

BÖHLER X70 L-MC

Metal-cored wire for mechanized and robotic welding of high strength steel



Product features	Product benefits	User benefits
<ul style="list-style-type: none"> » Seamless design » Extremely clean manufacturing process 	<ul style="list-style-type: none"> » Ultra-low-hydrogen weld metal » Total resistance against moisture absorption during storage and use 	<ul style="list-style-type: none"> » Optimal protection against hydrogen cracking
<ul style="list-style-type: none"> » Wide parameter box 	<ul style="list-style-type: none"> » More spray arc welding 	<ul style="list-style-type: none"> » Easy arc setting » No pulsing needed
<ul style="list-style-type: none"> » Dependable arc ignition » Extremely stable spray arc 	<ul style="list-style-type: none"> » No starting defects » No spatter » Allows higher travel speed without undercut » Straight welds with smooth tie-in 	<ul style="list-style-type: none"> » Less post weld cleaning » Less post weld cleaning » Deposition of fillet welds at up to 50 % higher travel speed » Welds with high resistance to fatigue
<ul style="list-style-type: none"> » Designed chemistry 	<ul style="list-style-type: none"> » Reduced silicate islands » All-positional, but optimized for PA and PB » Wide range of applications in thermo-mechanically treated or quenched & tempered fine grain steel up to 690 MPa yield strength » Can be used with M20 and M21 shielding gas » Excellent CVN impact toughness down to -60 °C 	<ul style="list-style-type: none"> » Less post weld cleaning » Flexibility in production and most productive in downhand positions » High flexibility in production to cover all 690 MPa steel grades with the same filler material. » Flexibility to use different shielding gases » Wide margin to cover both strength and CVN impact requirements

Ultra-low-hydrogen

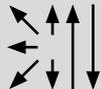
With the innovative Diamondspark L-Line of laser-sealed metal-cored wires by Böhler Welding, fabricators have the ultimate precision tool for the most demanding of welding applications at their disposal. They feature low-hydrogen weld metal at the level of solid wires and are characterized by an extremely stable arc and a wide box of applicable welding parameters. This group of unique filler materials allows fabricators to enter a new era in productive, high quality welding in robotized serial production.



Typical applications

- » Booms for crane & lifting equipment
- » Concrete pumps
- » Car body for lightweight truck trailers in high strength steel
- » Railway lorries and bogies in high strength steel

BÖHLER X70 L-MC

Classifications		Operating data		
EN ISO 18276-A	AWS A5.36	Allows welding with standard power sources.		
T 69 6 Mn2NiCrMo M M 1 H5	E110T15-M21A8-K4-H4	Welding positions	Polarity	Shielding gas
			DC+	EN ISO 14175: M20 & M21

Typical chemical composition, all weld metal, wt. %						
Shielding gas	C	Si	Mn	Cr	Ni	Mo
M21	0.07	0.7	1.6	0.35	2.0	0.3

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	
					+40 °C	-60 °C
Ar + 18% CO ₂	As welded	770 (≥ 690)	830 (770-900)	19 (≥ 17)	130	85 (≥ 47)

Steels to be welded	
EN	ASTM
S550Q-S690Q, S550QL-S690QL, P550Q-P690Q, P550QL-P690QL	A 514 Gr. F, H, Q ; A 709 Gr. 100 Type E, F, H, Q; A 709 Gr. HPS 100W

Approvals
TÜV (12822.), DB (42.014.51), DNV GL, CE

Hydrogen performance		
» BÖHLER X70-MC shows a solid wire like low-hydrogen performance.	» The wire stays factory dry beyond 75 hours of unprotected exposure.	» Diffusible hydrogen content 1-2 ml H ₂ /100 g weld metal.

Overview diameters and packaging			
BS300 16 kg		Octagonal drum 250 kg	
	Wire basket Precision layer wound		Octagonal drum Weight: 250 kg Flux cored wire
	Dimensions: ø external 300 mm ø internal 180 mm Width 100 mm		Dimensions: Height 780 mm ø 510 mm
	Diameters: SAP code 1.0 34863 1.2 34875 1.6 34894		Diameters: SAP code 1.0 34864 1.2 34885 1.6 34896