

# GRINOX 175

## IDENTIFICATION

GRINOX 175 E 630-16

## CLASSIFICATION

AWS/SFA 5.4 E 630-16

## DESCRIPTION

A rutile basic coated special electrode Developed for welding high strength martensitic precipitation hardening steels. The deposited weld metal is of X-ray quality.

## WELD METAL ANALYSIS (RANGE) %

C	Mn	Si	S	Mo	P	Cr	Ni	Cu	Nb
0.05 max	0.35 - 0.70	0.7 max	0.030 max	0.30 max	0.035 max	16.0 - 16.75	4.5 - 5.5	3.25 max	0.15 - 0.30

## MECHANICAL PROPERTIES (TYPICAL)

UTS (MPa)	EL (%) (L=5D)
950 min	12 min

After PWHT, 1035+10°C for 1 hr, and then Precipitate hardening at 610-630°C for 4 hrs Followed by air cooling to ambient temperature.

## TYPICAL APPLICATIONS

For welding high strength martensitic stainless steels, precipitation hardened by additions of copper.

Application include :

- Pump Shafts
- Impellers
- Hydraulic Equipment

Used in :

- Oil & Gas Industries
- Petro-Chemical Plants
- Marine & Nuclear Engineering
- Custom 630 (Carpenter Technology)
- ASTM A747 CB-7Cu-1, CB-7Cu-2 (cast alloys)

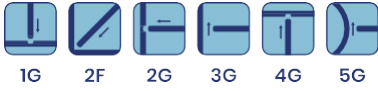
## MATERIALS TO BE WELDED

Precipitation hardening steel such as :

- ASTM type 630
- 17-4PH (Armco Steel)

**MICROSTRUCTURE :** In the PWHT condition the microstructure consists of precipitation hardened tempered martensite with some retained austenite.

**REDRYING :** 300°C / 2 hrs. max 5 cycles, 10 hr. total.

**WELDING POSITION :****PACKING PARAMETERS**

Size (mm)	Length (mm)	AMPS AC / DC (+)	Packing / Box (kg)	Packing / Box (Pcs)
2.5	350	70 - 110	2 x 5 = 10	94 x 5 = 470
3.15 / 3.20	350	80 - 140	2 x 5 = 10	60 x 5 = 300
4	350	100 - 180	2 x 5 = 10	38 x 5 = 190
5	350	180 - 210	2 x 5 = 10	24 x 5 = 120