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**BUILDINGS BULLETIN 2011-005**  
**OTCR**

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**Supersedes:** None

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**Purpose:** This document establishes acceptance criteria for the use of polypropylene ("PP") piping systems in hydronic piping, irrigation systems and water recycling distribution piping systems as alternative materials in the 2008 NYC Construction Codes.

**Related Code Section(s):**

AC 28-113.2.3	PC 101.7	PC Chapter 11
MC Chapter 12	PC 608	PC Appendix C
MC 1206	PC Chapter 7	

**Related Buildings Bulletin(s):** BB 2010-027

**Subject(s):** Hydronic piping, polypropylene; Irrigation system, polypropylene; Water recycling distribution piping system, polypropylene

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**Background:** Polypropylene (PP) piping is not permitted in the NYC Plumbing code for water supply, sanitary drainage and storm drainage. The NYC Mechanical and Plumbing codes are silent with regard to the use of PP for hydronic piping, irrigation and water recycle piping systems.

**Description:** Polypropylene ("PP") is a thermoplastic material made by polymerizing propylene and is used for various applications including the manufacture of piping. PP piping system components include piping, fittings, valves, and manifolds.

**Uses:** PP piping systems may be used for hydronic piping, irrigation systems and water recycling distribution piping systems.

**Restrictions:**

PP piping systems shall not be used in the following applications:

1. Storm drainage in accordance with PC chapter 11
2. Sanitary drainage in accordance with PC chapter 7
3. Water supply and distribution in accordance with PC chapter 6

**Evaluation Scope:** 2008 NYC Construction Codes

**Evaluation Criteria:** Pursuant to section AC 28-113, the Office of Technical Certification and Research recognizes PP piping system components tested and evaluated in accordance with ASTM F 2389 "Standard Specification for Pressure-rated Polypropylene (PP) Piping Systems" <sup>1</sup>. Acceptable PP piping systems shall be listed and labeled by an approved agency in accordance with section AC 28-113.2.3 and shall comply with the conditions of this bulletin.

**Conditions of Acceptance:** PP piping systems shall be designed, installed and manufactured in accordance with the 2008 NYC Construction Codes and other applicable provisions including but not limited to the following:

**A. Design**

**1. Hydronic systems:**

Hydronic piping systems shall be designed as per MC Chapter 12.

**2. Irrigation systems:**

- a. When connected to the potable water supply system, the valve isolating the PP irrigation system from the domestic water supply system shall be located after any required building RPZ valve and such valve shall comply with the Plumbing and Mechanical codes for potable water system valves.
- b. When connected to water recycling systems the PP irrigation piping shall:
  - i. be not less than 3 inches in diameter
  - ii. be located in the same lot as the water recycling system as per OTCR Buildings Bulletin 2010-027, issued on November 10, 2010.

**3. Water recycling distribution piping systems:**

All PP piping systems used with recycled wastewater shall comply with OTCR Buildings Bulletin 2010-027.

**B. Installation**

**1. General requirements:**

- a. Installation requirements shall be in accordance with the manufacturer's instructions, the NYC Plumbing Code, and the conditions of this bulletin.
- b. Installation of PP piping system shall be performed by a NYC licensed plumber,
- c. PP piping systems shall be identified as carrying nonpotable water even if such systems contain potable water.
- d. All shipments and deliveries of materials shall be accompanied by a certificate or label certifying that the materials shipped or delivered are equivalent to those tested and approved.

**2. Hydronic systems:** PP piping systems installations shall be in accordance with section MC 1206.

**3. Water recycling distribution piping systems:**

- a. In accordance with OTCR Buildings Bulletin 2010-027, PP piping systems used for water recycling distribution shall be identified as containing nonpotable water even such systems contain potable water.
- b. When potable water is provided to PP piping systems as makeup water, the potable water shall be protected against backflows in accordance with sections FC 608 and PC 101.7.

**C. Manufacturing**

**1. Material manufacture:**

Material specifications and materials used in the manufacture of polypropylene piping systems shall comply with section 5 of ASTM F 2389.

**2. Dimensions and tolerances:**

PP pipe dimensions shall meet the requirements as per International Piping Standards (IPS) schedule 80 in accordance with section 7 of ASTM F 2389.

**3. Workmanship:**

Finish and appearance of PP piping systems shall be of uniform color, opacity, density and other physical properties.

**4. Marking for Polypropylene piping systems:**

PP piping systems shall be marked in accordance with section 12 of ASTM F 2389 including:

- a. manufacture's name
- b. nominal pipe size
- c. "IPS series SCH 80"
- d. pressure rating(s) and temperature
- e. manufacture's production code

- Referenced Standards:**
1. ASTM F 2389 "Standard Specification for Pressure-rated Polypropylene (PP) Piping Systems." ([www.astm.org](http://www.astm.org))

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