

**INTERNATIONAL ASSOCIATION OF PLUMBING  
AND MECHANICAL OFFICIALS**

**IAPMO GUIDE CRITERIA**

**FOR**

**GRADE LEVEL YARD HYDRANT AND**

**HOSE STORAGE CHAMBER**

**IAPMO IGC 191-2003 (R2014)**

**1. PURPOSE**

- 1.1** The purpose of this standard is to establish an acceptable standard for grade level hose storage systems incorporating a remote hose bib for connection to residential or light commercial potable water. Its intent is to serve as a guide for manufacturers, distributors, architects, engineers, contractors, installers, inspectors and users; to promote understanding regarding materials, manufacturing and installation; and to provide for identification of compliant grade level yard hydrant and hose storage chambers.
- 1.2** The provisions of this standard are not intended to prevent the use of any alternate material, or method of construction, provided any such alternate meets or exceeds the intent of this standard.

**2. SCOPE**

- 2.1** This standard covers minimum standards for materials used in the construction of polyethylene in-ground boxes and covers (aka grade level enclosures), and to minimum vertical loading performance requirements for the grade level enclosures as stipulated in the referenced ASTM documents.
- 2.2** This standard covers the materials used in the manufacture of the plumbing components of the water delivery system including the PVC manifold with it's components, the coiled polyurethane hose and brass connectors and the multi pattern spray nozzle.

**3. REFERENCE STANDARDS**

- 3.1** All standards referenced herein shall be the current edition of that standard as published.

|                |                                                                                       |
|----------------|---------------------------------------------------------------------------------------|
| ASME A112.18.1 | Plumbing Fixture Fittings                                                             |
| ASTM C 857     | Minimum Structural Design Loading for Underground Precast Concrete Utility Structures |

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|               |                                                                    |
|---------------|--------------------------------------------------------------------|
| ASTM D 543    | Evaluating the Resistance of Plastics to Chemical Reagents         |
| ASTM D 1248   | Test for Surface Burning Characteristics of Building Materials     |
| ASTM D 1505   | Density of Plastics by the Density-Gradient Technique              |
| ASTM D 1785   | Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120 |
| ASTM D 2466   | Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40      |
| ASTM D 5476   | Thermoplastic Polyurethane Materials (TPU)                         |
| ASTM F 545    | PVC and ABS Injected Solvent Cemented Plastic Pipe Joints          |
| IAPMO IGC 157 | Ball Valves                                                        |

#### 4. GENERAL REQUIREMENTS

- 4.1 Installation of the device will shall comply with Chapter 6 of the Uniform Plumbing Code.
- 4.2 A shut-off valve shall be conveniently located within the unit providing a shut-off for the hose bibb. A union will be provided for connection to the domestic water service line and comply with ASTM D 2466.
- 4.3 PVC joints shall be solvent-cemented comply with ASTM F 545.
- 4.4 The piping, manifold and hose will be capable of delivering at least 4 GPM at 20 psi to the nozzle and complying with ASME A112.18.1.
- 4.5 Grade level enclosure shall be fitted with a hinged cover. Cover shall have a textured surface, provision for safe access by user and be free of trip hazard.
- 4.6 Chemical Resistance shall be tested in accordance with ASTM D 543.
- 4.7 Material used in the manufacture shall contain additives of a polymeric type hindered amine UV light stabilizer and a hindered phenolic long-term antioxidant.
- 4.8 The shut-off valve shall comply with comply with IAPMO IGC 157.

#### 5. MATERIAL REQUIREMENTS

- 5.1 **Grade level enclosure.** The body and cover shall be manufactured by a high density polyethylene Type III, Class A and Category 3 in accordance with ASTM D 1248 and the density of the base resin (natural resin) shall be tested in accordance with ASTM D 1505. Density shall be  $\geq 0.950 \text{ gm/cm}^3$  and  $\leq 0.965 \text{ gm/cm}^3$ .
- 5.2 **Manifold.** The manifold material shall be Schedule 40 PVC pipe complying with ASTM D 1785 and Schedule 40 PVC fittings complying with ASTM D 2466.
- 5.3 **Hose.** The coiled urethane hose shall comply with ASTM D 5476.

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