Financial Services
7 North Dixie Highway
Lake Worth, FL 33460
561.586.1654

Addendum No. 1
IFB 17-101

DECORATIVE STREET LIGHT POLE PAINTING PROJECT

Each recipient of this Addendum No. 1 to the Invitation for Bid (IFB) who responds to the IFB acknowledges all of the provisions set forth in the IFB and agrees to be bound by the terms thereof. This addendum shall modify, clarify, change or add information and clarification and become part of the above referenced IFB.

CLARIFICATION:

1. Will the City of Lake Worth provide Specifications for paint material and coating system?
   A: Yes, Products are to be manufactured by Carboline. Base coat shall be Carbomastic 615 AL and the finish coat shall be Carboxane 2000. Please see the attached product specifications.

Please check our City website regularly for any updates to the solicitation requirements.

Proposers must acknowledge receipt of this Addendum No. 1 in the space provided below. This Addendum forms an integral part of the IFB documents and therefore must be executed and submitted with you proposal.

Issued By: Financial Services
November 8, 2016

Signed By: Hirut Darge
Hirut Darge, Purchasing Agent

PROPOSER/Company

Name: _____

Signed By: _____ Print Name: _____

Title: _____ Date: _____

PROJECT:	City of Lake Worth			
ITEM TO COAT:	Light Poles			
SUBSTRATE:	Ferrous & Non-ferrous Metals			
EXPOSURE CONDITIONS:	Exterior - UV Exposure - Seacoast Environment			
SURFACE PREPARATION:	General - Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating with Surface Cleaner 3 (refer to Surface Cleaner 3 instructions) in accordance with SSPC-SP 1. Spot prepare bare metal areas in accordance with SSPC-SP3 Power Tool Cleaning to remove all loose rust, scale, and loose coatings, taking care not to polish the surface and leaving an anchor profile of 1.0 mils. Surfaces must be clean and dry and free of all soluble contaminants. Remaining coatings shall be tightly adherant and all edges of remaining coatings shall be feathered to provide a smooth transition between existing and newly applied coatings.			
COATING	**DFT (mils)**	**GENERIC DESCRIPTION**	**PRODUCT**	**RECOMMENDED USES**
PRIMER (Spot Only for bare metal areas)	3.0-5.0	An aluminum-filled, phenalk-amine epoxy mastic that exhibits outstanding moisture and surface tolerance during application, low temperature cure capability, and very fast cure response for quick return to service.	Carbomastic 615	Used as a high performance, aluminum-filled epoxy with excellent resistance to fresh and salt water exposures. It also contains inert flake reinforcement (micaceous iron oxide) to enhance film strength and performance.
INTERMEDIATE COAT	4.0-6.0	An aluminum-filled, phenalk-amine epoxy mastic that exhibits outstanding moisture and surface tolerance during application, low temperature cure capability, and very fast cure response for quick return to service.	Carbomastic 615	Used as a high performance, aluminum-filled epoxy with excellent resistance to fresh and salt water exposures. It also contains inert flake reinforcement (micaceous iron oxide) to enhance film strength and performance.
FINISH COAT	4.0-7.0	A premium ultra-durable coating that provides outstanding color and gloss retention properties in exterior atmospheric exposures.	Carboxane 2000 (Color #L386 - Custom Color Match)	Combines the chemical resistant properties of epoxies with the weathering characteristics of acrylic-polyurethanes. This tightly cross-linked film results in a finish with outstanding barrier properties and weathering performance that far exceeds polyurethanes.

product data carboline®

Carbomastic® 615 AL

Selection & Specification Data

Generic Type Aluminum-Filled Phenalkamine Epoxy Mastic

Description High performance, aluminum-filled epoxy that has excellent resistance to fresh and salt water exposures. This coating exhibits outstanding moisture and surface tolerance during application, low temperature cure capability, and very fast cure response for quick return to service. This aluminum-pigmented epoxy also contains inert flake reinforcement (micaceous iron oxide) to enhance film strength and performance.

Features

- Unique formulation with aluminum flakes provides exceptional barrier protection
- High solids, low VOC
- Low temperature cure
- Excellent wetting properties
- Excellent surface tolerance
- Excellent moisture tolerance during application
- Fast cure response
- Suitable for immersion service in fresh or salt water after 60 minute cure @75°F

Color Aluminum (C901)

Gloss Semi-Gloss

Primer Self-priming

Topcoat Acrylics, Alkyds, Epoxies, Polyurethanes

Dry Film Thickness 5.0 - 10.0 mils (127 - 254 microns) per coat

Solids Content By Volume 80% +/- 2%

HAPs Values As supplied: 1.63 lbs/solid gal

Theoretical Coverage Rate
1283 ft^2 at 1.0 mils (31.5 m^2/l at 25 microns)
257 ft^2 at 5.0 mils (6.3 m^2/l at 125 microns)
128 ft^2 at 10.0 mils (3.1 m^2/l at 250 microns)

Allow for loss in mixing and application.

