



Polyethylene Pipe and Fitting Manufacturers



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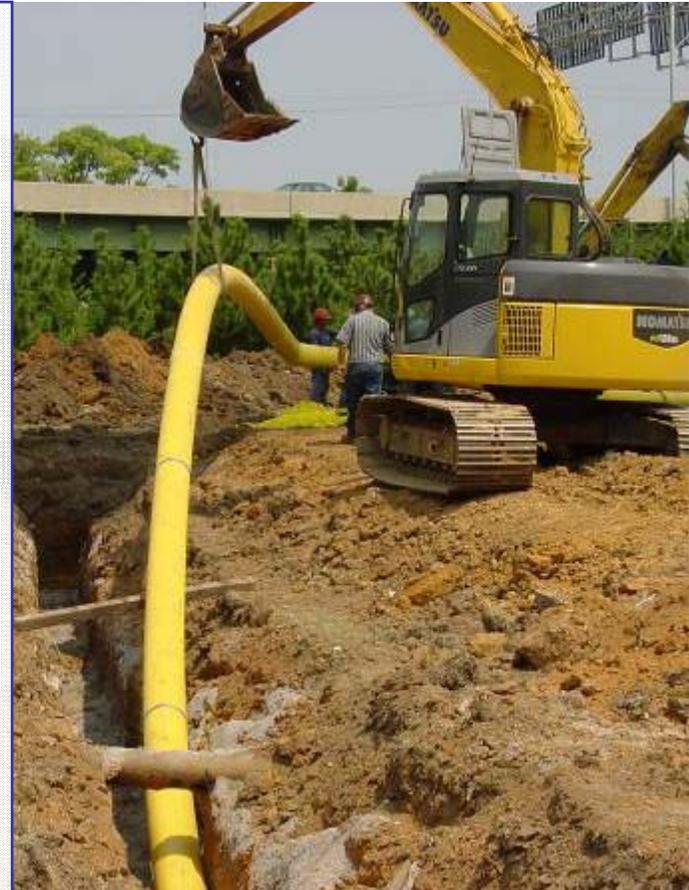
Polyethylene Pipe and Fitting Manufacturers

- Polyethylene Material Improvements
- Marking and Traceability



Polyethylene Pipe and Fitting Material Performance

- PE initially used for corrosion resistance, flexibility, & toughness
- Identified importance of resistance to slow crack growth (SCG) to long term pipe performance
- SCG as the leading material related cause
- Advances in PE materials developments
- Current pipe materials in Gas projected to essentially eliminate SCG failures





Polyethylene Pipe and Fitting Slow Crack Growth Resistance



- 1960s – First installations
- 1970s – Added ESCR categories for PE23 and PE33 pipes.
- 1970s – Increased ESCR for PE24 and PE34 pipes.
- 1980s – Develop PENT & set a requirement for >30hrs
- 1990s – Increased PENT requirement to >100hrs
- 2008 – Most gas pipe resins PENT >500hrs



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Marking

Pipe

- ASTM revised in mid 1990s to require permanent marking on PE gas pipe. Fully implemented. Complicated. Not fully used.
- Varying utility marking requirements increases capital costs for duplicate equipment and duplicate inventories. Increased lead times.

Fittings

- No current requirement for permanent marking
- Significant cost to permanently marking fittings (mold modification). Time frame to convert could take 2-3 years, but can be done.
- Simplify, Coordinate requirements between utilities. Coordinate with requirements for use.



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