

PolarPipe® White-Shell Polyethylene Pipe



PolarPipe® White-Shell polyethylene (PE) pipe (US Patent Pending) is produced with a white shell that is simultaneously co-extruded with the core PE pipe. PolarPipe® PE pipe is designed for above-ground applications, where piping is subject to demanding fluctuations in temperature.

PolarPipe® PE pipe is intended to serve these markets: mining, tailings & slurries, oil & gas producing applications and other above-ground industrial applications. The white shell minimizes solar radiation absorption, providing some key benefits.

Benefits of PolarPipe® PE Pipe

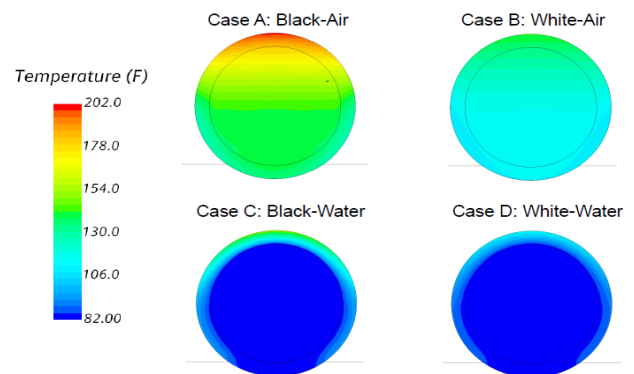
- Lower pipe surface temperature for a reduced effect on pressure capability
- Reduced thermal expansion and contraction
- Reduced abrasion due to less ‘snaking’

The following table shows results from a study done by a third-party laboratory, comparing solar absorptivity and emissivity of standard black PE pipe to PolarPipe® PE pipe. Solar absorptivity (α_s) measures how much solar radiation is absorbed by a material and emissivity (ϵ) measures how effective a material emits radiation.

The ratio of these two properties has engineering significance, whereby a smaller value indicates improved heat rejection which in turn translates to lower pipe surface temperature.

| | Solar Absorptivity, α_s | Solar Emissivity, ϵ | α_s/ϵ |
|--------------------|--------------------------------|------------------------------|---------------------|
| Black PE Pipe | 0.95 | 0.91 | 1.04 |
| PolarPipe® PE Pipe | 0.35 | 0.91 | 0.38 |

Using the above properties, thermal modeling was performed with the results shown by the image below. Assumptions include above-ground pipes in Charlotte, NC at solar noon. Maximum temperatures were evaluated for empty pipe as well as pipe flowing 82°F water.



PolarPipe® PE pipe provides an innovative solution for above-ground piping applications subject to extended periods of sunlight exposure.

For more information please contact:

General Information

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