Castolin Eutectic®
Eutectic Castolin

Premium Open Arc, Wearfacing Wire
for Impact, High Compression Loading
and Combined Abrasion

Eutectic® 5022FW

- Excellent for combatting impact plus abrasion
- May be used for high volume re-builds on “Hadfield” managnese castings and carbon steels
- Excellent work-hardening properties

Eutectic® 5022FW

5022FW-Manganese Steel is a high manganese wire for combating impact plus abrasion. It can be used for high-volume rebuilds on "Hadfield" manganese castings, carbon steels and most steel used for mining and construction equipment. Weld deposits have excellent work-hardening properties, and under the right application conditions can achieve hardnesses up to 45-50 HRC.

TECHNICAL DATA

Typical Values	
Hardness as-deposited (2-passes):	HRC 15-20 depending on dilution
Work Hardening Hardness:	45-50 HRC
Power Source Type:	Constant Voltage & Integrated Wire Drive
Current polarity:	DC (+) electrode positive

Diameter	Volts	Amps	Wire Stickout
1/16" (1.6mm)	22-28	190-250	¾ ± 1/16

Note: Parameter adjustments will be needed depending on the size, weight, and shape of the part to be welded. For optimum wear resistance keep to the low end of the amperage & voltage ranges.

Caution: Although a 2-roll wire drive assembly will work the optimum for maintaining arc voltage stability and consistent and smooth wire feeding is a serrated 4-roll drive assembly. Smooth drive rolls are not recommended!

PROCEDURE FOR USE

Step 1: Remove all "old" cracked or spalled weld metal down to a sound base.

Step 2: FW-Manganese Steel has unlimited build-up, it is often field practice to deposit a base-coat depending on the type of wear, severity, and the total amount of build-up required.

Step 3: Preheat the part to be hardfaced depending on its air hardenabilty potential and/or carbon level. For most constructional steels a nominal preheat of 150°F is suggested and for medium alloy steels, ~250°F.

Note: Do not heat high manganese steels such as Hadfield Castings!

Step 4: After checking that the welding conditions are optimal by testing on scrap metal, position the gun head at a 70-80° angle and use a "push" technique for downhand welding. For fully automated welding such as hardfacing cement crusher rolls, the wire should exit at about a 10° lagging angle from top dead center. Using this technique will assure a smooth and regular weld deposit profile with the optimum level of fusion.

Note: If welding is interrupted and the part being welded cools to room temperature, make sure to reheat to the original preheat temperature. For hardenable steels slow cooling is advised using silicone blankets, vermiculite, or other environmentally suitable heat-retardant material.

Step 5: For most applications, other than a superficial grind, finishing is not required. If some level of profiling is needed, grinding can be used for more precise shaping.

TYPICAL APPLICATIONS

APPLICATIONS	INDUSTRIES
Roll Grinders - anvils - breaker bars	Cement
Bucket scoops - clamshells - pump casings	Dredging
Latch keys/bars - side lips - teeth	Open-Pit Mining
Scraper blades - stump removers	Earthmoving
Secondary crushers - discharge chutes	Quarries
Plows - recycle screws - asphalt blenders	Municipal Works

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