VOC Values Thinner 2 16 oz/gal: 2.07 lbs/gal (248 g/l)
As Supplied 172 g/l

Dry Temp. Resistance Continuous: 200 °F (93 °C)
Non-Continuous: 250 °F (121 °C)

Limitations Epoxies lose gloss, discolor and eventually chalk in sunlight exposure.

Wet Temp. Resistance Immersion temperature resistance depends upon exposure. Consult Carboline Technical Service for specific information.

Substrates & Surface Preparation

General Remove any oil or grease from surface to be coated with clean rags soaked in Carboline Thinner #2, or toluol.

Steel Immersion: SSPC-SP10 with a 2.0-3.0 mil (50-75 micron) surface profile
Non-Immersion: SSPC-SP6 with a 2.0-3.0 mil (50-75 micron) surface profile for maximum protection. SSPC-SP2, SP3, SP7, or SP12 are also acceptable methods.

Substrates & Surface Preparation

Concrete The concrete must be cured for 28 days (at 75°F/50% R.H.) or until the concrete reaches its designated compressive strength. Prepare and clean the surface in accordance with SSPC-SP13/NACE No. 6 guidelines. Test for moisture by conducting a plastic sheet test in accordance with ASTM D4263.

Immersion Service SSPC-SP10 with a 2.0-3.0 mil (50-75 micron) surface profile.

Mixing & Thinning

Mixing Mix separately, then combine and mix in the following proportions:
1 Gallon Kit = Part A: 0.8 Gallon; Part B: 0.2 Gallons
5 Gallon Kit = Part A: 4 Gallons; Part B: 1 Gallon

Thinning Thin up to 12% by volume with Carboline Thinner #2.

Ratio 4:1 (Part A to Part B)

Pot Life 1½ hours at 75°F (24°C) and less at higher temperatures. Pot life ends when coating becomes too viscous to use

Application Equipment Guidelines

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

General Listed below are the general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Spray Application (General) Hold gun 12-14 inches from the surface and at a right angle to the surface.

Conventional Spray Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, 0.070" I.D. fluid tip and appropriate air cap.

Airless Spray Pump Ratio: 30:1 (min.)
Volume Output: 9.5 l/min min. (2.5gpm min.)
Material Hose: 9.5mm min. (3/8" I.D. min.)
Tip Size: 0.43-0.53mm (0.017-0.021")
Output Pressure: 140-175kg/cm² (2000-2500 psi)
Use a 1/2" minimum I.D. material hose
*PTFE packings are recommended and available from pump manufacturer.

Brush & Roller (General) Not recommended for tank lining applications except when striping welds. For non-immersion applications over damp surfaces, brush and roller is the preferred method. Multiple coats may be required to obtain desired appearance, recommended dry film thickness and adequate hiding. Avoid excessive re-brushing or re-rolling. For best results, tie-in within 10 minutes at 75°F (24°C). Thin up to 11% by volume per gallon with Carboline Thinner #2. Use a short-nap synthetic roller cover with solvent resistant core.

Carbomastic® 615 AL

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Minimum	45 °F (7 °C)	20 °F (-7 °C)	20 °F (-7 °C)	0%
Maximum	90 °F (32 °C)	120 °F (49 °C)	100 °F (38 °C)	95%

Industry standards are for substrate temperatures to be above the dew point. For immersion conditions it is recommended to follow this procedure. For non-immersion conditions Carbomastic 615 AL can tolerate damp substrates. See Brush or Roller above. Special thinning and application techniques may be required above or below normal conditions. Do not apply to substrates with ice or ice crystal formation. Dehumidify or raise the temperature to eliminate ice on the substrate.

