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Praxair and TAFA Arc Spray Tin Alloy Wire - 02C

Material Review:

Made exclusively for arc spraying, this tin alloy attains the advantages of the low melting temperatures of tin with the corrosion resistance of zinc.

Arc Spray 02C Tin-Zinc wire can be sprayed with any Praxair and TAFA Arc Spray gun.

CAUTION: All Praxair and TAFA wires have been optimized for arc spraying. Use of alternate wires usually cause problems such as excessive tip wear, spitting and feeding problems. We only recommend Praxair and TAFA certified wires.

Application Review:

With the alloy's properties of tin, the coatings are solderable. As with zinc, the coating has a degree of oxidation resistance. Used for capacitor end coatings and other related elements.

Composition:	
Tin	60 Percent
Zinc	40 Percent
Coating Physical Properties	
Wire Size	2 mm
Deposit Efficiency	80 Percent*
Melting Point	590°F (310°C)
Bond Strength	2950 psi (20.4 MPa) blasted surface
Coating Texture	Variable** (see next page)
Hardness	R_{15T} 0-6
Coating Density	6.5 gm/cc (92%)***
Coating Weight	0.34 lbs/ft^2/mil
Shrink	0.001 in/in (cm/cm)
Spraying:	
Spray Rate	34 lbs/hr/100 Amps = (15.4 kg/hr/100 amps)
Coverage (wire consumption)	0.9 oz/ft^2/0.001" (1.10 kg/m^2/100 microns)
Spray Pattern** (approximate 8" standoff)**	Cross Nozzle/Positioner - 1 1/4" (3.2 cm) vertical height x 2" (5 cm) width Slot Nozzle/Positioner - 2 1/4" (5.7 cm) vertical height x 1 1/4" (3.2 cm) width
Length of wire per lb	65 ft (2 mm)

* Depends on air pressure, standoff, nozzle cap and target size.

** 6" standoff, 40 psi - 8830, depends on air pressure - fine with high psi, average with medium psi, and rough with low psi.

*** Depends on atomizing air pressure

**** Higher air pressures, smaller wire (1/16), and lower amperage with red nozzle cap gives smallest diameter pattern.

Spraying Procedure:

These are starting parameters only. Optimum parameters will vary depending on application, utilities, environment, spray rate and equipment.

Coating Type						
	Standard 8830/35	ArcJet 8830/35	Standard 8850	ArcJet 8850	Standard 9000	ArcJet 9000
Atomizing Air Pressure: Primary Secondary	60[c] ---	50[c] 40	60-75[c] ---	60[c] 60	60-75[c] ---	60[c] 60
Nozzle Cap	Green	*	Green	Green	Green	Green
Nozzle/Positioner (Cross=†)	Long †	**	Long †	Long †	Long †	Long †
Arc Load Volts[a]	21-23	21-23	22-24	22-24	22-24	22-24
Amps[b]	50-300	50-300	50-300	50-300	50-300	50-300
Standoff Inches	3-10	3-10	3-10	3-10	3-10	3-10
Coating Thickness/Pass-mils	2-10	2-10	2-10	2-10	2-10	2-10
Coating Texture-microinches aa	150-250	100-200	150-250	100-200	150-250	100-200

Using excessive voltage reduces quality of coating. Voltage should be adjusted to give minimum noise and smooth arc operation. Excessive voltage causes larger particles and poor spray pattern. Too low a voltage will cause popping.

Be sure not to overheat substrate even if this means stopping to allow cooling, use air jet cooling if greater speed is required. Note that on some applications where preheating is tolerable, preheating work to 300°F can improve bond and deposit efficiency.

<u>NOTE:</u> Standard air caps and positioners can be used in 8830, 8850 or 9000 systems.

*	P/N 450729	8830/8835 Arc Jet Air Cap
**	P/N 620074	Arc Jet Modified Short Cross (8830 & 8835)

*Diameter of wire

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[a] When using power lead extensions other than the normal 12 foot furnished, the voltage must be increased by approximately 3.4 volts per 50 foot extension; i.e. add 3.4 volts to the recommended voltage setting for a given wire if the extension is increased to a 50 foot length.

[b] Can vary between 50-300 depending on size of workpiece and traverse speed.

[c] For finer finish, raise air pressure at point of finish.

Finishing:

Most coatings are used as sprayed.

Precaution:

Zinc fumes are toxic. While spraying, all personnel should be made aware of the need for complete respiratory protection.

Hazards:

Observe normal spraying practices, respiratory protection and proper air flow patterns advised. For general spray practices, see AWS Publications AWS C2.1-73, "Recommended Safe Practices for Thermal Spraying" and AWS TSS-85, "Thermal Spraying, Practice, Theory and Application". Thermal spraying is a completely safe process when performed in accordance with proper safety measures. Become familiar with local safety regulations before starting spray operations. DO NOT operate your spraying equipment or use the spray material supplied before you have thoroughly read the Praxair and TAFA Instruction Manual.

A Material Safety Data Sheet will be sent with each initial purchase and updated as required.

DISREGARDING THESE INSTRUCTIONS MAY BE DANGEROUS TO YOUR HEALTH.

The Information provided herein is believed to be accurate and reliable; however, results may vary with workpiece preparation and operator technique. Praxair and TAFA warrants only that the wires are free of defects in material and workmanship. No other warranty is expressed or implied.

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