



Standard Specification for Manhole Cover Assembly, Bolted, Raised, Oiltight and Watertight¹

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1. Scope

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

1.2 The manhole cover assemblies depicted in this specification are for use in decks or bulkheads in which the manhole cover assemblies must be of the raised type. Manhole cover shall be complete with coaming, gasket, welded studs or bolts, washers, and nuts.

1.3 Determination of the use of handles will 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](#)

[ANSI 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 *raised*—manhole cover seat is located on an angle or flat bar coaming which protrudes from the tank structure into the space from which it is accessed.

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*— $\frac{1}{4}$ -in. (6.35-mm) thick cover plate. *Grade 2*— $\frac{3}{8}$ -in. (9.5-mm) thick cover plate. *Grade 3*— $\frac{1}{2}$ -in. (13-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.

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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.

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>.