Curing Schedule

Surface Temp.*	Dry to Topcoat Minimum	Maximum Recoat Time	Minimum cure for immersion service
20 °F (-7 °C)	72 Hours	45 Days	7 Days
35 °F (2 °C)	17 Hours	30 Days	2 Days
60 °F (16 °C)	8 Hours	15 Days	3 Hours
75 °F (24 °C)	2 Hours	7 Days	1 Hours
90 °F (32 °C)	90.0 Minutes	3 Days	1 Hours

These times above are based on a 5.0-10.0 mil (125-250 micron) dry film thickness per coat. Higher film thickness, insufficient ventilation or cooler temperatures will require longer cure times and could result in solvent entrapment and premature failure. Excessive humidity or condensation on the surface during curing can interfere with the cure, can cause discoloration and may result in a surface haze. Any haze or blush must be removed by water washing before recoating. If the maximum recoat times have been exceeded, the surface must be abraded by sweep blasting or sanding prior to the application of additional coats. For force curing, contact Carboline Technical Service for specific requirements.

Cleanup & Safety

Cleanup Use Thinner #2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

Safety Read and follow all caution statements on this product data sheet and on the MSDS for this product. Employ normal workmanlike safety precautions.

Ventilation When used as a tank lining or in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure of if not able to monitor levels, use MSHA/NIOSH approved supplied air respirator.

Caution This product contains flammable solvents. Keep away from sparks and open flames.

Packaging, Handling & Storage

Shelf Life Part A: 12 months at 76°F (24°C)
Part B: 24 months at 76°F (24°C)
Actual stated shelf life when kept at recommended storage conditions and in original unopened containers.

Shipping Weight (Approximate) 1 Gallon Kit: 15.8 lbs (7.2 kg)
5 Gallon Kit: 79 lbs (35.8 kg)

Storage Temperature & Humidity 40-100°F (4°C-38°C)
0-95% Relative Humidity

Packaging, Handling & Storage

Flash Point (Setaflash) Part A: 110°F (43°C)
Part B: 90°F (32°C)
Mixed: 103°F (39°C)
Thinner #2: 23°F (-5°C)

Storage Store Indoors. KEEP DRY

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May 2016

1071

product data carboline®

Carboxane® 2000

Selection & Specification Data

Generic Type Modified Siloxane Hybrid

Description Carboxane 2000 is a premium, ultra-durable coating that provides outstanding gloss and color retention for exterior exposures. When used over a suitable primer (as a two coat system) Carboxane 2000 provides the barrier properties normally seen using a three-coat system (primer, epoxy intermediate with an acrylic-polyurethane finish) for most environments. This tightly cross-linked film utilizes a UV-resistant siloxane binder resulting in a finish with outstanding barrier properties and weathering performance that far exceeds polyurethanes.

Features
- Exceptional weatherability
- Long life performance
- Outstanding gloss/color retention
- VOC compliant
- Excellent abrasion resistance
- Isocyanate free
- Flexible Film

Color Refer to Carboline Color Guide

Finish Gloss

Primer Compatible with inorganic and organic zinc rich primers, epoxies and others as recommended by Carboline Technical Service

Dry Film Thickness 3.0 - 7.0 mils (76 - 178 microns) per coat

As the finish of a two coat system (over a primer) a minimum of 5 mils (125 microns) is recommended. As the finish of a three coat system (primer and intermediate coat), a minimum of 3 mils (75 microns) is recommended. See Severe Exposures below.

Solids Content By Volume 75% +/- 2%

Surface Burning Characteristics Flame Spread Index: 0
Smoke Developed Index: 10

Theoretical Coverage Rate
1203 ft^2 at 1.0 mils (29.5 m^2/l at 25 microns)
401 ft^2 at 3.0 mils (9.8 m^2/l at 75 microns)
172 ft^2 at 7.0 mils (4.2 m^2/l at 175 microns)

Allow for loss in mixing and application.

Severe Exposures For severe marine environments (offshore structures) a three coat system is recommended. For other severe exposures, a two coat system may be used provided the minimum film thickness of 5 mils (125 microns) is achieved.

VOC Values Thinner 10 13 oz/gal: 2.29 lbs/gal (275 g/l)
As Supplied 1.8 lbs/gal (216 g/l) mixed

These are nominal values and may vary with color

Dry Temp. Resistance Continuous: 200 °F (93 °C)
Non-Continuous: 250 °F (121 °C)

Substrates & Surface Preparation

General Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating. Refer to specific primer's Product Data Sheet for detailed requirements of the specified primer

Steel SSPC-SP6 with a 1.5-2.5 mil (37.5-62.5 micron) surface profile for maximum protection. SSPC-SP2 or SP3 as minimum requirement. Prime with recommended primer.

Galvanized Steel SSPC-SP1 and prime with specific Carboline primers as recommended by your Carboline sales representative.

