



Standard Specification for Manhole Cover Assembly, Bolted, Semi-Flush, Oiltight and Watertight, Hinged¹

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1. Scope

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

1.2 The manhole cover assemblies depicted on this specification are 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, studs, washers, hinge assemblies, and nuts.

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

1.4 Values stated in inch-pound units are to be regarded as standard.

1.5 This standard is not applicable to certain hazardous cargos. (See 46CFR 153.254 and 46CFR 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](#)

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.

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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.

Iron and Steel Hardware

[A575 Specification for Steel Bars, Carbon, Merchant Quality, M-Grades](#)

[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 ABS 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*—accessway located in a tank structure.

3.1.2 *semi-flush*—refers to the placement of the hinged plate over the ringed opening (without coaming).

4. Classification

4.1 Type I—15- by 23-in. (381- by 584-mm) size of access opening

4.2 Type II—18- by 24-in. (457- by 610-mm) size of access opening

4.3 Grade 1— $\frac{1}{4}$ -in. (6.4-mm) thick cover plate

4.4 Grade 2— $\frac{3}{8}$ -in. (9.5-mm) thick cover plate

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 Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://www.dodssp.daps.mil>.