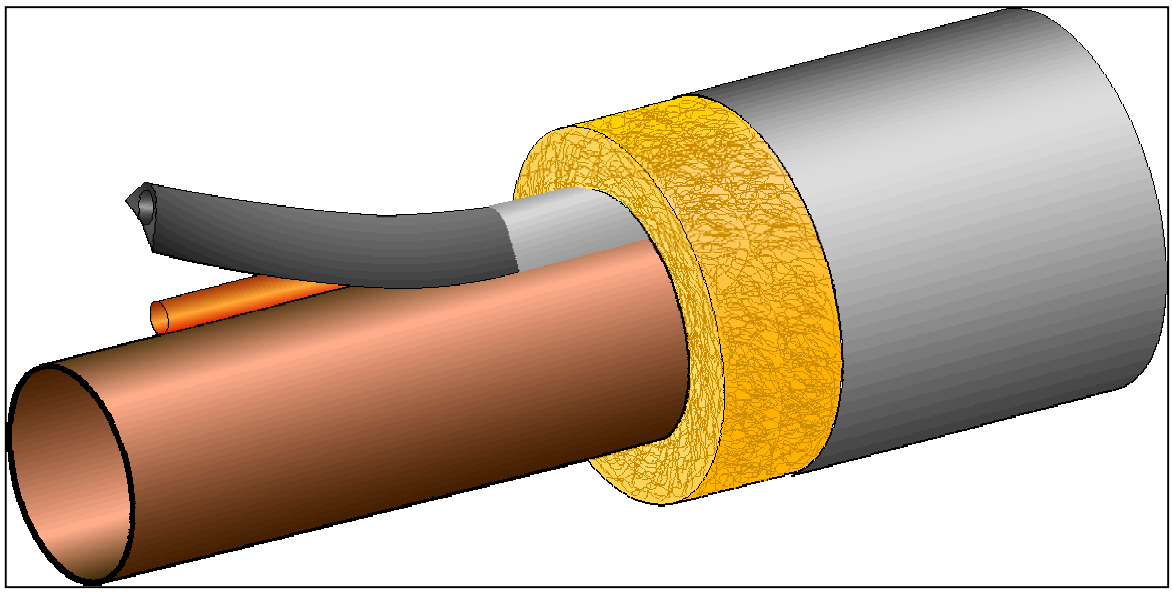
THERMO Tips

SnapTrace® Jackets Keep Asphalt Flowing



THERMON The Heat Tracing Specialists®

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SnapTrace Jackets Keep Asphalt Flowing

Asphalt is the final product of the refining process of crude oil. It is basically crude oil with the lighter constituents removed and is used for paving, roofing, coatings, sealers, adhesives, ink additives and fillers. About 100 American refineries produce raw asphalt. The softening point and penetration are the most commonly used measurements for classifying asphalt properties.

Softening Point: Measured by a ring and ball set. This test method covers the determination of the softening point of asphalt (bitumen) in the range from 30°C to 157°C (86 to 315°F) using the ring-and-ball apparatus immersed in distilled water (30°C to 80°C), USP glycerin (above 80 to 157°C), or ethylene glycol (30 to 110°C). ASTM D-36.

Penetration Grading: Measured by a penetrometer. Based on the depth a standard needle will penetrate an asphalt sample when placed under a 100 g load for 5 seconds. It is performed when the asphalt is @ 25°C (77°F) or at another prescribed temperature. Penetration grades are listed as a range of penetration units (one penetration unit = 0.1 mm of penetration by the standard needle). Typical asphalt binders used in the U.S. are 65-70 (penetration) and 85-100 (penetration). ASTM D-5.

Asphalts have viscosities that vary widely with type and temperature but generally must be held in the temperature range of 150°C to 205°C (300°F to 400°F) for pumping.

SnapTrace Jackets on Asphalt Lines

The use of ½-inch O.D. tubing with strap-on conduction tracing jackets were installed at a refinery in Oklahoma having 4300 feet of 4-inch and 6-inch lines carrying 85 to 100 penetration asphalt and a variety of cutbacks. The system used 150-psig-steam, a +10°F design ambient temperature and 2" thick calcium silicate insulation. Each pipe had a single ½" SnapTrace Jacket installed and the system functioned as designed even though winter weather dropped below the design ambient temperature. The 4-inch and 6-inch lines have maintained an average temperature of approximately 319°F and 304°F respectively.

SnapTrace Jackets can provide the same heat transfer rates to the heated pipe as clamp-on (bolt on) pipe heaters and at a lower cost; they can also save 50% to 90% over the installed cost of concentric steam jackets depending upon the complexity of the piping system. SnapTrace Jackets have been widely used on lines carrying sulfur, asphalt, phthalic anhydride, benzoic acid and other high temperature materials.

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