Specification E-1706

# CITY OF AUSTIN ELECTRIC UTILITY DEPARTMENT

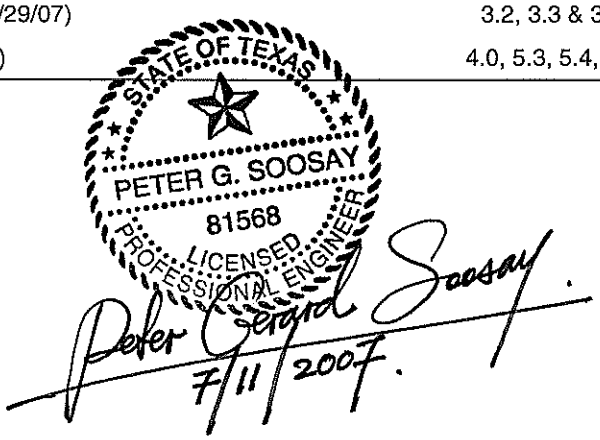
# PURCHASE SPECIFICATION

# FOR

# CONDUCTIVE POLYURETHANE FOAM BACKFILL

| DATE | PREPARED BY | ISSUANCE/REVISION | APPROVAL PROCESS SUPV. / MATERIALS SUPV. |
|---|---|---|---|
| 3/5/2007 | Peter G. Soosay | ISSUANCE | |
| 3/29/07 | Peter G. Soosay | Revision | |
| 7/11/07 | Peter G. Soosay | Revision | |

| *REASON FOR REVISION* | *AFFECTED PARAGRAPHS* |
|---|---|
| Added new sections (3/29/07) | 3.2, 3.3 & 3.4 |
| Deleted (7/11/07) | 4.0, 5.3, 5.4, 5.5 |




This specification, until rescinded, shall apply to each future purchase and contract for the commodity described herein.
Retain for future reference.

# CITY OF AUSTIN ELECTRIC UTILITY DEPARTMENT

# PURCHASE SPECIFICATION

# FOR

# CONDUCTIVE POLYURETHANE FOAM BACKFILL

## 1.0 SCOPE AND CLASSIFICATION

### 1.1 SCOPE

1.1.1 The City of Austin (COA) Electric Utility Department is hereinafter referred to as Austin Energy (AE). Austin Energy requires a qualified Manufacturer to provide conductive polyurethane foam backfill.

1.1.2 The conductive polyurethane foam backfill, will be used for improving the grounding for wood poles, with a ground wire and butt wrap, as well as steel direct embedded poles, located in high resistivity soil areas.

## 2.0 APPLICABLE SPECIFICATIONS

2.1 The conductive polyurethane foam backfill, provided by the Manufacturer, shall be in compliance with the latest Industry and ASTM standards, including:

2.1.1 ASTM D732 – 02 – Standard Test Method for Shear Strength of Plastics by Punch Tool

2.1.2 ASTM D1621 – 04a – Standard Test Method for Compressive Properties of Rigid Cellular Plastics

2.1.3 ASTM D1622 - 03 – Standard Test Method for Apparent Density of Rigid Cellular Plastics

2.1.4 ASTM D1623 – 03 – Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics

2.1.5 TXDOT 129-E – Measuring the Resistivity of Soil Materials

## 3.0 MANUFACTURER REQUIREMENTS

3.1 The conductive polyurethane foam backfill, shall have the following characteristics:

3.1.1 Easy to mix in the field, using a cordless power drill.

3.1.2 Able to retain the inherent chemical composition, at an ambient temperature of 70° F.

3.1.3 Retain its compressive strength (§ 3.1.5), in the presence of moisture. Standing water present in the hole dug for a pole, will be pumped out by the

Austin Energy Construction Crew. The existing moisture in the hole, shall not reduce the compressive strength of the conductive polyurethane foam.

3.1.4 Retain a minimum density of eight (8) pcf.

3.1.5 Retain a minimum compressive strength of 75 psi.

3.1.6 Retain a minimum yield of three (3) cubic ft, for a five (5) gallon kit, in the absence of any water.

3.1.7 Conductivity (Siemens/meter) per TXDOT 129E – 1.0 to 2.0

3.1.8 Resistivity (Ohm-meter) per TXDOT 129E – 0.5 to 1.0

3.2 The Manufacturer's data shall be stamped on the backfill container and shall not be more than 120 days old, from the date of manufacture, to the day the material is delivered to Austin Energy.

3.3 All kits shall have the unit of measure, expressed in cubic ft.

3.4 Each kit shall come with a mixing container, for stirring the chemical components in the field.

## 4.0 BID REQUIREMENTS

4.1 The Bidder shall provide with the bid, a list of at least five (5) references (Contact Name, Contact Telephone Number, Company Name and Address), who currently use their conductive polyurethane foam backfill.

4.2 The Bidder shall provide with the bid, an Independent Test Laboratory certified test report, for their conductive polyurethane foam backfill. This certified test report, shall include the following information:

4.2.1 Density (pcf)

4.2.2 Compressive Strength (psi)

4.2.3 Yield (cubic ft.)

4.2.4 Conductivity (S/m)

4.2.5 Resistivity (ohm-m)