

AI-1779C

Specifications

DIN EN 14700: T Ni20

(DIN 8555: MF21-55-CGZ) for high abrasion & corrosion

Description and Applications

AI-1779C refers to a flux cored nickel wire filled with Fused Tungsten Carbide (FTC) granules set within a Nickel matrix including elements of Chrome, Boron and Silicon and is designed for semi-automatic welding. **AI-1779C** is a special alloy for the protection of wear surfaces against extreme abrasion combined with high corrosion. The as-welded deposit consists of approximately 62% FTC and 38% Ni-Cr-Si-Boride-matrix. The resulting weld requires a low melting range of between 900 – 1050°C (1,652 – 1,922°F) and features a self fluxing characteristic that produces a slag-free, smooth surface. The deposits provide for the highest levels of abrasion resistance and are also highly resistant to corrosive media, acids and alkalis.

Applications: **AI-1779C** is designed for welding on all types of steel and for hardfacing cast iron and for repairing oil tools such as stabilizers, openers, gauge bars etc. **AI-1779C** can be replaced by **AI-1541VC** in applications where austenitic and heat sensitive castings are concerned.

AI-1779C is recommended for all applications in the petroleum industry, mining industry, geothermal industry, minerals processing, food processing and other high abrasion / high corrosion areas.

Typical Weldmetal Analysis

MATRIX (Ni-Cr-Borides) FTC

Mechanical Properties of Weldmetal

	As Welded
Hardness	FTC: ~ 2360 HV0.1
Melting Point	MATRIX: 1,070°C FTC: 2,860°C
Density	MATRIX: 8.1 g/cm ³ FTC: 16.0 – 17.0 g/cm ³
Structure	FTC with Ni-Cr-Si +Borides
Machinability	Deposit can only be effectively ground using a diamond wheel
Shielding Gas	98% Ar + 2% O₂ or 100% Ar

Welding Parameters

Diameter (mm)	Current type	Amps
1.2	DC(+)	150-220
1.6	DC(+)	180-300
2.4	DC(+)	250-380

Welding Instructions

Keep the area to be hard faced free of rust, scale, oil, damp and other contamination. Avoid overheating the base material and choose starting amperage and voltage as low as possible within the recommended range to reduce heat input into the tool and to avoid dissolution or destruction of the fused tungsten carbide.

Controlled post-weld cooling is highly beneficial.

Welding Positions

(1G, 1F) Downhand/flat position, (2F) Horizontal position, (2G) Horizontal vertical position

Disclaimer

All figures in this datasheet should be considered indicative only. No guarantee is made as to their accuracy.

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