



Elgomatic 181CR

GMAW - MIG MAG
Low-alloyed

Date: 2009-04-23
Revision: 12

Description:

Elgomatic 181CR is a copper coated wire for use with the MIG/MAG process, 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. DIN 15 Mo3, BS 3059 Grade 243 and ASTM A335 Grade P1. The Mo content confers some resistance to hydrogen attack in chemical process plant applications. Elgomatic 181CR 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. Stress relieve at 620°C.

Welding current:

DC+

Wire composition, wt.%

| | C | Si | Mn | P | S | Mo |
|---------|------|------|------|-------|------|------|
| Min | 0,08 | 0,50 | 0,90 | | | 0,40 |
| Typical | 0,10 | 0,60 | 1,10 | 0,015 | 0,01 | 0,50 |
| Max | 0,12 | 0,80 | 1,30 | 0,02 | 0,02 | 0,60 |

Shielding gas:

C1, 100% CO₂, 7-12 l/min

M21, 80% Ar + 20% CO₂, 7-12 l/min

Chemical composition, wt.%

| | C | Si | Mn | Mo |
|---------|------|------|------|------|
| Min | | | | |
| Typical | 0.10 | 0.60 | 1.10 | 0.50 |
| Max | | | | |

Mechanical properties

| | <u>Specified</u> | <u>Typical</u> |
|-----------------------|------------------|------------------------------|
| Yield strength, Re: | ≥ 355 MPa | 510 MPa |
| Tensile Strength, Rm: | ≥ 510 MPa | 620 MPa |
| Elongation, A5 | ≥ 22% | 25% |
| Impact energy, CV: | 20°C • >47 J | -20°C • 65 J 20°C • 100 J |

Classification:

EN ISO 21952-A
AWS A5.28

G MoSi
ER70S-A1

Approvals:

DB
TÜV
CE

Kennblatt Nr 42.042.04

Note

The values are based on M21.

Product data:

| Diam.mm | Product code | Spool weight | Dip Current A | Dip Voltage V | Spray Current A | Spray Voltage V |
|---------|--------------|--------------|---------------|---------------|-----------------|-----------------|
| 0,8 | 97102008 | 15 kg K300 | 50-90 | 16-18 | 120-160 | 22-26 |
| 1,0 | 97102010 | 15 kg K300 | 80-150 | 18-22 | 180-230 | 24-30 |
| 1,2 | 97102012 | 15 kg K300 | 110-180 | 18-22 | 240-300 | 26-33 |