

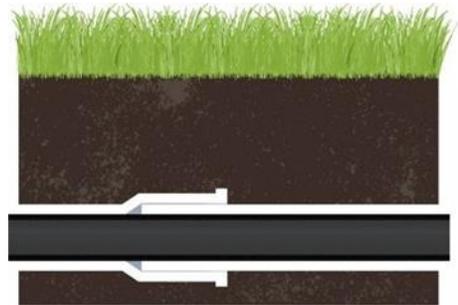
TECHNICAL BULLETIN

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Elastomeric and Polyethylene/Polyolefin Insulation Direct Burial

When an application requires insulated pipe to be buried, contractors should take precautions for a successful installation on an underground project. We recommend encasing ArmaFlex[®], Tubolit[®], Imcoa[®], and Tundra[®] insulation in a protective conduit such as properly sealed PVC pipe, corrugated drainpipe, or poured concrete for long-term service. Three reasons to take this extra step before burying insulation in the ground:

1. Encasing pipe insulation before burying it will stop exposure to ground water (above or below the water table). When ground water penetrates through cracks or improperly sealed insulation seams it can cause water to get trapped between the pipe and insulation. Long-term water infiltration coupled with the presence of ground water chemicals or contaminants can reduce thermal efficiency of the insulation, damage copper or steel pipes, and cause corrosion under insulation of the pipe.
2. Encasing insulation prevents compression under the static load exerted from soil or ground materials like rocks or sand. This static load imposed on uncovered, buried insulation, squeezes the insulation causing a 20% reduction of the intended wall thickness resulting in a loss of thermal insulating performance. In addition, simply increasing the wall thickness of the insulation will not totally compensate for this loss in thermal performance.
3. There is a difference in heat transfer that occurs in above ground verses underground conditions. The thickness of insulation for underground use is affected by hydrostatic forces that change the heat flow from what would normally be expected above ground. Therefore, the thermal calculations that have been made with above ground design conditions will not be accurate for underground conditions.



While we recommend encasing insulated pipe in a sealed conduit before burial, there may be an application where pipe corrosion is not a high risk such as non-metallic pipes. Armacell insulation can be buried with direct ground contact, but it must be installed in a well-drained trench backfilled with sand or dirt and compacted as little as possible. The below ground installation must also be above the local water table to limit the water that enters the space between the pipe and the insulation. It is also advisable to move up at least one measure in wall thickness so that the desired wall thickness and R-value are achieved after the insulation is compressed upon burial.

When Armacell insulation products are installed correctly, pipes are protected from long-term exposure to corrosion, acids, ground water, chemicals, contaminants, and compression damage allowing our solutions to deliver long-term thermal efficiency and condensation control. Contact our Technical team for additional information or questions.

For more information, please visit:
www.armacell.us