BÖHLER CN 23/12-MC

Metal cored wire, high-alloyed, special applications

Classifications

EN ISO 17633-A	EN ISO 17633-B	AWS A5.9	AWS A5.22
T 23 12 L M M12 1/ TS 309L-M M12 1	TS309L-M M12 1	EC309L	EC309L

Characteristics and typical fields of application

Metal cored wire of type T 23 12 L / ER309L for welding dissimilar joints between high alloyed Cr- and CrNi(Mo)-steels and mild- or low alloyed steels. BÖHLER CN 23/12-MC is designed for very good welding, wetting and feeding characteristics as well as good safety after dilution when welding dissimilar joints. Suitable for service temperatures between –120 °C and +300 °C. The wider arc, in comparison to solid wire, will reduce the risk of lack of fusion and is less sensitive against misalignment of edges and different gap widths.

Base materials

Dissimilar joint welds: of and between high-strength, mild steels and low-alloyed QT-steels, stainless, ferritic Cr- and austenitic Cr-Ni- steels, manganese steels

Surfacing: for the first layer of corrosion resistant weld surfacing on ferritic-perlitic steels in boiler and pressure vessel parts up to fine-grained steel S500N, as well as of high temperature steels like 22NiMoCr4-7 acc. SEW- Werkstoffblatt 365, 366, 20MnMoNi5-5 and G18NiMoCr3-7

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

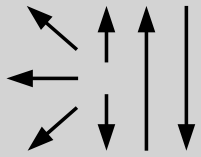
	C	Si	Mn	Cr	Ni
wt-%	≤ 0.03	0.6	1.4	23.0	12.5

Mechanical properties of all-weld metal

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact work ISO-V KV J	
	MPa	MPa	%	+20 °C	–120 °C
u	**400** (≥ 320)	**540** (≥ 520)	**32** (≥ 25)	**90**	**70** (≥ 32)

u untreated, as welded – shielding gas Argon + 2.5 % CO_2

Operating data



Polarity:	Shielding gas:	ø (mm)	Amp A	Voltage V
DC (+)	Argon + 2.5% CO_2	1.6	100 – 370	13 – 32

Preheat and interpass temperature as required by the base metal. Welding with conventional or pulsed power sources (preferably pushing technique torch position, angel appr. 80°). Recommended stick out 15 – 20 mm and length of arc 3 – 5 mm. Positional weldability of metal cored wires is similar to solid wires (puls arc welding is recommended). The gas flow should be 15 – 18 l/min.