



# P 81CR

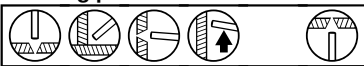
SMAW - (Stick) - MMA  
Low-alloyed

Date: 2009-12-21  
Revision: 21

### Description:

P 81CR is a basic-coated, low hydrogen electrode which deposits a 0.5% Mo type weld metal. It is primarily intended for welding similar composition steels, used where creep rupture strength and ductility at service temperatures up to 550°C are required e.g. EN 16Mo3 and ASTM A335 Grade P1. The Mo content confers some resistance to hydrogen attack in chemical process plant applications. P 81CR is also suitable for ordinary C-Mn steels when higher tensile strength weld metal is required. Preheat and interpass temperature of 100-150 °C is recommended. Post-weld heat treat at 620 °C.

### Welding positions:



### Coating type:

Basic

### Welding current:

DC+

### Hydrogen content / 100 g weld metal

≤ 5 ml

### Metal recovery:

110%

### Redrying temperature:

350 °C, 2h

### Chemical composition, wt.%

	C	Si	Mn	P	S	Cr	Ni
Min		0,10	0,60				
Typical	0,07	0,4	0,80	0,01	0,01	0,02	0,03
Max	0,10	0,60	0,90	0,015	0,015	0,05	0,2

	Mo	Cu	V
Min	0,45		
Typical	0,55	0,02	0,02
Max	0,60	0,2	0,05

### Mechanical properties

	<u>Specified</u>	<u>Typical</u>	<u>PWHT Typical</u>
Yield strength, Rp0.2%:	≥ 390 MPa*	480 MPa**	480 MPa
Tensile Strength, Rm:	≥ 510 MPa*	590 MPa**	590 MPa
Elongation, A5	≥ 22%*	24%**	25%
Impact energy, CV:	20 °C • ≥47 J*	-20 °C • 100 J**	20 °C • 150 J -20 °C • 130 J 620°C x 1h

### Classification:

EN ISO 3580-A  
AWS A5.5

E Mo B 42 H5  
E 7018-A1

### Approvals:

### Note

\*Specified values in PWHT condition

\*\*Column Typical indicate As-welded condition

Core wire:

S ≤ 0.015%

P ≤ 0.015%

N ≤ 0.008%

### Produkt data:

Diam.mm	Length mm	Product code	Current A	Voltage V	Kg weld metal/ kg electrodes	No. of electrodes/ kg weld metal	Kg weld metal/ hour arc time	Burn-off time/ electrode (sec.)
2,5	350	71812500	65-100	22	0,72	71	0,8	55
3,2	350	71813200	95-150	23	0,73	37	1,4	62
4,0	350	71814000	130-200	24	0,73	19	1,8	92
5,0	450	71815000	160-265	25	0,73	12	2,6	103