Performance Data

Test Method	System	Results
Adhesion: ASTM D4541	859/2000	1362 psi
EMMAQUA Weathering	2000	Exposure 12 mos. Gloss Retention 90% Exposure 24 mos. Gloss Retention 73% Exposure 32 mos. Gloss Retention 61%
Flexibility: Conical Mandrel	2000	>3/8 inch
Pencil Hardness	2000	F
QUV-A Weathering	2000	Exposure 4000 hours Gloss Retention 99% Exposure 8000 hours 80% gloss retention Exposure 12000 hours Gloss Retention 53%
South Florida Weathering	2000	Exposure 4 years Gloss Retention 90% dE: 0.45 color change
Wet Adhesion: "X-Cut", Knife Adhesion	859/2000	No failure after 7 days

Mixing & Thinning

Mixing Power mix Part A separately. Part B requires no mixing. Then combine power mix. DO NOT MIX PARTIAL KITS.

Thinning Not normally required. May be thinned up to 10% (13 oz/gal) with Thinner #10 for spray, and Thinner 214, 215, or 238 for brush and roll.

Ratio Part A: 2.2:1
Part B: by volume.

Pot Life 8 hours at 75°F (23°C) and less at higher temperatures. Material is moisture sensitive. If left uncovered for extended periods or under very high humidity conditions, check for and remove any skinning that may occur.

Carboxane® 2000

Application Equipment Guidelines

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Spray Application (General) This is a high solids coating and may require adjustments in spray techniques. Wet film thickness is easily and quickly achieved. The following spray equipment has been found suitable and is available from manufacturers.

Airless Spray Pump Ratio: 30:1 (min.)
Volume Output: 2.5 gpm min. (11.5 l/min min.)
Material Hose: ½" I.D. min. (12.5mm min.)
Tip Size: 0.017-0.021" (0.43-0.53mm)
Output Pressure: 1500-2000 psi (105-140kg/cm²)

Brush & Roller (General) Multiple coats may be required to obtain desired appearance, recommended dry film thickness and adequate hiding. Avoid excessive re-brushing or re-rolling.

Brush Use a medium natural bristle brush.

Roller Use a short to medium-nap mohair roller cover with solvent resistant core.

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Minimum	50 °F (10 °C)	35 °F (2 °C)	35 °F (2 °C)	20%
Maximum	90 °F (32 °C)	110 °F (43 °C)	110 °F (43 °C)	90%

Industry standards are for substrate temperatures to be 5°F (3°C) above the dew point. Protect from high humidity, dew and direct moisture contact until fully cured. Application and/or curing in humidities above maximum, or exposure to moisture from rain or dew may result in a loss of gloss and/or staining of the product.

Curing Schedule

Surface Temp.*	Dry to Recoat	Dry to Touch	Hard Cure
35 °F (2 °C)	24 Hours	8 Hours	30 Hours
60 °F (16 °C)	12 Hours	3 Hours	24 Hours
75 °F (24 °C)	6 Hours	2 Hours	18 Hours

These times are based on recommended coverage rates. Curing under low humidity conditions will extend times. Maximum recoat for this product is 30 days. After this period, it is best to degloss the surface by abrasive blasting or sanding prior to recoating.
Note: Like many coatings, this coating will develop full adhesion over the initial weeks following application.
*Hard Cure = Fingernail hard

Cleanup & Safety

Cleanup Use Thinner #2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

Safety Read and follow all caution statements on this product data sheet and on the MSDS for this product. Employ normal workmanlike safety precautions.

Ventilation When used in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved supplied air respirator.

Packaging, Handling & Storage

Shelf Life Part A: 24 months at 76°F (24°C)
Part B: 24 months at 76°F (24°C)

*Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.

Shipping Weight (Approximate) 1 Gallon Kit - 13 lbs (6 kg)
5 Gallon Kit - 67 lbs (30 kg)

Storage Temperature & Humidity 40 -110°F (4°C-43°C)
0-90% Relative Humidity

Flash Point (Setaflash) Part A: 96°F (36°C)
Part B: 75°F (24°C)
Thinner 10: 83°F (28°C)
Thinner 214: 102°F (38°C)
Thinner 215: 128°F (53°C)
Thinner 238: 102°F (38°C)
Thinner 2: 23°F (-5°C)

Storage Store Indoors. KEEP DRY.

This product is solvent based and not affected by excursions below these published storage temperatures, down to 10°F, for a duration of no more than 14 days. Always inspect the product prior to use to make sure it is smooth and homogeneous when properly mixed.

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February 2016

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