

Insulation Preserves Pipes' Integrity

Throughout Washington, D.C., underground steam pipes carry energy from central heating plants to various government buildings. Mostly, these pipes are located inside shallow concrete boxes several feet below grade level. Often, the pipes have asbestos insulation around them.

The concrete boxes were constructed with a central floor drain, where rainwater that seeped in either would be pumped out or gravity-fed into a lower sump for disposal. But after many years of rain seeping in because of poorly fitting lids and cracks in the sides of the boxes, sediment accumulated to the point that floor drains became clogged, with rainwater soaking the insulation and touching the hot steam piping. The result was live steam flowing through the underground chamber and exiting through manholes and cracks.

Although the boxes were built to withstand many years of service, their location below grade, coupled with heavy concrete lids often reinforced with steel girders, made them difficult to open for inspection and maintenance. With continued rainwater infiltration and steam reaching the piping system, the insulation began to break down, fall off, and further clog the floor drains. When this occurred, usually in the lower sections, a significant amount of energy would be transferred from the pipes to the surrounding concrete walls, which, in turn, would transfer

energy to the surrounding soil and the grass and sidewalks above. Often, steam piping many feet below the ground could be traced on the surface simply by following the burned-out grass or melted snow.

The solution chosen by the project engineer involved exca-

sensitivity of the project, open construction time had to be kept to a minimum. Because DriTherm insulation is manufactured at and shipped directly from six plants throughout the United States, a tight schedule was able to be kept.

Typically, DriTherm is installed around new underground district energy piping carrying fluids ranging from chilled water to high-pressure steam. One product is suitable for pipe temperatures from minus 273 F up to 480 F.



Flowable Fill cement being installed over DriTherm insulation.

vating around the concrete boxes down to their resting depth and installing several inches of DriTherm waterproof underground pipe insulation around them. The concrete lids were not removed because of the danger posed by the asbestos insulation within the boxes and the significant amount of time that would have been required to complete the project. Once the DriTherm insulation was installed, Flowable Fill cement was poured over it.

The DriTherm insulation around the boxes prevents thermal loss, which, at the very least, allows the grass above to grow.

Given the national-security

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As seen in:

