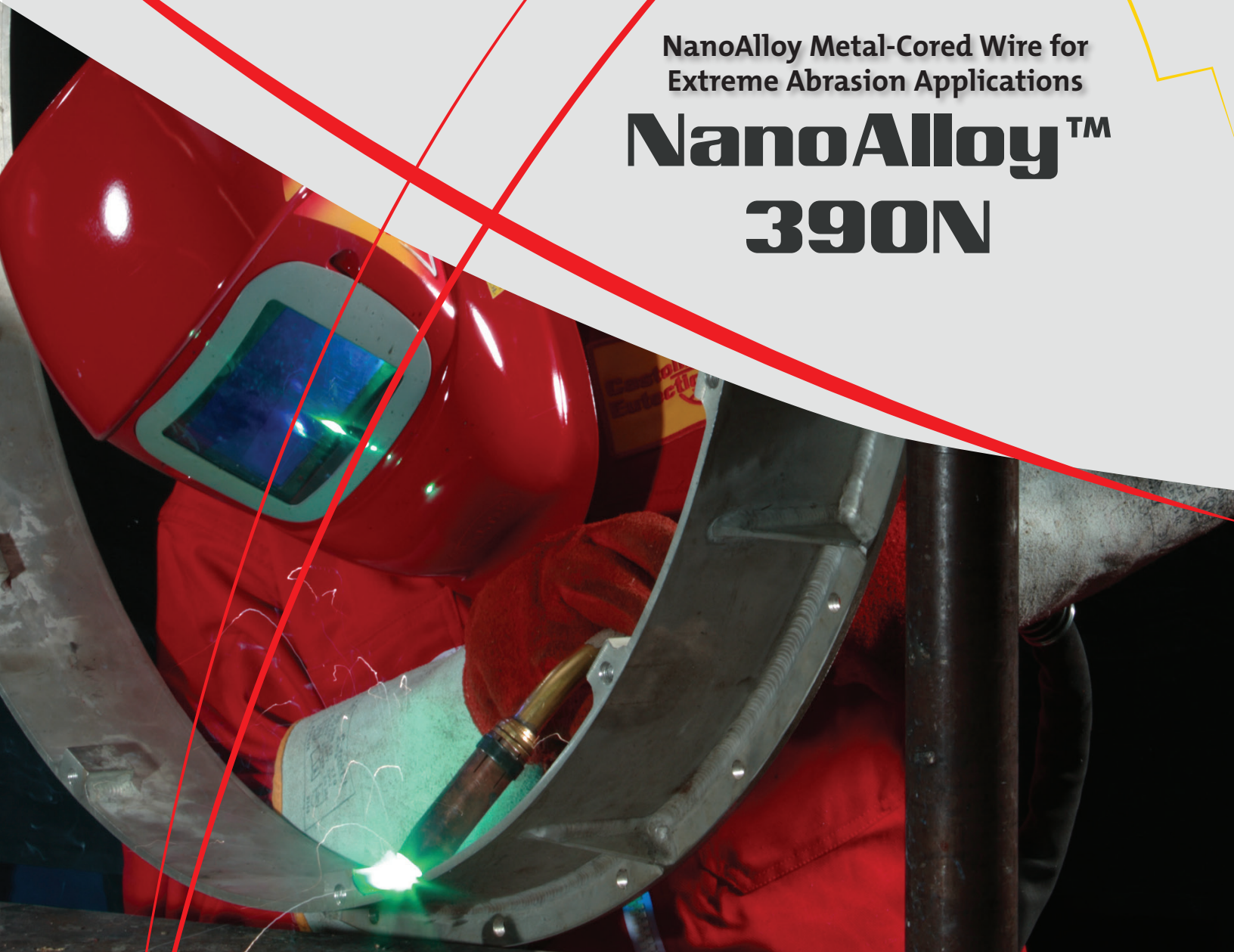




NanoAlloy Metal-Cored Wire for
Extreme Abrasion Applications

NanoAlloy™

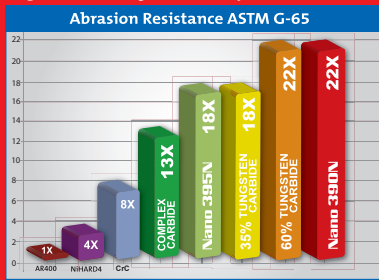
390N



- Highest abrasion resistance of all the NanoAlloys
- Unique NanoAlloy structure for ultra-fine particle abrasion
- Produces tough, uniform, 70 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 390N

NanoAlloy 390N leads the newest generation of hardfacing products based on the science and engineering of ultra-fine, nano-sized 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.



With about a third the density of tungsten carbide, the wear resistance of NanoAlloy 390N surpasses its nearest competition in total mass lost on abrasion resistance ASTM G65 tests. Combined with the advantages of finely dispersed, nano-size particles, this means the same deposit size of NanoAlloy 390N lasts longer than conventional Tungsten Carbide based alloys!

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 390N is not recommended for application beyond a 2 pass maximum. For steels with higher alloy content or which require build-up greater than 1/4" a 2-pass buffer layer of Endotec DO*68S is strongly recommended.

NANOALLOY 390N 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 workpiece and use a "pull" technique. For fully automated welding such as hardfacing cylindrical parts, the wire should exit at about a 10° lead-in angle from top dead center. Using this technique will assure a smooth and regular weld deposit profile with the optimum level of fusion. 390N can be used with or without shielding gas protection.

Note: For best results apply NanoAlloy 390N 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.

TECHNICAL DATA

Typical Values

Hardness:	69-72 HRC
Temperature limit:	1200°F (650°C)
Wear resistance (ASTM G65 Tests):	13 mm ³

Parameters

Coverage: 5.5 lbs on 1 ft ² @ 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	1/2" - 3/4"	3/4" - 1"	35-45
1/16" (1.6 mm)	24	220	275	1/2" - 3/4"	3/4" - 1"	45-60

TYPICAL APPLICATIONS

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

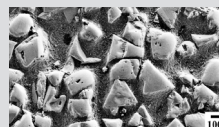
APPLICATIONS

Auger Screws
Press Screws
Mixer Paddles
Kiln Mixers
Furnace Chutes
Trencher Tool Holders
Exhaust Fans

INDUSTRIES

Mining
Chemical Processing
Waste/Recycling
Pulp and Paper
Iron and Steel Works
Trenching Operations
Foundry

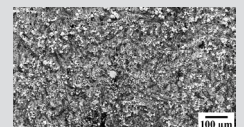
The unique NanoAlloy type microstructure ensures exceptional performance against wear by severe abrasion, erosion combined with moderate impact from ambient to elevated service temperatures.



Crushed Tungsten Carbide



Cast Tungsten Carbide



NanoAlloy 390N

