Ultimium N112

Tungsten carbide AC-DC MMA electrode for protective wear coatings

Description:
A high efficiency, tungsten carbide alloy electrode that deposits a super hard alloy. The electrode consists of three concentric sections: a solid tungsten carbide inner core; a highly conductive alloy sheath; and an outer "Frigid Arc" coating that contains chromium and vanadium. As a result of this the advanced alloy system, N112 weld protective coatings represents in uniform hardness and abrasion-resistance. It deposits on overlay of homogeneous tungsten carbide, reinforced by the addition of secondary carbide-forming elements in the coating. Weld metal transfer characteristics are smooth giving the welder exceptional control of the deposit.

Not only is the hardness exceptionally high but it is also uniform as well. Absence of uneven aggregates of carbide particles permits grinding to a mirror finish, resulting in deposits with an exceptionally low coefficient of friction.

- Exceptional abrasion resistance.
- Low coefficient of friction.
- Compressive strength.
- Excellent deposition qualities.
- Self releasing slag.
- Extra smooth, regular deposits.
- High metal recovery.

Technical data:
Hardness (HRC): 68-72 (av. With tungsten carbide)

Applications:
N112 can be used on all steels.
Scrapers
Conveyors
Blades
Augers
Tongs

Procedure for use:
Preparation:
Remove all damaged and fatigued base material and where possible remove sharp corners from areas to be welded by using Exotrode.
Preheat:
Preheating will depend upon type, size and carbon equivalent of the base material.
For a general guide:
For steels with a carbon equivalent up to 0, 25% carbon: preheating is not essential, however heating up to 100°C may be applied.
For steels between 0, 25% and 0, 45% carbon equivalent: preheating between 100°C and 250°C is recommended.
Steels above 0, 45% carbon equivalent: preheating between 250°C and 350°C is recommended.
Do not preheat austenitic manganese steels -maintain components as cool as possible, and employ a balanced welding technique, in order to avoid local overheating.
Welding:
When depositing direct to the base material select lowest possible current in order to minimise weld metal dilution. Where large and heavy build ups are required use 6868XHD, where relatively high impact is involved use 680CGS, for 14% Austenitic Manganese steels using N40. Maintain an arc length equal to the electrode diameter and an electrode angle of 80-85° to the direction of travel. Weaving up to 2 x the electrode diameter is permissible.
Welding Parameters:
Current: **AC or DC (-) reverse**

Procedure A:
For heavy sections and high deposition speed.

Ø Electrode (mm)	Amperage (A)
5.0	170-225

Procedure B:
For small sections, minimum dilution and low heat input.

Ø Electrode (mm)	Amperage (A)
5.0	100-160

Storage and handling:
Safely stack and store electrodes in a dry location to avoid humidity pick up or coating damage. Should electrodes become damp, the following re-drying conditions before use are recommended: 350°C / 2 hr.

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