

## MMA Electrodes Nickel and Copper alloys

SUPRANEL SR is a basic coated MMA electrode for the welding of heat and corrosion resistant nickel alloys. The weld metal retains ISO-V toughness down to -196°C and is creep-resistant <800°C. Due to the high toughness properties and resistance to cracking, applications include the joining of difficult-to-weld steels and maintenance welding of critical components. Even at higher temperatures, there is only limited carbon diffusion in the weld metal, thus avoiding the formation of crack-prone carbides at the weld interface of dissimilar joints. The coefficient of thermal expansion is between austenitic and ferritic steels, therefore applications include the joining of ferritic to austenitic steels, dissimilar welding, at operating temperatures or postweld heat treatment >300°C.

Classification	
EN ISO	14172: E Ni 6092 (NiCr16Fe12NbMo)
AWS	A5.11: E NiCrFe-2

Approvals	Grade
ABS	ENiCrFe2
BV	UP
DNV	H10

CE

### Chemical analysis (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe
≤ 0.05	2	0.2	≤ 0.020	≤ 0.015	16	Rem	1	1.8	8.5

### All-weld metal Mechanical Properties

Heat Treatment	Yield Strength (MPa)	Tensile Strength (MPa)	Elongation	Impact Energy ISO - V (J)	
				+20 °C	-196 °C
As Welded	≥ 360	≥ 550	≥ 35	≥ 80	≥ 60

### Materials

UNS N06600; UNS N08800; UNS N08810

2.4816 (NiCr15Fe); 1.4876 (X10NiCrAlTi32-20); 1.4958 (X5NiCrAlTi31-20)

Cladding or buffer layer on steels.

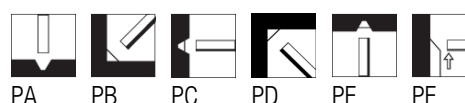
### Storage

Keep dry and avoid condensation.

Re-dry at 300-350 °C for 2 hours, 5 times max

### Current condition and welding position

DC+



### Packaging data

Diam. (mm)	Length (mm)	Current (A)	Approx. weight (kg/1000)	CBOX		SMPA		VPMD	
				PC	Code	PC	Code	PC	Code
2.5	300	50-70	17.3	220	●			105	●
3.2	350	70-95	33.9	140	●	10	●	65	●
4.0	350	95-130	48.6	100	●	8	●	45	●