



**TECHNICAL NOTE 600-9**  
**C-THERM**  
**INSULATED FIELD JOINTS**  
February 11, 2010

It is frequently necessary to provide for field joints to cover the welded or threaded connections between joints of insulated pipe. The field joints may be installed on land, or in many cases, at sea. Every installation is different. However, certain key characteristics are always important:

- The insulating properties of the field joint must be as similar to that of the “parent” pipeline insulation as possible.
- The mechanical properties, primarily stiffness, of the field joint must be as similar to the rest of the pipeline as possible.
- The field joint system must be very fast and easy to install, with little training and minimal special equipment required.

To compliment its *C-THERM* product line of subsea insulation materials, Cuming Corporation has created a number of field joint designs. They fall into two main styles: “Cast-in-Place” field joints employ a fast-curing polymeric filler injected into a sleeve of polyethylene or heat-shrink tubing; “Mechanical” field joints are pre-cast half-shells of syntactic foam strapped or bolted around the pipe. Both styles are illustrated in the sketch below.

The “Cast-in-Place” style requires a very fast-curing resin system, such as polyurethane, to achieve the short cycle time needed, especially for shipboard installation; matching the thermal and structural properties of the pipeline insulation may be difficult. In most cases the “Mechanical” style, as a pre-manufactured unit, affords greater freedom in engineering an optimal system.

Customers are invited to contact Cuming Corporation’s experienced service engineers for advice in designing the best field joint system for their pipeline project.

