



## DESCRIPTION

### Basic coated electrode for creep resisting 2¼Cr-1Mo steels

Designed for prolonged elevated temperature service up to about 600°C, especially in steam generation power plants (piping, valve bodies, turbine casting, boiler superheaters...). Suitable for corrosion resistance to sulphur bearing crude oil at 250-450° C. Used in chemical and petro-chemical industries for resistance to hydrogen attack in fabrication of hydrocrackers, coal liquefaction plant and NH3 pressure vessel operating at up to 450° C. Its basic coating ensures excellent positional welding characteristics with good gap bridging ability.

## SPECIFICATIONS

EN ISO 3580-A	E Cr Mo 2 B 32 H5	AWS A5.5	E9018-B3
Shielding	-	Positions	PA, PB, PC, PD, PE, PF
Current	DC+, AC	Packaging Type	Carton box

## ASME QUALIFICATIONS

F-No (QW432)	4
A-No (QW442)	4

## CHEM. COMP. %

C	0.07
Mn	0.8
Ni	0.05
Cr	2.25
P	0.015
S	0.01
Mo	1
Si	0.6
Cu	0.05

## MECHANICAL PROPERTIES

	MIN. PER STANDARD	PRODUCT
Tensile strength R <sub>m</sub> MPa	620	700
Yield strength R <sub>p0.2</sub> MPa	530	520
Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) %	17	18
Impact Charpy ISO-V	47J	80J @ 20°C
Impact Charpy ISO-V	-	-

## WELDING PARAMETERS

	2.5 mm	3.2 mm	4.0 mm	5.0 mm
Ampere	65A - 90A	90A - 130A	140A - 180A	190A - 230A
Voltage	-	-	-	-
Packaging	45 pcs/kg	21 pcs/kg	14 pcs/kg	10 pcs/kg
Packaging Type	Carton box	Carton box	Carton box	Carton box

## NOTES

Pcs/kg is indicative, actual number may vary ± 5%. Preheat and interpass temperature 200 to 300 °C, post-weld heat treatment of test piece 690 to 750°C for 1h.





# 2Cr1Mo

DESCRIPTION

CREEP RESISTING STEELS

2Cr1Mo

## APPLICATION

The 2Cr1Mo consumables are designed to ensure durability and performance at high temperatures, up to 600 °C. These materials are widely used in steam power plants, essential for the construction of pipework, turbine casings, steam chambers, valve bodies, and boiler superheaters. Additionally, they are used in refineries for their resistance to corrosion caused by sulfur-containing crude oil, effectively operating at temperatures between 250 and 450 °C. In the chemical and petrochemical industry, these materials are crucial for resisting hydrogen attack. They are employed in the manufacture of hydrocrackers, coal liquefaction plants, and NH<sub>3</sub> pressure vessels operating up to 450 °C. Under welding conditions, the materials offer deposits with a hardness of 300 HV, ideal for build-up or hardfacing, metal-to-metal wear resistance, heavy impact, and repairs of P20 tool steel. A minimum preheat and interpass temperature of 250 °C is recommended, increased up to 300 °C for sections of considerable thickness, maintaining the temperature throughout the welding cycle and subsequently. Unless otherwise specified, it is imperative to perform post-weld heat treatment (PWHT), generally carried out at 690 °C, with duration varying based on the section thickness.

## ALLOY TYPE

2¼Cr-1Mo alloyed steel consumables for elevated temperature service.

## MICROSTRUCTURE

After PWHT, the microstructure consists of tempered bainite.

## MATERIALS

**EN W.Nr.:** 11 CrMo 9-10 (1.7383), 10 CrMo 9-10 (1.7380), GS-18CrMo 9 10 (1.7379), GS-12CrMo 9 10 (1.7380), 6CrMo 9 10 (1.7385), 12CrMo 9 10 (1.7375)

**ASTM:** A387 Gr 21&22, A182 F22, A217 WC9, A234 WP22, A199 T21,T22, A200 T21,T22, A335 P22, A234 WP22

