



P 83CR

SMAW - (Stick) - MMA
Low-alloyed

Date: 2008-07-03
Revision: 23

Description:

P 83CR is a basic-coated, low hydrogen electrode which deposits a low carbon 1.25% Cr/ 0.5% Mo weld metal. It is intended for welding creep resisting steels of similar composition, used in power generation plant operating at temperatures up to 570 °C, e.g. EN 13CrMo4-5, EN 10CrMo5-5, ASTM A335 Gr P11-P12 etc. Also suitable for use in the chemical and petrochemical industries where resistance to hydrogen attack, corrosion from sulphur bearing crude oil and stress corrosion cracking in sour environments is required. Preheat and interpass temperature of 150-200 °C is recommended. Post-weld heat treat at 690 °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	0,05	0,20	0,60			1,0	
Typical	0,07	0,35	0,8	0,01	0,01	1,20	0,02
Max	0,10	0,60	0,90	0,015	0,015	1,4	0,05

	Mo	Cu	V
Min	0,45		
Typical	0,5	0,02	0,02
Max	0,65	0,05	0,05

Mechanical properties

	Specified	Typical	PWHT Typical
Yield strength, Rp0.2%:	≥ 460 MPa*	700 MPa**	550 MPa
Tensile Strength, Rm:	≥ 550 MPa*	750 MPa**	630 MPa
Elongation, A5	≥ 20 %*	21 %**	23 %
Impact energy, CV:	20 °C • ≥47 J*	20 °C • 130 J**	20 °C • 170 J -20 °C • 80 J

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	71832500	65-100	22	0,72	71	0,8	55
3,2	350	71833200	95-150	23	0,73	37	1,4	62
4,0	350	71834000	130-200	24	0,73	19	1,8	92
5,0	450	71835000	160-265	25	0,73	12	2,6	103

Classification:

EN ISO 3580-A E CrMo1 B 42 H5
AWS A5.5 E 8018-B2

Approvals:

Note

PWHT: 690 °C, 1h

*Specified values in PWHT condition

**Column Typical indicate As-welded condition

Core wire:

S ≤ 0.015%

P ≤ 0.015%

N ≤ 0.008%

P 83CR is also available to order as a version with controlled trace elements including following specification:

P max 0.010

Sb max 0.0030

Sn max 0.0040

As max 0.0080

Bruscati factor max 14

This composition makes P 83CR suitable when temper embrittlement resistance is required, as well as when step cooling tests are to be performed.