



## DIAMOND SPARK 52MC BÖHLER HL 51 L-MC

Seamless metal cored wire, unalloyed

### Classifications (\*)

EN ISO 17632-A	EN ISO 17632-B	AWS A5.36	AWS A5.36M
T46 4 M M21 1 H5	T554T15-1M21A-UH5	E71T15-M21A4-CS2-H4 E71T15-M20A4-CS2-H4	E491T15-M21A4-CS2-H4 E491T15-M20A4-CS2-H4

### Characteristics and typical fields of application

Seamless all positional metal-cored high-efficiency wire manufactured with seamless laser technology is especially designed for semi-automatic and fully automatic joint welding of unalloyed and fine-grained constructional steels. The production technology by laser welding of the wire possesses higher rigidity- as a result it offers exact ignition and positioning accuracy. Very high metal recovery between 95 and 97 % are additional benefits of this wire. Steady spray arc-like droplet transfer with minimal spatter formation, good penetration, high resistance to porosity, good wetting behaviour as well as low hydrogen contents (< 2 ml/100 g weld deposit) are further quality features of this metal cored wire. Minimum oxide residues permit the welding of multi passes without the need for inter-run cleaning. Ideal for horizontal and flat fillet welds.

### Base materials

Steels up to a yield strength of 460 MPa (67 ksi)

S235JR-S355JR, S235JO-S355JO, S450JO, S235J2-S355J2, S275N-S460N, S275M-S460M, P235GH-P355GH, P275NL1-P460NL1, P215NL, P265NL, P355N, P285NH-P460NH, P195TR1-P265TR1, P195TR2-P265TR2, P195GH-P265GH, L245NB-L415NB, L450QB, L245MB-L450MB, GE200-GE240, ship building steels: A, B, D, E, A 32-E 36

ASTM A 106 Gr. A, B, C; A 181 Gr. 60, 70; A 283 Gr. A, C; A 285 Gr. A, B, C; A 350 Gr. LF1; A 414 Gr. A, B, C, D, E, F, G; A 501 Gr. B; A 513 Gr. 1018; A 516 Gr. 55, 60, 65, 70; A 573 Gr. 58, 65, 70; A 588 Gr. A, B; A 633 Gr. C, E; A 662 Gr. B; A 711 Gr. 1013; A 841 Gr. A; API 5 L Gr. B, X42, X52, X56, X60, X65

### Typical analysis of all-weld metal (wt.-%)

	Gas	C	Si	Mn
wt.-%	M21	0.07	0.7	1.5

### Mechanical properties of all-weld metal

Condition	Yield strength R <sub>e</sub>	Tensile strength R <sub>m</sub>	Elongation A (L <sub>0</sub> =5d <sub>0</sub> )	Impact work ISO-V KV J		
	MPa	MPa	%	+20 °C	-40 °C	-46 °C
u	490 (≥ 460)	600 (550 – 740)	27 (≥ 20)	170	120 (≥ 47)	70 (≥ 27)
s <sub>t</sub>	450	550	27	180	100	
u	untreated, as welded – shielding gas Ar + 5 – 25 % CO <sub>2</sub>					
s <sub>t</sub>	stress relieved, 620 °C/2 h - shielding gas Ar + 5 – 25 % CO <sub>2</sub>					

### Operating data

	Polarity: DC ( + )	Shielding gases: Argon + 5 – 25 % CO <sub>2</sub>	ø (mm)
			1.0
			1.2
			1.4
			1.6

Welding with standard GMAW power source possible.

(\*) The wire meets the requirements **AWS A5.18: E70C-6MH4**

### Approvals

TÜV, DB, ABS, BV, DNV-GL, CWB, LR, CE

Diam.	PN	Spool
1.2mm	BOHL51LMC12 (old) BO52MC1216 (new)	16kg basket
1.6mm	BO52MC1615	15kg

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