

ATTACHMENT F

Commonwealth of Pennsylvania
Department of Transportation

Specification For Polyethylene Paint Totes

1. Scope

- 1.1 This specification covers cylindrical paint totes {a.k.a. intermediate bulk containers (IBCs)} molded in one-piece seamless construction by rotational molding. Included are requirements for materials, properties, design, construction, dimensions, tolerances, workmanship, and appearance. Tank capacity is 275 gallons (1,040 L).

2. Materials

- 2.1 The material used shall be virgin linear polyethylene resin as compounded and certified by the manufacturer. Tanks shall be made from linear polyethylene resin (0.5" thick).
- 2.2 All polyethylene resin material shall contain a minimum of a U.V. 8 stabilizer as compounded by the resin manufacturer. Pigments may be added at the purchaser's request, but shall not exceed 0.25% (dry blended) of the total weight.
- 2.3 Mechanical Properties of tank material:

<u>PROPERTY</u>	<u>ASTM</u>	<u>VALUE</u>
Density (Resin)	D1505	0.940-0.947 g/cc
Tensile (Yield Stress 2"/min)	D638	2700 PSI
Elongation at Break (2"/min.)	D638	350%
ESCR (100% Igepal, Cond. A, F50)	D1693	400-1000 hours
ESCR (10% Igepal, Cond. A, F50)	D1693	200-500 hours
Vicat Softening Degrees F. Temperature	D1525	235
Flexural Modulus	D790	97,000 - 103,000 PSI

3. Design Requirements

- 3.1 Totes shall be reusable, translucent, heavy-duty linear polyethylene intermediate bulk containers capable of handling bulk liquids of 1.9 specific gravity.
- 3.2 Totes shall be UN / D.O.T certified for shipping and handling of bulk liquids with a maximum of 1.9 specific gravity.
- 3.3 Totes shall have a heavy duty polyethylene base that allows four-way forklift and pallet jack entry compatible with most material handling equipment and stacking frame and top protector with 4 legs allowing tote to be capable of being stacked a minimum of two high when completely filled with paint.

3.4 Totes shall have a certificate of compliance with 49CFR Subpart O section 178.2 (c).

Design Requirements (Continued)

3.5 The base and top protector for the totes to be done in yellow (for yellow paint totes) and in natural white (for white paint totes). The front side of each top protector shall have the paint supplier's name/logo (minimum height 2" in contrasting color) molded into it for identification purposes.

4. Workmanship

- 4.1 The finished tank wall shall be free, as commercially practicable, of visual defects such as foreign inclusions, dried paint, air bubbles, pinholes, pimples, crazing, cracking and delaminations that will impair the serviceability of the vessel. Fine bubbles are acceptable with tanks to the degree in which they do not interfere with proper fusion of the resin melt.
- 4.2 All cut edges where openings are cut into the tanks shall be trimmed smooth.

5. Tank Fittings / Attachments

5.1 Bottom Drain Valve.

5.1.1 The bottom drain valve shall be recessed full port width of 2" (51mm) with a 2" (51mm) male quick disconnect fitting. The valve and disconnect shall be made of polypropylene, leak free and compatible with waterborne paint.

5.2 Top Fill Lid

5.2.1 The top lid will be a screw cap style lid with female threads with a minimum access opening of 20" (508 mm) to accommodate stirring blades, and shall be easily opened by hand. The screw cap shall have a 6" (152 mm) inner cap with 2" (50.8 mm) bung incorporated into it to provide for quick fill and vacuum vent attachment.

6. Markings / Certifications

6.1 Gallonage Marker

6.1.1 Tote shall have a molded-in gallon marker for at a glance monitoring.

6.2 Certification

6.2.1 Tote shall have molded in markings for the Following:

- DOT shipping classification
- capacity
- tare mass
- gauge test pressure
- the month, day and year of manufacture
- Manufacturer name, city and state

6.3 Customer specified labeling as per section 3.5.

Markings / Certifications (Continued)

6.4 Totes shall have a document holder attached that will be used to hold a document to be prepared by the paint supplier which will include the following:

- color of paint,
- quantity of paint contained,
- batch number
- formula code
- other information as may be specified/requested by the Pennsylvania Department of Transportation.