



**US Army Corps  
of Engineers®**

# ENGINEERING AND CONSTRUCTION BULLETIN

**No. 2011-13**

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**Subject:** Polypropylene Piping for Hydronic Use

**Applicability:** Directive and Guidance

**References:**

a. American Society for Testing and Materials (ASTM) F2389 – 10, Standard Specification for Pressure-rated Polypropylene (PP) Piping Systems

b. ASTM E84-10b, Standard Test Method for Surface Burning Characteristics of Building Materials

1. Polypropylene piping and associated fittings are now permitted for hydronic use in Corps new construction and renovation projects. Some advantages of this piping are significant saving over steel or copper piping and corrosion resistant properties.
2. Fusion equipment and tools used for joining the pipe are unlike PVC piping connecting methods and associated PVC cement. It should be noted that the fusion tools can be challenging using in overhead or confined spaces.
3. Maintenance staff shall be made aware when polypropylene piping exists in their area of responsibility. Proper equipment and tools for polypropylene piping used to address maintenance problems such as changing valves should be kept available to maintenance personnel. The applicable training for this equipment and tools should occur shortly after a facility with polypropylene piping is turned over to the customer.
4. Some manufacturers have claimed that less insulation is required for the polypropylene piping due to its thermal characteristics. The manufacturer's data must be carefully and completely reviewed to assure proper insulation, depending on the conditions of the flowing liquid, is applied.
5. The Navy and NASA agree that the polypropylene piping can be an option for hydronic use. Changes to unified guide specifications prepared by the Army, Navy and NASA are forthcoming. Below is a list of some of the guide specifications affected and their preparing

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activity. Additional specifications may be affected once a full review is performed. Until the specification changes are completed, the designer shall assure that the polypropylene piping and fittings are manufactured and installed in strict accordance to ASTM F239-10 and ASTM E84-10b as referenced in this ECB.

**UFGS AFFECTED BY ALLOWING THE USE OF POLYPROPYLENE PIPING FOR HYDRONIC USE WITH PREPARING ACTIVITY:**

UFGS 23 00 00 Air Supply, Distribution, Ventilation, and Exhaust Systems (USACE)

UFGS 23 05 15 Common Piping for HVAC (NASA)

UFGS 23 07 00 Thermal Insulation for Mechanical Systems (USACE)

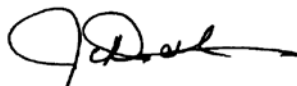
UFGS 23 21 13.00 20 Low Temperature Water (LTW) Heating System (NAVFAC)

UFGS 23 21 13.23 20 [High] [Medium] Temperature Water System Within Buildings (NAVFAC)

UFGS 23 57 10.00 10 Forced Hot Water Heating Systems Using Water and Steam Heat Exchangers (USACE)

UFGS 23 64 26 Chilled, Chilled-Hot, and Condenser Water Piping Systems (NAVFAC)

6. The point of contact for this ECB is [Timothy Gordon](#), CECW-CE, 202-761-4125.



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