



P 51

SMAW - (Stick) - MMA
Un-alloyed

Date: 2022-05-17
Revision: 32

Description:

P 51 is a basic-coated low hydrogen AC/DC electrode designed for welding mild and higher strength steels. It combines strength and toughness and is particularly suitable for heavily restrained sections where there can be risk of cracking due to weld stresses. With its excellent general operability and good positional welding characteristics P 51 is often used for pipe welding. It operates without difficulties on both primer-treated and rusty material. The electrode produces a finely rippled bead surface and smooth transition with the base material. This together with the exceptionally good slag detachability, even in root runs, gives P 51 superior radiographic quality.

Welding positions:



Coating type:

Basic

Welding current:

DC(+)-, AC OCV ≥ 70 V

For root passes: DC -

Hydrogen content / 100 g weld metal

≤ 5 ml

Metal recovery:

120%

Redrying temperature:

350 °C, 2h

Chemical composition, wt. %

	C	Si	Mn	P	S	Cr	Ni
Min		0,30	1,10				
Typical	0,05	0,5	1,35	0,01	0,01		
Max	0,09	0,75	1,60	0,020	0,015	0,1	0,2

	Mo	Cu	V	Al	Nb
Min					
Typical					
Max	0,1	0,2	0,05	0,05	0,05

Mechanical properties

	<u>Specified</u>	<u>Typical</u>	<u>PWHT Typical</u>
Yield strength, Re:	≥ 460 MPa	560 MPa	520 MPa
Tensile Strength, Rm:	530-660 MPa	600 MPa	600 MPa
Elongation, A5	$\geq 22\%$	25%	26%
Impact energy, CV:	-46 °C • ≥ 27 J -40 °C • ≥ 47 J	-46 °C • 30 J -40 °C • 60 J	-40 °C • 60 J

600°C x1h

Classification:

EN ISO 2560-A

E 46 4 B 32 H5

AWS A5.1

E 7018-1

Approvals:

CE

TÜV

DB

LR

BV

DNV

ABS

Kennbl. Nr 10.042.03

3Ym H5

3Y HH

3YH5

3Y

Note

Core wire:

S $\leq 0.015\%$

P $\leq 0.015\%$

N $\leq 0.008\%$

Produkt data:

Diam.mm	Length mm	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	70-110	23	0,68	60	1,0	55
3,2	450	110-150	24	0,68	30	1,3	82
3,2	350	110-150	24	0,68	38	1,3	64
4,0	450	140-200	24	0,72	19	1,8	94
4,0	350	140-200	24	0,72	25	1,8	74
5,0	450	200-270	24	0,72	13	2,6	100

*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and ITW Welding AB expressly disclaims any liability incurred from any reliance thereon. Typical data are those obtained when welded and tested in accordance with the corresponding EN ISO specification. Other tests and procedures may produce different results. No data is to be construed as a recommendation for any welding condition or technique not controlled by ITW Welding AB.

ITW Welding reserves the right to change specifications or approvals without prior notice.