



Application/properties:

Thick rutile covered high-alloy electrode that has high resistance to wear and is used as a hard facing on parts that are exposed to severe wear. The weld appearance is smooth and clean and without undercut at the weld edge. The deposition rate is about ۱۷۵% and can be removed only by grinding. The weld metal obtained from this electrode has very high wear resistance against minerals due to its high carbon content and the formation of chromium carbide and complex carbides. Due to its metallurgical structure, it has good corrosion resistance, high temperature stability and also good oxidation resistance up to ۱۰۰۰°C (hardness at temperatures above ۴۵۰°C is lower than cobalt alloys). The hardness of the weld metal depends on the chemical analysis of the base metal, the number of layers of weld metal, the cooling rate and the welding parameters.

Weld metal analysis in % (typical values):

C	Cr	Mn	Si	Mo+Nb+V+W
۰.۵	۳۱	۲	۱	۳

Mechanical Properties of all-weld metal:

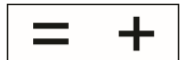
(single values are typical values)

Hardness as-welding (HV)

۷۰۰ - ۸۵۰ (۶۰-۶۶ HRC)

Welding Parameters

Diameter (mm)	Length (mm)	Amperage (A)
۳.۲۵	۴۵۰	۱۱۰ - ۱۶۰
۴.۰	۴۵۰	۱۵۰ - ۲۱۰
۵.۰	۴۵۰	۱۹۰ - ۲۶۰



Materials:

Hard coating of parts that are exposed to wear with mineral materials, such as road construction and mining machinery, dredging, iron and steel production industries, cement industries, drilling bits, material feeding screws, conveyor belts, mixer blades, guide parts in rolling equipment, parts of liquid agitators, etc.

Considerations:

- Only dry electrodes should be used.
- Re-drying: ۲ hours at ۳۰۰ to ۳۵۰ °C.
- Controlling the cooling rate and preheating at ۲۰۰ to ۴۵۰ °C can reduce the occurrence of transverse cracks in the weld surface.
- Transverse cracks in hard weld metal do not have harmful effects.
- The maximum number of welded layers during the reconstruction of parts should be limited to ۲ layers and if necessary ۳ layers should be used (maximum weld metal thickness ۸ mm). In large rebuilding of low alloy steels or Hadfield steels (۱۳% manganese), if more layers of weld metal are required, an intermediate layer with the AMA ۱۸.۳J electrode should be used.