

## Classifications

EN ISO 17633-A	EN ISO 17633-B	AWS A5.22
T 23 12 L P M21 1/ T 23 12 L P C1 1	TS309L-F M21 1/F C1 1	E309LT1-4 / E309LT1-1

## Characteristics and typical fields of application

BÖHLER CN 23/12 PW-FD is a rutile flux cored welding wire with fast freezing slag providing excellent positional welding characteristics and fast travel speeds. It is easy to use and operates with a powerful penetrating spray arc transfer, minimum spatter formation and self releasing slag. This flux cored welding wire offers many economical and quality advantages over solid wire pulse arc welding. High deposition rates and productivity gains are easily achievable. Additional cost effective benefits are offered through use of less expensive shielding gases, good wetting characteristics (less grinding), little temper discoloration & bead oxidation, easy operation and safe penetration (reduces the risk of weld defects and associated repair work costs), and smooth and clean weld finish (less post weld work). Due to its characteristics mainly for positional welding and service temperatures between  $-60\text{ °C}$  to  $+300\text{ °C}$ . For downhand & horizontal welding positions (1G,1F,2F) our flux cored wire BÖHLER CN 23/12-FD should be preferred.

## 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 the TIG rods (wt.-%)

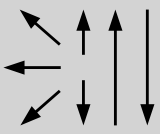
	C	Si	Mn	Cr	Ni
wt-%	0.03	0.7	1.4	23.0	12.5

## 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	-60 °C
u	<b>400</b> ( $\geq 320$ )	<b>540</b> ( $\geq 520$ )	<b>35</b> ( $\geq 25$ )	<b>65</b>	<b>50</b> ( $\geq 32$ )

u untreated, as welded – shielding gas Argon + 18 % CO<sub>2</sub>

## Operating data

	Polarity: DC (+)	Shielding gases: Argon + 15 – 25 % CO <sub>2</sub> 100 % CO <sub>2</sub>	Redrying if necessary: possible, 150 °C / 24 h	ø (mm)	Amps A	voltage V
				1.2	100 – 220	20 – 31
1.6	175 – 260	21 – 29				

Welding with standard GMAW-facilities possible, preferably slightly trailing torch position (angel ca. 80°), slight weaving is recommended for all welding positions; when using 100 % CO<sub>2</sub> 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 (09115.), DB (43.014.22), ABS (E309 LT 1-1(4)), LR (DXV u. O, CMn/SS), GL (4332S{C1, M21}), CWB (E309LT0-1(4)), SEPROZ, CE, DNV, RINA