

# BÖHLER Q E 309L-17

## High alloyed stick electrode for special applications

### Main benefit

Core wire alloyed stick electrode with balanced chemistry to provide safe dissimilar joints and surfacing.



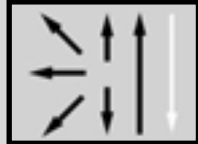

Product features	Product benefits	User benefits
» <b>Core wire alloyed coating concept</b>	» Homogeneous chemistry of every single stick from the beginning up to the end	» Homogeneous weld seams lead to reliable corrosion resistance
» <b>Designed for easy welding</b>	» Minimum spatter formation » Self-releasing slag	» Less post weld cleaning » Lower total welding time
» <b>Rutile coated</b>	» Easy to handle » Very good welding characteristics	» Smooth and clean weld seams » Shiny surface for visible seams
» <b>Increased delta ferrite content (FN ~17)</b> » <b>Moisture resistant coating</b>	» Crack resistant dissimilar joints » Safe against porosity	» Welding for high demanding industries



## Typical applications

- » Variable applications when dissimilar joints are requested
- » Surfacing of unalloyed steel for corrosion resistance
- » Various industries

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Classifications		Operating data	
EN ISO 3581-A	AWS A5.4 / SFA-5.4	Welding positions	Polarity
E 23 12 L R 3 2	E309L-17		

Typical analysis of all weld metal, wt. %					
	C	Si	Mn	Cr	Ni
	0.02	0.7	0.8	23.2	12.5

Mechanical properties, all weld metal (single values typical)					
	Condition	Yield strength $R_{p0.2\%}$ MPa	Tensile strength $R_m$ MPa	Elongation A ( $L_0 = 5d_0$ ) %	CVN Impact toughness ISO-V KV J 20 °C      -60 °C
	As welded	450 ( $\geq 320$ )	570 ( $\geq 520$ )	37 ( $\geq 25$ )	55      42 ( $\geq 32$ )

Steels to be welded	
EN	ASTM
<p>Primarily used for surfacing (buffer layer) unalloyed or low-alloyed steels and when joining non-molybdenum-alloyed stainless and carbon steels. Joints and mixed joints between austenitic steels such as 1.4301 X5CrNi18-10, 1.4306 X2CrNi19-11, 1.4308 GX5CrNi19-10, 1.4401 X5CrNiMo17-12-2, 1.4404 X2CrNiMo17-12-2, 1.4408 GX5CrNiMo19-11-2, 1.4435 X2CrNiMo18-14-3, 1.4436 X3CrNiMo17-12-3, 1.4541 X6CrNiTi18-10, 1.4550 X6CrNiNb18-10, 1.4552 GX5CrNiNb19-11, 1.4571 X6CrNiMoTi17-12-2, 1.4580 X6CrNiMoNb17-12-2, 1.4581 GX5CrNiMoNb19-11-2, 1.4583 X10CrNiMoNb18-12, 1.4948 X6CrNi18-10</p> <p>UNS S30400, S30403, S30809, S31600, S31603, S31635, S32100, S34700, S31640</p> <p>AISI 304, 304L, 316, 316L, 316Ti, 321, 347</p> <p>or mixed joints between austenitic and heat resistant steels such as 1.4713 X10CrAlSi7, 1.4724 X10CrAlSi13, 1.4742 X10CrAlSi18, 1.4826 GX40CrNiSi22-10, 1.4828 X15CrNiSi20-12, 1.4832 GX25CrNiSi20-14, 1.4837 GX40CrNiSi25-12</p> <p>with ferritic steels to pressure boiler steels P295GH and fine grained structural steels to P355N, ship building steel grades A – E, AH 32 – EH 36, A40 – F40, etc.</p>	

Approvals
TÜV (19715.), ABS, DNV, CE

Packaging - Standard size	Carton Packaging - PocketBox
 <p>Weight: Standard box ~ 4,1 kg</p> <p>Diameter: 2.5 x 300 mm 3.2 x 350 mm 4.0 x 350 mm</p>	 <p>Weight 1.0 kg</p> <p>Diameter 2.5 x 300 mm 3.5 x 350 mm 4.0 x 350 mm</p>