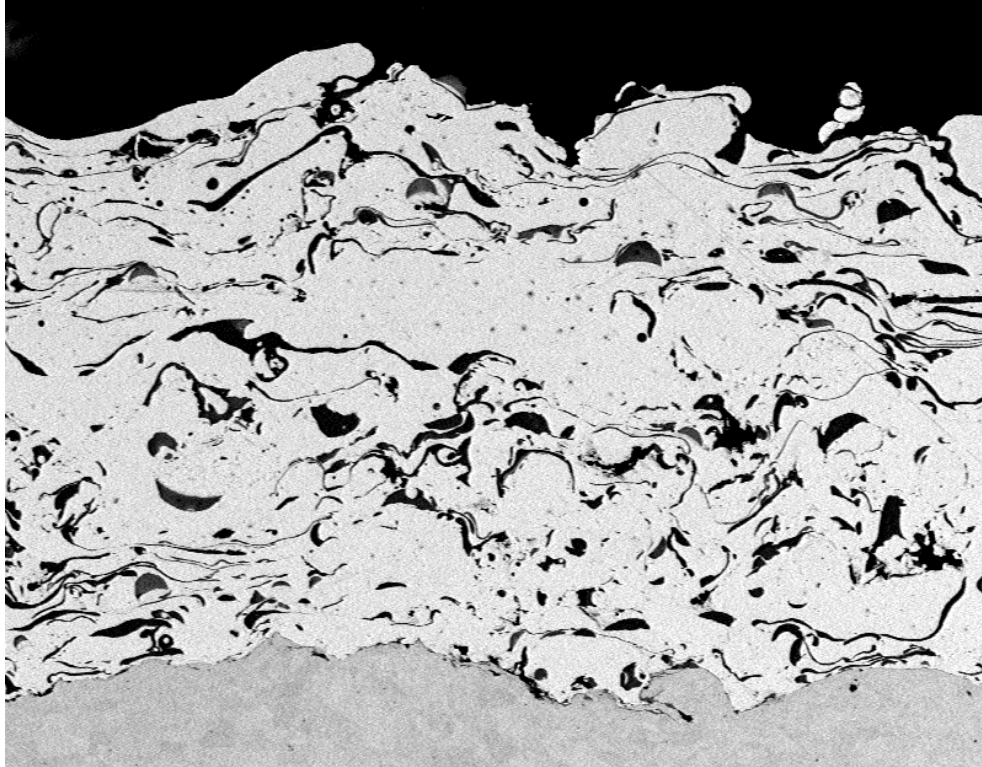


# Technical Data

## HAI ARC SPRAY NICKEL ALUMINUM BOND WIRE HA 775

Product Code: 22775  
 Technical Data Sheet

Revision: # 003  
 Dated: 10/4/12



**HAI 775 MICROGRAPH 500X**

### 1. INTRODUCTION

HA 775 is a nickel aluminum self-bonding wire designed specifically for the arc spray process. HA 775 has excellent bond strength and is resistant to high temperature abrasive and oxidative environments. HA 775 has very good resistance to impact and bend loading. HA 775 is widely used as a bond coat through the thermal spray industry.

HA 775 is designed to operate in all Arc Spray devices, such as HAI's ARCote 9140, 9140U, 9140UW, TAFE 8830/8835, 9000, 9935, and Sulzer Metco SmartArc arc spray systems.

### 2. CHEMICAL COMPOSITION

**Table 1:**

Element	Ni	Al	TAO*
Max Weight %	BAL	4.00	0.00
Min Weight %	95	5.00	2.00

\*Designates Total All Other impurities

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### 3. PHYSICAL PROPERTIES

#### 3.1. Wire Physical Properties

Wire Size(s) diameter	1/16", 0.078", 1/8"	1.6 mm, 2mm, 3.2mm
Spool Size	OD 12"x 4" wide"; Bore ID 2	Ø300x100 mm; Bore Ø50 mm
Spool Weight	25 lb. each	11.4 kg each
Length of Wire per lb. (1/16")	84ft	26m

#### 3.2. Coating Physical Properties

Micro Hardness R <sub>b</sub>	55-80	--
Porosity	<1%	--
Melting Point	2642° F	1450°C
Bond Strength	9746 psi @ 0.02" thick	67.2 MPa @ 0.5 mm thick
Deposit Efficiency	Approx. 70%	Approx. 70%

### 4. SPECIFICATIONS

PWA-36937, SNECMA DMR33-011, GARRETT FP5045, RR OMAT #3/229

### 5. USEFUL SPRAY DATA

Spray Rate	10 lbs./hour/100 amps	4.5 kg./hour/100 amps
Coverage	0.9 oz./ft. <sup>2</sup> /0.001"	1.10 kg/m <sup>2</sup> /100 microns
Coating Density	7.8 gm./cc	--
Coating Weight	0.038 lbs/ft <sup>2</sup> /mil	--

### 6. Spray Parameters

	Metallic Substrates	
Atomizing Air Pressure: Primary Air	50 - 60 PSI	
Atomizing Air Pressure: Secondary Air	40 - 50 PSI	
Arc Load Voltage	29 - 32 Volts	

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Ampere	100-300 Amps	
Standoff Distance	3 - 8 inch	
Transverse speed	250 inch/min	
Coating thickness/Pass-mills	5 mils	

## 7. APPLICATION

### 7.1. Service Environment

Special care is required to maintain a clean surface prior to arc spraying.

#### Overheating

Although the Arc spray process is considered a “Cool” process, please take special care not to overheat or burn the surface(s) of the part of component. HA 775 is a nickel aluminum based product and dust overspray can burn and smolder.

#### SPECIAL SAFETY INSTRUCTIONS

Nickel aluminum based alloys are highly sensitive to air and oxygen and as such special care is required to make sure the material does not burn or smolder in the dust collector or dust collection barrels.

Please consult your local Fire & Safety Official for instructions on how to handle nickel aluminum and nickel aluminum based dusts.