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An American National Standard

Standard Practice for Inclined Cargo Tank Ladders[1]

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1. Scope

1.1 This practice provides design, construction, and installation criteria for inclined ladders to be installed within cargo tanks.

1.2 Where ladders are attached to platforms, see Fig. 1 and Fig. 2 .

1.3 Values stated in SI units are to be regarded as the standard. The values stated in parentheses are provided for information purposes only.

2. Referenced Documents

2.1 *ASTM Standards:*

A 36/A 36M Specification for Structural Steel[2]

2.2 *Other Documents:*

American Bureau of Shipping Rules for Building and Classing Steel Vessels [3]

American Welding Society Publication, AWS D 1.1 Structural Welding Code—Steel[4]

SAE AMS-C-27725 Coatings, Corrosion Preventative, Polyurethane, for Aircraft Integral Fuel Tanks for Use to 250 Degrees F (121 Degrees C)[5]

Steel Structures Painting Council Specification [6]

3. Classification

3.1 Ladders shall be classified into two types:

3.1.1 *Type I*—Ladders installed within cargo tanks carrying cargo other than fuel oil, and

3.1.2 *Type II*—Ladders installed within cargo tanks carrying fuel oil.

4. Significance and Use

4.1 This practice establishes the procedure for the construction and installation of inclined ladders to be fabricated and installed, by the shipyards, within the cargo tanks.

5. Materials and Manufacture

5.1 *Materials—(Type I)*:

5.1.1 *Stringers*—230-mm (approximately 9-in.) by 50-mm (approximately 1⅞-in.) structural channels of carbon steel. (See Specification A 36/A 36M.)

5.1.2 *Upper and Lower Clips*—Flat bars of carbon steel. (See Specification A 36/A 36M.)

5.1.3 *Handrails and Stanchions*—25 mm (approximately 1 in.) diameter carbon steel. (See Specification A 36/A 36M.)

5.1.4 *Treads*—75-mm (approximately 3-in.) by 75-mm by 10-mm (approximately ⅜-in.) structural angles of carbon steel. (See Specification A 36/A 36M.)

5.2 *Materials—(Type II)*:

5.2.1 *Stringers*—Structural flat bars of carbon steel. (See Specification A 36/A 36M.)

5.2.2 *Upper and Lower Clips*—Flat bars of carbon steel. (See Specification A 36/A 36M.)

5.2.3 *Treads*—25-mm (approximately 1-in.) by 25-mm square bars of carbon steel. (See Specification A 36/A 36M.)

5.3 *Manufacture*:

5.3.1 All welding shall be in accordance with American Bureau Shipping Rules for Building and Classing Steel Vessels or AWS D 1.1.

6. Dimensions

6.1 Dimensions indicated are typical. However, these dimensions can be changed to suit other existing structures.

6.2 The tread lengths, or the clear widths, between the stringers for Type I ladders, for commercial and naval ships, shall be 455 mm (approximately 18 in.) and 610 mm (approximately 24 in.), respectively.

6.3 The tread lengths or clear widths between stringers for Type II ladders shall be 380 mm (approximately 15 in.).

6.4 The lengths of the ladder shall be fabricated to suit existing requirements.

6.5 Tolerance shall be ±6 mm (approximately ¼ in.).

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[1] This practice is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.03 on Outfitting.

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[2] *Annual Book of ASTM Standards*, Vol 01.04.

[3] Available from American Bureau of Shipping, ABS Plaza, 16855 Northchase Dr., Houston, TX 77060.

[4] Available from American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126.

[5] Available from Standardization Documents Order Desk, Naval Sea Systems Command, SEA 03R42, 2531 Jefferson Davis Highway, Arlington, VA 22242–5160.

[6] Available from Steel Structures Painting Council, 40 24th St., 6th Floor, Pittsburgh, PA 15222–4656.