



Standard Specification for Manhole Cover Assembly, Bolted, Semi-Flush, Oiltight and Watertight¹

This standard is issued under the fixed designation F1142; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification provides design and construction criteria for a semi-flush, oiltight, and watertight bolted manhole cover assembly.

1.2 The manhole cover assembly depicted in this specification is for use in decks or bulkheads requiring oiltight and watertight covers that are not required to be completely flush. Manhole cover assemblies shall be complete with covers, mounting rings, gaskets, welded studs, washers, and nuts.

1.3 Handles, if required, shall be as specified in the ordering information.

1.4 The values stated in inch pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.5 This specification is not applicable to certain hazardous cargos (see Section 46 CFR 153.254 and 46 CFR 154.340).

1.6 This specification provides design and construction for manhole cover assemblies subjected to lateral pressures such as resulting from vehicle loads or hydrostatic pressures. Where manhole cover assemblies are subjected to primary or cyclic loads, other reinforcement or construction criteria may be necessary to integrate the manhole assembly with the required structural reinforcement for openings in decks or bulkheads. Design of the manhole cover assembly for primary or cyclic loads is beyond the scope of this specification.

2. Referenced Documents

2.1 ASTM Standards:²

A36/A36M Specification for Carbon Structural Steel
A131/A131M Specification for Structural Steel for Ships
A153/A153M Specification for Zinc Coating (Hot-Dip) on

Iron and Steel Hardware

B36/B36M Specification for Brass Plate, Sheet, Strip, And Rolled Bar

D2000 Classification System for Rubber Products in Automotive Applications

F783 Specification for Staple, Handgrab, Handle, and Stirrup Rung

2.2 ANSI Standards:

B1.1 Unified Inch Screw Threads³

Y14.5M Dimensioning and Tolerancing³

B18.2.1 Square and Hex Bolts and Screws, Inch Series³

2.3 American Bureau of Shipping Standard:

Rules for Building and Classing Steel Vessels⁴

2.4 Steel Structures Painting Council Standard:

SP-10 Surface Preparation Specification No. 10⁵

2.5 Code of Federal Regulations Standard:

CFR 46 Code of Federal Regulations⁶

3. Terminology

3.1 Definitions:

3.1.1 *manhole*—an accessway located in a tank structure.

3.1.2 *semi-flush*—placement of the cover over the ringed opening (without coaming).

4. Classification

4.1 *Type I*—15- by 23-in. (381- by 584-mm) size of access opening. *Type II*—18- by 24-in. (457- by 610-mm) size of access opening.

4.2 *Grade 1*—1/4-in. (6.35-mm) thick cover plate. *Grade 2*—3/8-in. (9.5-mm) thick cover plate. *Grade 3*—1/2-in. (12.7-mm) thick cover plate.

¹ This specification is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.03 on Outfitting and Deck Machinery.

Current edition approved June 1, 2012. Published October 2012. Originally approved in 1998. Last previous edition approved in 2007 as F1142 - 98(2007). DOI: 10.1520/F1142-98R12.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁴ Available from American Bureau of Shipping (ABS), ABS Plaza, 16855 Northchase Dr., Houston, TX 77060, <http://www.eagle.org>.

⁵ Available from Society for Protective Coatings (SSPC), 40 24th St., 6th Floor, Pittsburgh, PA 15222-4656, <http://www.sspc.org>.

⁶ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.