Wearshield® Frog Mang®

Key Features

- Coated electrode specifically for build up of manganese steels
- Ideal for severe impact, resists deformation Multi-layer procedures are possible with correct control
- No pre-heat is required. interpass tempreature limited to 250°C maximum - some preheat may be necessary on carbon and low alloy steels to prevent pull out

Typical Applications

- Manganese crossing diamonds
- Manganese railroad frogs
- Swing hammers
- Austenitic manganese deposit to handle severe loads of railroad cars

Conformances

AS/NZS 2576: 1220 A4*
(nearest equivalent)

Welding Positions

Diameter / Packaging

Diameter mm	Length mm	Part Number	Packaging
4.8	350	ED033135	Easy Open Can 3 x 4.5kg

Mechanical Properties

	Rockwell – HRc	
	As Welded	Work Hardened
Typical Results - As Welded	20-30	40-45

Deposit Composition

	%C	%Mn	%Si	%Cr
2 or more layers	1.2	21.0	0.4	5.3

As welded microstructure consists mainly of austenitic Manganese

Typical Operation Procedures

Current (amps)	
Polarity	**4.8mm**
AC/DC+	175-215

ADDITIONAL INFORMATION:
Weld preparation: Remove all damaged and foreign material by air-carbon arc gouging or grinding. Make sure all defective metal is removed. In the event hairline cracks remain at flangeway depth, use a 3.2 mm E308 stainless electrode, to tie up these cracks. This will avoid hot cracking during the build-up process. Apply only thin layers and do not build-up with E308 stainless. This is for emergency situations where no other alternative is available to repair flangeway cracks. Use DC+ to avoid excessive spatter. When possible, weld at alternate locations (skip weld) to avoid overheating of metal in a localized area. Do not exceed interpass temperature of 250°C. Use a temperature marker 13 mm from the welded area at frequent intervals to ensure that interpass temperature does not exceed 250°C. Use a short arc and a stringer bead width of 10 to 13 mm. Finish the casting by grinding to a safe contour. Leave enough weld metal during the welding process to allow a level and even contour after grinding. Make sure all areas are finished and the casting has no further visible defects. Check with straight edge so that the casting is free of low spots. As with all austenitic manganese welding products, interpass temperatures should be limited to 250°C maximum. A stringer bead, or at most, a slight weave is recommended to limit heat build-up. Excessive heat build-up causes manganese carbide precipitation which damages the toughness of austenitic manganese.