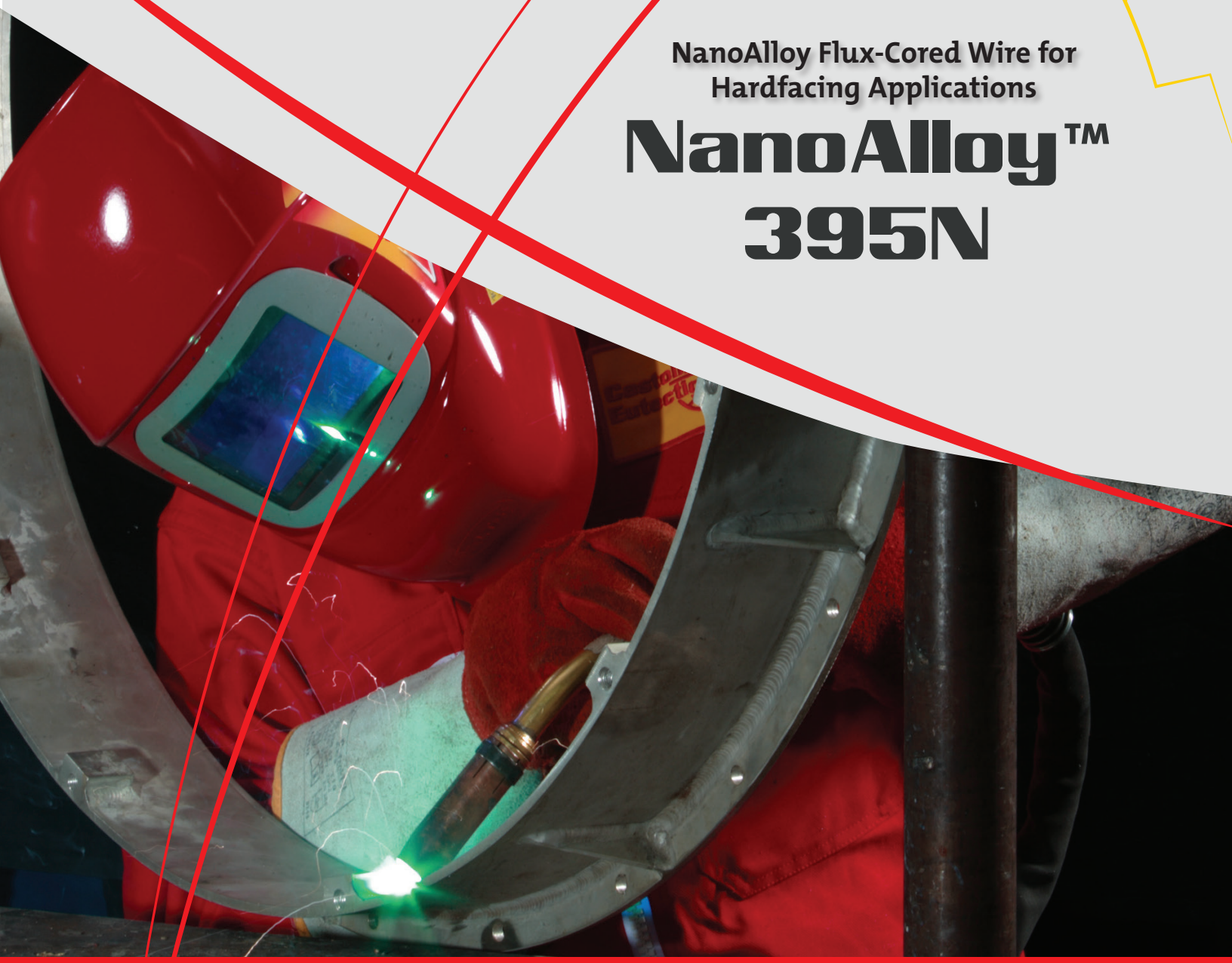
Castolin Eutectic®
Eutectic Castolin

NanoAlloy Flux-Cored Wire for Hardfacing Applications

NanoAlloy™ 395N



- Unique NanoAlloy structure for unmatched abrasion and erosion resistance
- Produces tough uniform 68 HRC weld deposits
- Wears like tungsten carbide at a fraction of the cost
- Outlasts chrome carbide and complex carbide alloys
- Ensures enhanced productivity and cost savings

