

# INOX R309MoL

Electrodes MMA [SMAW]

Stainless and high alloyed steels

<b>CLASSIFICATION:</b>	<b>APPROVALS:</b>	<b>APPLICATION:</b>
EN ISO 3581-A : E 23 12 2 LR 12 DIN 8556 : E 23122 R 12 AWS A-5.4 : E 309MoL-17 W.Nr. : 1.4459		Power generation industry Constructions & Engineering Metallurgy (Steelworks) Shipbuilding&Offshore

- Electrode for high-alloy steels with the addition of molybdenum.
- For welding stainless steel with low carbon steel or low alloy steel.
- The addition of molybdenum provides a higher corrosion resistance and higher strength at high temperatures. Operating range from -20°C to 300°C.
- Recommended for welding dissimilar steels in the shipbuilding industry.
- Excellent as a buffer layer for type 316 steels when the base material is carbon steel.

## Application

Furnaces (burners, doors, fans, piping, recuperators, grates, blower boxes), paper mill equipment, petroleum refining (catalytic recovery systems, recuperators), power generation (dust burners, pipe hangers), thermal treatment, waste incineration plants, rotary kilns, calciners, automotive exhaust system components, heat exchangers, glass blowing components, aircraft parts, boiler partitions, hearth linings, porcelain kiln baskets, annealing containers, inserts for chimneys operating in dry conditions. Used for buffer layers and dissimilar connections where the addition of Mo does not interfere.

## Base material


AISI/ASTM	EN 10088-1/2	W.Nr.	PN
316	X5 CrNiMo 17 12 2	1.4401	OH17N12M2
316L	X2 CrNiMo 17 13 2	1.4404	OOH17N14M2
316LN	X2 CrNiMoN 17 12 2	1.4406	
	G-X10 CrNiMo18 9	1.4410	
	G-X6 CrNiMo18 12	1.4437	
Used for making buffer layers and dissimilar connections where the addition of Mo does not interfere.			

## Typical chemical composition %

C	Si	Mn	Cr	Ni	Mo
<0,04	0,90	0,70	23,00	13,00	2,60

## Typical mechanical properties

<b>Yield strength Re [N/mm<sup>2</sup>]</b>	>350
<b>Tensile strength Rm [N/mm<sup>2</sup>]</b>	>550
<b>Elongation A5 [%]</b>	>25
<b>Impact energy Kv [J]</b>	>47J (-20°C) /
<b>Hardness</b>	210HB /
<b>Coating type</b>	rutile
<b>Ferrite content</b>	FN = app. 20
<b>Welding current</b>	

<b>Welding positions</b>	
<b>Redrying</b>	300 - 350°C / 2 h
<b>Additional description</b>	Austenite microstructure with ferrite at 10-30FN. Preheat and interpass temperatures depend on the base material. Non-hardenable steels do not require preheating. Hardenable steels up to 250°C.
<b>Remarks</b>	The material can be a substitute for Inox R309L, provided that it is not exposed to temperatures that would result in the formation of molybdenum eutectics, which can cause hot cracking, and that the welding process for the weld metal with the addition of Mo is properly carried out.

#### Welding parameters and packing

Ø	Length [mm]	Welding current [A]	Weight of packet [kg]	Weight of carton [kg]
2,5	300 /	50-80	1,5	9,0
3,2	350 /	60-100	1,5	9,0
4,0	350 /	80-140	1,5	9,0
5,0	350 /	130-170	1,5	9,0

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