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INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS

IAPMO GUIDE CRITERIA

FOR

BIO HAZARD DISPOSAL DEVICE

IGC 238-2007

1. PURPOSE

- 1.1** The purpose of this standard is to establish a generally acceptable standard for biological hazard disposal devices. Its purpose is to serve as a guide for producers, distributors, architects, engineers, contractors, installers, inspectors and users; to promote understanding regarding materials, manufacture and installation; and to provide for identifying biological hazard disposal devices complying with this standard.
- 1.2** The provisions of this standard are not intended to prevent the use of any alternate materials or methods of construction, provided any such alternate meets the intent and requirements of this document and changes are amended to this standard.

2. SCOPE

- 2.1** This standard applies to biological hazard disposal devices. It specifies manufacturing, performance, and safety requirements, test methods and details of markings. These devices shall be installed in accordance with all applicable safety and medical requirements.
- 2.2** The biological hazard disposal devices are not used for isolation (highly infective) waste or cultures of stocks of infectious agents. Hospitals handle disposal of these items in accordance with special CDC guidelines.

3. REFERENCE STANDARDS

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

ASME A112.18.1/CSA B125.1	Plumbing Supply Fittings
ASME B1.20.1	Pipe Threads, General Purpose (Inch)
ASSE 1013	Reduced Pressure Principle Backflow Preventers and Reduced Pressure Fire Protection Principle Backflow Preventers
ASTM D 380	Rubber Hose
ASTM D 622	Rubber Hose for Automotive Air and Vacuum Brake Systems

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ASTM D 1784	Rigid Poly (Vinyl Chloride)(PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
ASTM F 437	Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Sch. 80
ASTM F 439	Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Sch. 80
ASTM F 441	Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Sch. 40 and 80
IAPMO IGC 123	Solenoid Type Water Control Valve
ISO 10079	Medical Suction Equipment
ISO 14971	Medical Devices -- Application of Risk Management to Medical Devices
ISO 15223	Medical Devices -- Symbols to be Used with Medical Device Labels, Labelling and Information to be Supplied
NSF 14	Plastics Piping System Components and Related Materials
NSF 61	Drinking Water System Components - Health Effects
UL 60601-1	Medical Electrical Equipment, Part 1: General Requirements for Safety

4. DEFINITIONS

- 4.1 Biological Hazard Disposal Device.** The Biological Hazard Disposal Device is used by hospitals and surgery centers for onsite sanitary sewer disposal of fluid and semi-solid waste generated during patient care. Processed waste includes irrigation fluid, blood, urine, body fat, and fecal matter. The device safely empties, cleans, and disinfects reusable 1800cc and 2800cc waste collectors.

5. GENERAL REQUIREMENTS

- 5.1 Pipe and Fittings.** Pipe and fittings shall be manufactured from virgin rigid CPVC (chlorinated polyvinyl chloride) vinyl compounds with a cell class of 23447 for fittings, 24448 for pipe in sizes 1/4" through 8", and 23447 for pipe in sizes 10" and 12", as identified in ASTM D 1784. CPVC Schedule 40 and 80 pipe shall be Iron Pipe Size (IPS) conforming to ASTM F 441. CPVC Schedule 80 fittings shall conform to ASTM F 439. CPVC Schedule 80 threaded fittings shall conform to ASTM F 437. Pipe and fittings shall be manufactured as a system and be the product of one manufacturer.
- 5.2 Toxicity.** Pipe and fittings shall conform to National Sanitation Foundation (NSF) Standard 61 or the health effects portion of NSF Standard 14.
- 5.3 Valves.** Solenoid valve shall operate at twenty-four (24) volts A.C and comply with IAPMO IGC 123. Flow control valve shall comply with ASME A112.18.1/CSA B125.1 and deliver the predetermined flow rate at water supply pressures varying from 30 psi (206.9

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Kpa) to 80 psi (551.7 Kpa). Master Valves and pressure transducers shall be employed to reduce incidence of solenoid valve malfunction.

5.3.1 Backflow Protection. The device shall include high hazard backflow protection in accordance with one of the following standards recognized by the Uniform Plumbing Code:

- (a) ASME A112 1.2 Air Gaps in Plumbing Systems
- (b) ASSE 1001 Pipe Applied Vacuum Breakers
- (c) ASSE 1013 Reduced Pressure Principle Backflow Preventers
- (d) ASSE 1020 Pressure Vacuum Breaker
- (e) ASSE 1056 Spill Resistant Vacuum Breaker

5.4 Pump. Injection pumps shall be 120 volts A.C. and shall comply with applicable UL standard. The Injection pumps, water manifolds, water circuits, or any of the fittings shall not leak or become damaged when tested in accordance with Section 6.3 of this standard. The performance capacity of the Injection pumps shall be a minimum of 10 oz. per minute. For the Transfer pump, a minimum performance capacity of 2 gallons per minute for a 1/3 horsepower pump.

5.5 Electrical Integrity. All electrical components, connections and assemblies shall comply with the applicable construction and testing provisions of following standards:

- a) UL 60601-1 Medical Electrical Equipment Part 1: General Requirements for Safety
- b) UL 60601-1-1 Medical Electrical Equipment Part 1-1: General Requirements for Safety Collateral Standard: Safety requirements for Medical Electric Equipment
- c) EN 60601-1-2 Medical Electrical Equipment Part 1-2: General Requirements for Safety Collateral Standard: Electromagnetic compatibility - Requirements and Tests.
- d) UL 60601-1-4 Medical Electrical Equipment Part 1-2: General Requirements for Safety Collateral Standard: Programmable Electrical Medical Systems
- e) BS EN ISO 10079-1:2000 BS 5724-2.28:2000 ISO Medical Suction Equipment Part 1: Electrically powered suction equipment - Safety requirements.
- f) ISO 14971 - Medical Devices - Application of risk management to medical devices.
- g) ISO 15223 Medical Devices - Symbols to be used with medical device labels, labeling and information to be supplied.

5.6 Equipment Connections. Connection fittings and hoses for water inlet and discharge shall be included with the equipment package.

- a) All threaded pump connection fittings supplied shall comply with ASME B1.20.1. Other connections shall be per manufacturer's specifications.
- b) Inlet and discharge hose sizes shall be per manufacturer's specifications and comply with the requirements in Section 6.1 and 6.2 of this standard.

5.7 Materials. The equipment shall be constructed of the following materials:

- a) The cabinet and covers shall be constructed of 304 stainless steel.
- b) The basin and lid shall be constructed of thermoformed plastic.