G-TECH 413

SMAW

COPPER ALLOYS
CuNi 70-30

DESCRIPTION

Special basic coated electrode, with alloyed core

Suitable for welding Cupronickel alloys (up to 30% Ni). The deposited metal has exceptional resistance to marine corrosion and shows good corrosion resistant fatigue. Therefore it is suitable also for joining and build-up welding in desalination plants, naval accessories, water treatment plants, heat exchangers and chemical industry equipments. Preheating is not necessary and avoid continuous welding, keep the interpass temperature under 100°C. The arc length should be short as possible and adopt straight bead method.

SPECIFICATIONS

AWS A5.6	ECuNi	**DIN 1733**	EL-CuNi30Fe
Shielding	-	**Positions**	PA, PB, PC, PD, PF
Current	DC+	**Packaging Type**	Carton box

ASME QUALIFICATIONS

F-No (QW432)	34
A-No (QW442)	-

HARDNESS

90HB

CHEM. COMP. %	DEFAULT
Mn	1.3
Ni	30
Si	0.15
Fe	0.7

MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	350	370
Yield strength $R_{p0.2}$ MPa	-	230
Elongation A (L_0=5d_0) %	20	30
Impact Charpy ISO-V	-	-
Impact Charpy ISO-V	-	-

WELDING PARAMETERS	2.5 mm	3.2 mm	4.0 mm
Ampere	80A - 120A	100A - 140A	150A - 200A
Voltage	-	-	-
Packaging	pcs/kg	pcs/kg	pcs/kg
Packaging Type	Carton box	Carton box	Carton box

NOTES

Pcs/kg is indicative, actual number may vary ± 5%.

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DESCRIPTION

APPLICATION

The CuNi 70-30 consumable is particularly suitable for overlay and cladding operations, provided a buttering layer is created. This is commonly done using alloy 400 or pure nickel. The 70/30 consumables are ideal for welding 70/30, 80/20, and 90/10 base materials. They match the 70/30 base materials in terms of strength and color, and allow for overmatched welding on 90/10 alloys for optimal strength. This material is widely used in offshore constructions, desalination plants, evaporators, condensers, and systems for treating saline and marine water. No preheat is required, and the maximum interpass temperature is 150°C, with no need for PWHT. It is crucial to avoid contamination in the weld area with foreign materials, particularly sources of lead, tin, or zinc, to prevent cracking in the weld metal.

ALLOY TYPE

70/30 copper-nickel alloys.

MICROSTRUCTURE

Solid solution, single phase alloy.

MATERIALS

EN W.Nr.: 2.0872 (CuNi10Fe), 2.0882 (CuNi30Mn1Fe), 2.0883 (CuNi30Fe2Mn2)
ASTM: C71500, C96400 (cast)
UNS: C71500, C96400, C70600, C96200
PROPRIETARY: Cunifer 30 (VDM), Cunifer 10 (VDM), Osna®-30 (KME), Osna®-10 (KME)

WELDING & PWHT

Particularly suitable for welding applications that require high resistance to corrosion in aggressive environments. This includes systems exposed to saline and seawater, where long-term durability is critical.

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