available diameters: 1.0 mm 1.2 mm 1.6 mm		Precision layer wound Dimensions: Ø external 300 mm Ø internal 52 mm Width 100 mm	Available spool weight: 15 kg Available diameters: 1.0 mm 1.2 mm 1.6 mm
Round drum					
	Weight: app. 230 kg cored wire Dimensions: Height 780 mm Ø external 520 mm	Available diameters: 1.2 mm			