NanoAlloy 395N

NanoAlloy 395N leads the newest generation of hardfacing products based on the science and engineering of ultra-fine, submicron grain structures. Weld deposits have a high volume fraction of ultra-hard, complex borocarbides distributed in a matrix uniquely balanced between liquid and crystalline phases.

Finely dispersed Nano-particles minimize wear of the underlying matrix by maximizing the complex borocarbides exposed at the wearing surface. 395N outperforms chromium and complex carbides by up to 40%! 395N's wear resistance is equal to that of a 35% tungsten carbide alloy at a lower cost.

TECHNICAL DATA

Typical Values	
Hardness:	67-70 HRC
Temperature limit:	1200°F (650°C)

Parameters	
Coverage: 5.5 lbs on 1 ft² @ 1/8" thick Shielding Gas (optional):	1) 98% Ar + 2% O_2 2) 75% Ar + 25% CO_2
Polarity:	DCEP

Diameter	Volts	Amps	Wire Feed	MIG	Open Arc	Gas Flow (CFH)
.045 (1.2 mm)	24	135	275	½" - ¾"	¾" - 1"	35-45
1/16" (1.6 mm)	24	220	275	½" - ¾"	¾" - 1"	45-60

PROCEDURE FOR USE:

PREPARATION: Remove all "old" cracked or spalled material down to a sound base. Clean any residual oxides, coatings, spatter or residue. NanoAlloy 395N may be applied up to ½" thick, at least four passes.

NANOALLOY 395N SHOULD NOT BE USED ON MANGANESE/HADFIELD STEELS AS IT WILL NOT BOND!

WELDING TECHNIQUE: After checking that the welding conditions are optimal by testing on scrap metal, position the gun head at a 70-80° angle from the workpeice and use a "pull" technique. For fully automated welding such as hardfacing cylindrical parts, the wire should exit at about a 10° leading angle from top dead center. Using this technique will assure a smooth and regular weld deposit profile with the optimum level of fusion. 395N can be used with or without shielding gas protection.

Note: For best results apply NanoAlloy 395N with as little heat as possible, allowing parts to cool between layers.

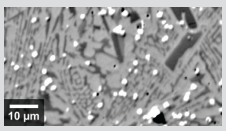
FINISHING: For most applications, other than a superficial grind, finishing is not required. If some level of profiling is needed, grinding is recommended.

TYPICAL APPLICATIONS

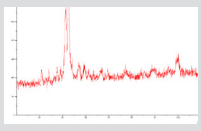
Designed for protective coatings with extreme resistance to abrasion, erosion combined with moderate shock on carbon, alloy, stainless and cast steels.

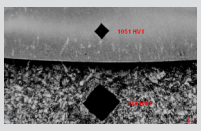
APPLICATIONS	INDUSTRIES
Bucket Teeth/Lips	Mining
Crusher Bars	Earth Moving
Shredders	Waste/Recycling
Feed Screws	Pulp and Paper
Roll Crushers	Iron and Steel Works
Dredging Teeth	Construction
Recycling Knives	Waste/Recycling

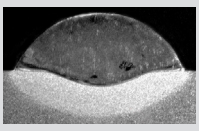
The unique NanoAlloy type microstructure ensures exceptional performance against wear by severe abrasion, erosion combined with moderate impact from ambient to elevated service temperatures.



395N microstructure


X-ray diffraction (20 nm)


Single pass max. hardness


Low dilution weld profile

Castolin Eutectic® Eutectic Castolin

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