

# CARBO 4459 MPR

<b>International standards</b>	Material No	1.4459
	EN 1600	E 23 12 2 L R 53
	AWS A 5.4	E309MoL-17

**Approvals** ---

**Typical applications and characteristics**

CARBO 4459 MPR is an AC-weldable rutile-coated electrode with 160% recovery, suitable for joining difficult-to-weld steels and for corrosion-proof claddings.

An austenitic weld metal (CrNiMo 18/ 10/ 2) is obtained already in the first layer.

The alloy is also suitable for welding buffer layers on plated metal sheets and for joining austenitic to ferritic steels which are subject to service temperatures of up to 300° C.

Due to its high alloy level, the electrode produces crack-proof weld deposits.

The addition of molybdenum ensures higher corrosion resistance and higher tensile-strength at elevated temperatures, as compared to the Mo-free material 1.4829.

The weld metal is heat resistant and non-scaling up to 1050° C

**Operating temperature** - 20° C up to + 300° C

**Base materials**

Dissimilar joints of 1.4583 with H I / H II. 17 Mn 4. StE 355.  
1.4583 with P235GH / P256GH, P295GH, P355N

Buffer layers (first layer) for metal sheet plating  
Carrier material: H I / H II. 17 Mn 4.StE 255 up to StE 460.  
P235GH / P256GH, P295GH, P255N up to P460N

1.4401 X5CrNiMo17-12-3  
1.4404 X2CrNiMo17-13-2

<b>Mechanical properties of all-weld metal ( typical values )</b>	<b>Tensile strength</b> $R_m$ N/mm <sup>2</sup>	<b>Yield strength</b> $R_{p0,2}$ N/mm <sup>2</sup>	<b>Elongation</b> $A_5$ %	<b>Impact strength</b> ISO – V J at - 20° C
	660	450	28	50

<b>Weld metal analysis % ( typical wt % )</b>	<b>C</b>	<b>Si</b>	<b>Mn</b>	<b>Cr</b>	<b>Ni</b>	<b>Mo</b>
	< 0,04	0,9	0,7	23	13	2,6

**Welding positions** PA, PB,

**Current** = + / ~ / 50 V

**Rebaking** 1 h. 350° C + / - 10° C (if necessary )

Dia./Length	Amperage (A)	Pcs./packet	Pcs./carton	kg/1000	kg/packet	kg/carton
2,0 x 300	40 - 75	230	920	17,4	4,0	16,0
2,5 x 350	65 - 95	157	629	31,8	5,0	20,0
3,2 x 350	90 - 130	93	372	53,7	5,0	20,0
4,0 x 450	120 - 180	57	229	104,6	6,0	24,0
5,0 x 450	170 - 240	37	147	163,4	6,0	24,0