

## CARBO 4120 MPR

### International standards

Material No.	1.4120
EN ISO 3581-A	EZ 13 1 R 52
EN 14700	Fe7-UM-200-PR

### Approvals

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### Characteristics and typical applications

CARBO 4120 MPR is a rutile coated electrode with a recovery of 160% for plating and joining equal and similar ferritic Cr-steels and cast steels. Proper weldings are subject to the recommended heat treatment. The electrode is specially suitable for sealing surfaces on water-, steam and gas-valves, especially for sulphuric gases. The deposit is resistant to seawater, thin acids and scale resistant in air and oxidizing gases up to 800°C. The deposits can be tempered.

### Recommendations for fabrication

Since ferritic steels tend to embrittlement caused by coarse grain development the heat input should be as low as possible. For hardfacing on low alloyed base materials a preheating of 150°C-350°C subject to the thickness (on materials with higher strength 350°C) should be done. Post weld treatment is not necessary but quench hardening to the desired hardness may be applied.

### Operating temperature

20°C up to 500°C

### Base materials

1.4021 X20Cr13      1.4120 GX20CrMo13

### Mechanical properties of all-weld metal (typical values)

Tensile strength Rm N/mm <sup>2</sup>	Yield strength Rp0,2 N/mm <sup>2</sup>	Elongation A5 %	Hardness HB
730	540	12	ca. 150

### Weld metal analysis % (typical)

C	Si	Mn	Cr	Mo	Ni
0,2	0,9	0,8	14,0	1,2	1,0

### Current

= + / ~, 50 V

### Welding positions

PA, PB

### Rebaking

1 h, 350°C + / - 10° C ( if necessary )

Dia./Length	Amperage (A)	Pcs./packet	Pcs./carton	kg / 1000	kg / packet	kg / carton
2,5 x 350	60 - 90	178	712	28,1	5,0	20,0
3,2 x 350	80 - 120	105	421	47,5	5,0	20,0
4,0 x 450	120 - 160	65	259	92,6	6,0	24,0
5,0 x 450	160 - 220	41	166	144,7	6,0	24,0