RESEARCH NEEDS FOR HIGH DENSITY POLYETHYLENE (HDPE) PIPE FOR MUNICIPAL APPLICATIONS

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PRESENTATION OUTLINE

• Introduction
• Background
• Statement of Needs
• Objectives
• Methodology
• Database
• References
INTRODUCTION

• High Density Polyethylene
  – Thermoplastic Material
  – Excellent Performance due to Material Properties
  – Density of 0.935 to 0.941 g/cc (+ 0.009-0.011 g/cc, with addition of carbon black)
  – PE 4710 and PE 3408
  – Diameters ½” to 63”

• Municipal Applications
  – Potable Water Transmission, Distribution and Service
  – Wastewater Services
  – Trenchless Applications – HDD, PB, Sliplining

• Pressure Class
  – PE 3408,
  – for DR of 32.5 to 7.3 (51 psig to 254 psig) respectively
BACKGROUND

- Comprehensive use of PE in Gas Pipe Application
- 50-year Design Life for Use in Municipal Water Applications
- Other Materials Used - PVC, DI, Concrete, Clay
- North American Municipal Pipe Material Market
STATEMENT OF NEEDS

- 2008 – Total Output Same as 2007 ([Wood, 2009](#))
- 2009 – Expected to Increase by 15% ([Wood, 2009](#))
- More Water Supply Project Expected
- Research Required
  - Confirm and Validate Perceived Benefits
  - Resolve Issues and Concerns
  - Investigate Limitations
  - Educate Designers about HDPE
OBJECTIVES

• To List Available Literature on HDPE for Municipal Applications
• To Create a Database of HDPE Literature
• To Categorize Literature:
  – Document Type,
  – Properties,
  – Processes, and
  – Others
• Identify Future Research Needs
METHODOLOGY

- Collection of Literature List from Library Resources Such as:
  - Engineering Village,
  - ASCE Database,
  - AWWA,
  - AWWA-RF Database,
  - Science Direct, etc.
  - PPI Resources
  - Conference Proceedings
  - No-Dig Conferences
  - UCT Conferences
  - International Plastic Pipe Conference
  - Creation of a Database
  - Study of Available Literature


REFERENCES


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