

# CUMMING

## **TECHNICAL BULLETIN 625-1**

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## **C-THERM FPC PRE-CAST SYNTACTIC FOAM INSULATION**

### **INTRODUCTION**

Cuming Corporation's **C-THERM** product line of syntactic foam thermal insulation offers superior performance for deepsea oil and gas production. See Technical Note 600-1 for an overview of the entire product line. Bulletins on other materials in the **C-THERM** line of insulation systems for subsea equipment include 625-2, "pour-in-place" and 625-3, "pack-in-place."

### **SYNTACTIC FOAM**

The basis of any **C-THERM** product is syntactic foam, an advanced composite material of glass or ceramic microspheres cast into a binder of semi-rigid epoxy plastic resin. The outstanding chemical, thermal, and mechanical properties of **C-THERM** materials are adaptable to almost all operating conditions.

### **FORMS AVAILABLE**

**C-THERM** FPC is syntactic foam pre-cast at the factory into a variety of shapes, blocks, sheets, sleeves, and half-shells for bonding or attachment to subsea equipment. Almost any size or shape is possible, and custom-molded objects can be made available. A number of pre-cast projects have been completed, and tooling may already be on hand.

### **OPERATING LIMITS**

**C-THERM** FPC pre-cast syntactic foam articles are available in a variety of temperature ratings to suit a wide range of conditions, from 100° to 150°C (212–302° F). Typical depth rating for all grades is 3050 m (10,000 ft). See the current companion data sheet for a complete listing of all physical properties of the particular grade you need for your application.

### **SPECIAL HIGH ELONGATION**

**C-THERM** FPC pre-cast syntactic foam is also available in a new series of "Third Generation" high elongation formulas with more flexibility. The improved pre-cast version is designated FPC-HE. Elongation values of up to

Syntactic foam half-shells molded of **C-THERM** FPC pre-cast material effectively insulate subsea pipeline connections.



30% or more are now achievable. Contact our sales engineers for the current data sheet describing the **C-THERM** grade best for you.

### **TOTAL COVERAGE**

The **C-THERM** insulation system uses an "ensemble" of pre-cast parts, pour-in-place kits, and pack-in-place syntactic foam to achieve total safe and complete coverage of critical subsea equipment. Consult with our sales engineers for expert advice on insulation.

### **ATTACHMENT METHODS**

Blocks, panels, and sleeves of **C-THERM** FPC may be securely attached to subsea equipment in a variety of ways. Corrosion-resistant bolting and straps can be provided. **C-BOND** adhesives firmly attach the insulation, yet permit it to move slightly during thermal cycling. Our sales engineers will recommend the best methods.

### **SAFETY AND HEALTH**

These products present no unusual hazard under normal use; however, they are intended for use by trained professionals in accordance with all applicable regulations. Consult Material Safety Data Sheet 625-1 and file for reference.

Sales Offices Worldwide

See our website  
[www.cumingcorp.com](http://www.cumingcorp.com)  
for the office nearest you.

