

Classifications

ø 1.2 mm / ø 1.6 mm

EN ISO 17633-A	EN ISO 17633-B	AWS A5.22
T 23 12 2 L R M21 (C1) 3	TS 309LMo-F M21 (C1) 0	E309LMoT0-4/-1

ø 0.9 mm

EN ISO 17633-A	EN ISO 17633-B	AWS A5.22
T 23 12 2 L P M21 (C1) 1	TS 309LMo-F M21 (C1) 1	E309LMoT1-4/-1

Characteristics and typical fields of application

Rutile flux-cored welding wire of type T 23 12 2 L / E309LMoT0 for GMAW of dissimilar joints of Cr- and CrNi(Mo)-steels and non- or low-alloy steels, as well as weld cladding of un- or low alloyed base metals preferably in flat or horizontal position. The wire offers a high safety against hot cracking even in the case of high dilution. For Mo-alloyed claddings the product is necessary for the 1. layer. This product achieves high productivity and is easy to operate achieving excellent welding characteristics, self releasing slag, almost no spatter formation and temper discolouration, smooth weld finish and safe penetration. Beside the major savings in time and cost BÖHLER offers a high production quality level together with lowest probabilities for welding errors. Increased travel speeds as well as little demand for cleaning and pickling provide considerable savings in time and money. Suitable for service temperatures of -60°C to +300°C. BÖHLER CN 23/12 Mo-FD ø 0.9 mm is well suitable for welding of sheet metal (thickness greater than 1.5 to 3 mm, for out-of-position welding greater than 5 mm). The slag concept gives the opportunity to weld this diameter in all welding positions. Wires with ø 1.2 mm can be used for wall thicknesses from 3 mm and up. Wire ø 0.9 mm is designed for positional welding, wire ø 1.2 mm and 1.6 mm are recommended mainly for downhand and horizontal welding positions, horizontal/vertical position as well as slightly vertical down position (1 o'clock).

Base materials

dissimilar joint welds: mild steels and low-alloyed constructional and QT-steels among themselves or among each other; unalloyed as well as low-alloyed boiler or constructional steels with stainless Cr-, CrNi- and CrNiMo-steels; ferritic-austenitic joint welds in boiler and pressure vessel parts.

weld surfacing: for the first layer of corrosion resistant surfacing on P235GH, P265GH, S255N, P295GH, S355N - S500N; for the first layer of corrosion resistant weld claddings on high temperature quenched and tempered fine-grained steels acc. AD- Merkblatt HPO, class 3.

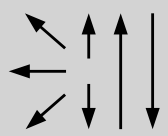
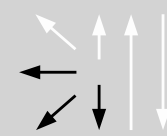
Typical analysis of the TIG rods (wt.-%)

	C	Si	Mn	Cr	Ni	Mo
wt-%	0.03	0.6	1.4	23.0	12.5	2.7

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	-60 °C
u	500 (≥ 350)	700 (≥ 550)	30 (≥ 25)	55	37 (≥ 32)

U untreated, as-welded – shielding gas Ar + 18% CO₂

Operating data						
 ø 0.9 mm	 ø 1.2 mm ø 1.6 mm	Polarity: DC (+)	Shielding gases: Argon + 5 – 25% CO ₂ M1-M3 100% CO ₂ C1 Redrying if necessary: possible, 150 °C / 24 h	ø (mm) 0.9 1.2 1.6	Amp A 120 – 160 125 – 280 200 – 350	Voltage V 21 – 30 20 – 34 25 – 35

Welding with standard GMAW-facilities possible, slightly trailing torch position (angel appr. 80°), when using 100% CO₂ as shielding gas it is necessary to increase the voltage by 2 V. The gas flow should be 15-18 l/min. Preheat and interpass temperatures as required by the base metal.

Approvals

TÜV (05351.), DB (43.014.17), ABS (E 308 MoLT0-4), DNV (NV 309MoL (M21, C1), ø 1.2 mm), GL (4459 (C1, M21)), LR (X (M21)), RINA (309MO S), SEPROZ, CE, CWB (E309LMoT0-1 (4))