

BÖHLER EMK 4 NC – EMK 6 NC – EMK 8 NC

Non copper-coated, solid GMAW / MAG wires with outstanding welding performance

BÖHLER EMK 4 NC, EMK 6 NC and EMK 8 NC present the latest development in non-copper coated (NC) solid welding wires for the joining of non and low-alloyed steel. Enabled by a newly developed production process, the wires feature an extremely clean and even surface that does not require any copper coating to obtain essential welding characteristics. The special surface treatment is one of the elements that makes the wires outperform standard solid wires in terms of overall welding characteristics.

Excellent and dependable wire feeding properties along with great arc ignition and stability account for the above listed welding productivity improvements and cost savings in comparison with standard copper-coated wires. Another important factor is the high product consistency from batch to batch with hardly any variation in optimal welding parameter settings. The wires are primarily recommended for high duty cycle welding such as in automated and robotic stations, where uninterrupted welding and reliable arc re-ignition is essential for a high production output.

For manual welding, the wires of the BÖHLER EMK NC series are available on 18 kg BS 300 wire basket spools. For mechanized and robotic welding, the BASEdrum or the easy to dispose ECOdrum is the best choice for maximum productivity. It is the most advanced and dependable pay-off system to date, featuring the latest 3-strap technology inside the drum and a full range of accessories for efficient transport and installation for trouble-free operation.

Product features	User benefits
» Extremely clean and even, non copper-coating wire surface	» No clogging of liners with copper flakes and low contact tip wear » Reduced downtime for cleaning of liners and replacement of worn contact tips » Reduced welding fume / reduced copper content in welding fume
» Good arc ignition	» No start spatter » Dependable performance in short beads such as tack and seam welds
» Very stable arc within a wide welding parameter box	» Easy, time-saving parameter setting » Very low spatter level » Reduced post weld cleaning
» Consistent wire feeding properties, also at high feeding rates	» Problem-free welding » Allows productive welding at high current settings
» Very low formation of silicate islands / very clean surface	» Reduced post weld cleaning » Better adherence of coatings onto weld surface
Superior product performance versus copper-coated solid wire	Improved overall welding performance and cost savings in high duty cycle welding (mechanized, robotic)



Weld appearance:



G3Si1 uncoppered



BÖHLER EMK 6 NC

Main applications

- » Thin-plate components in the automotive industry
- » Multi-layer welds in mobile machinery
- » General steel construction

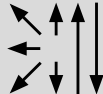
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Classifications				
	EN ISO			AWS
BÖHLER EMK 4 NC	14341-A	G 38 3 M 2Si	G 35 2 C 2Si	ER70S-3
BÖHLER EMK 6 NC	14341-A	G 42 4 M21 3Si1	G 42 4 C1 3Si1	ER70S-6
BÖHLER EMK 8 NC	14341-A	G 46 4 M21 4Si1	G 46 4 C1 4Si1	ER70S-6

Typical chemical composition wire (wt %)			
	C	Si	Mn
BÖHLER EMK 4 NC	0,07	0,70	1,20
BÖHLER EMK 6 NC	0,08	0,90	1,45
BÖHLER EMK 8 NC	0,10	1,00	1,70

Mechanical properties, all weld metal (single values typical)						
	Shield gas	Yield strength Rp 0.2 % MPa	Tensile strength R _m MPa	Elongation A5 %	CVN Impact toughness ISO-V K/J 20 °C	
BÖHLER EMK 4 NC	M21 / CO ₂	420 (≥ 355)	530	22	70 (≥ 47)	-
BÖHLER EMK 6 NC	M21 / CO ₂	440 (≥ 420)	560 (500-640)	28	-	80 (≥ 47)
BÖHLER EMK 8 NC	M21 / CO ₂	480 (≥ 360)	620 (530-680)	26	-	80 (≥ 47)

Steels to be welded	
EN	ASTM
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, shipbuilding steels: A, B, D, E, A 32-E 36	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

Approvals		Operating data		
		Welding positions	Polarity	Shielding gas
BÖHLER EMK 4 NC	-		DC+	EN ISO 14175: M21, C1
BÖHLER EMK 6 NC	TÜV (19133), DB (42.132.66), CWB, CE			
BÖHLER EMK 8 NC	TÜV (19132), DB (42.132.67), CE			

Spool types		Article numbers			
Wire basket BS300, non coppered		Available diameters:	EMK 4 NC	EMK 6 NC	EMK 8 NC
	Precision layer wound	0.8	-	35812	42515
	Dimensions:	1.0	28693	27100	27460
	Ø 300 mm x 100 mm	1.2	28702	27458	27463
	Filling content: 18 kg	1.6	-	31678	-
BASEdrum		Available diameters:	EMK 4 NC	EMK 6 NC	EMK 8 NC
	Dimensions:	0.8	43647	28669	42199
	Ø x h = 520 mm x 780 mm	1.0	28696	27464	27467
	Filling content: 250 kg	1.2	28703	27465	27469
		1.6	-	31682	42363
ECOdrum		Available diameters:	EMK 4 NC	EMK 6 NC	EMK 8 NC
	Dimensions:	0.8	-	-	-
	Ø x h = 520 mm x 870 mm	1.0	-	45722	45724
	Filling content: 250 kg	1.2	-	45723	45725
		1.6	-	-	-