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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 Specification for Structural Steel[2]

2.2 *Military Specification:*

MIL-C-277258 Coatings, Corrosion Preventive, for Aircraft Integral Fuel Tanks[3]

2.3 *Other Documents:*

American Bureau of Shipping Rules for Building and Classing Steel Vessels[4]

American Welding Society Publication, AWS D 1.1-Structural Welding Code[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.) × 75 mm (approximately 3 in.) × 50 mm (approximately 1⅞ in.) structural channels of carbon steel. (See Specification A 36.)

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

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

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

5.2 *Materials—(Type II)*:

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

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

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

5.3 *Manufacture*:

5.3.1 All welding shall be in accordance with American Bureau Rules of Shipping 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 430 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.).

7. Workmanship, Finish, and Appearance

7.1 Ladders shall be free of all sharp edges, burrs, projections, weld splatter, and other defects which might be injurious to personnel or equipment or both.

7.2 For cargo tanks carrying cargo other than fuel oils, coat the ladders with one coat 3.0 MIL dry film thickness inorganic zinc silicate following surface preparation in accordance with

[1] Precision and Bias This practice is under the jurisdiction of ASTM Committee F-25 on Shipbuilding 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 Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

[4] Available from American Bureau of Shipping, 45 Eisenhower Drive, P.O. Box 910, Paramus, NJ 07653.

[5] Available from American Welding Society, 550 NW Lajeune Rd., Miami, FL 33135.

[6] Available from Steel Structures Painting Council, 4400 5th Ave., Pittsburgh, PA 15213.