Designation: F 991M – 04

METRIC

An American National Standard

Standard Specification for Docking/Drain Plug and Boss Assemblies [Metric][1]

This standard is issued under the fixed designation F 991M; 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, construction, and purchasing criteria for docking/drain plug and boss assemblies.

1.2 Assemblies are intended for installation in shell, rudder, and tank bottom plate from 8 through 38 mm.

1.3 Assemblies shall be installed at the lowest point of a tank or rudder for draining during dry docking.

1.4 The values stated in SI units are to be regarded as the standard.

2. Referenced Documents

2.1 *ASTM Standards:* [2]

B 164 Specification for Nickel-Copper Alloy Rod, Bar, and Wire

2.2 *Other Documents:*

ABS Rules for Building and Classing Steel Vessels[3]

ANSI B2.1 Standard Pipe Threads Except Dryseal[4]

3. Classification

3.1 Docking plugs and bosses shall be classified as follows:

3.1.1 *Type I*—Docking plug and bosses for plating from 8 to 15 mm (see Fig. 1).

3.1.2 *Type II*—Docking plug and bosses for plating greater than 15 to 38 mm (see Fig. 2).

4. Ordering Information

4.1 Orders for material under this specification shall include the following:

4.1.1 ASTM designation and year of issue.

4.1.2 Type (See Section 3).

4.1.3 Optional nonstandard materials.

5. Materials and Manufacture

5.1 *Materials*:

5.1.1 *Boss*—ABS Grade A or B, plate or bar.

5.1.2 *Plug*—Specification B 164 rod or bar.

5.1.3 Other materials may be substituted to suit hull construction as approved by regulatory bodies.

5.2 *Manufacture*:

5.2.1 Plugs and bosses shall be machined.

5.2.2 Threads shall be in accordance with ANSI B2.1.

6. Dimensions and Tolerances

6.1 Dimensions shall be as indicated in Fig. 1 and Fig. 2.

6.2 Tolerance shall be ±1.5 mm.

6.3 Mass shall be as follows:

	Type I	Type II
Boss	1.6 kg	5.7 kg
Plug	0.6 kg	1.0 kg
Total	2.2 kg	6.7 kg

7. Installation

7.1 All welding shall be to the standards of the Rules for Building and Classing of Steel Vessels (ABS).

7.2 Threads shall be adequately protected during installation.

7.3 Fill plug face with portland cement or other suitable compound and finish flush with face of boss.

7.4 Boss shall be inserted so that drain grooves run forward and aft.

7.5 Plugs shall not be installed near large structural discontinuities.

7.6 Adjacent shell plating weld joint preparation shall be as required to ensure full penetration.

8. Keywords

8.1 boss assemblies; docking/drain plug; drydocking; rudder; shell; tank bottom plate

---

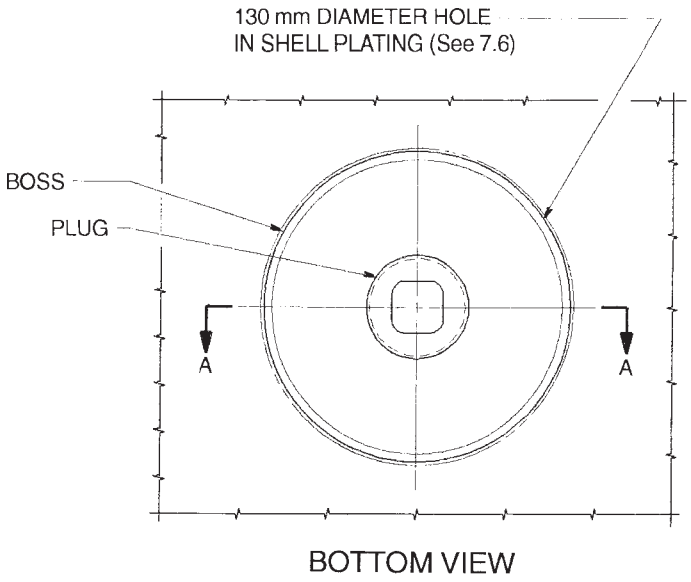
[1] This specification is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.01 on Structures.

Current edition approved May 1, 2004. Published May 2004. Originally approved in 1986. Discontinued in December 2003 and reinstated in 2004 as F 991M – 04.

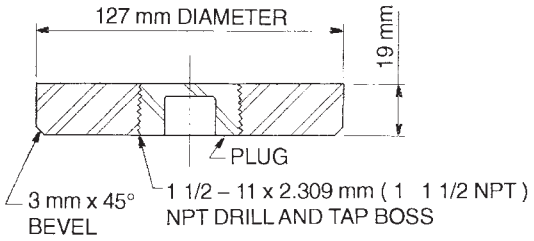
[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

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

[4] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.



BOTTOM VIEW



Section “A–A” (see 7.6)

FIG. 1 Type I

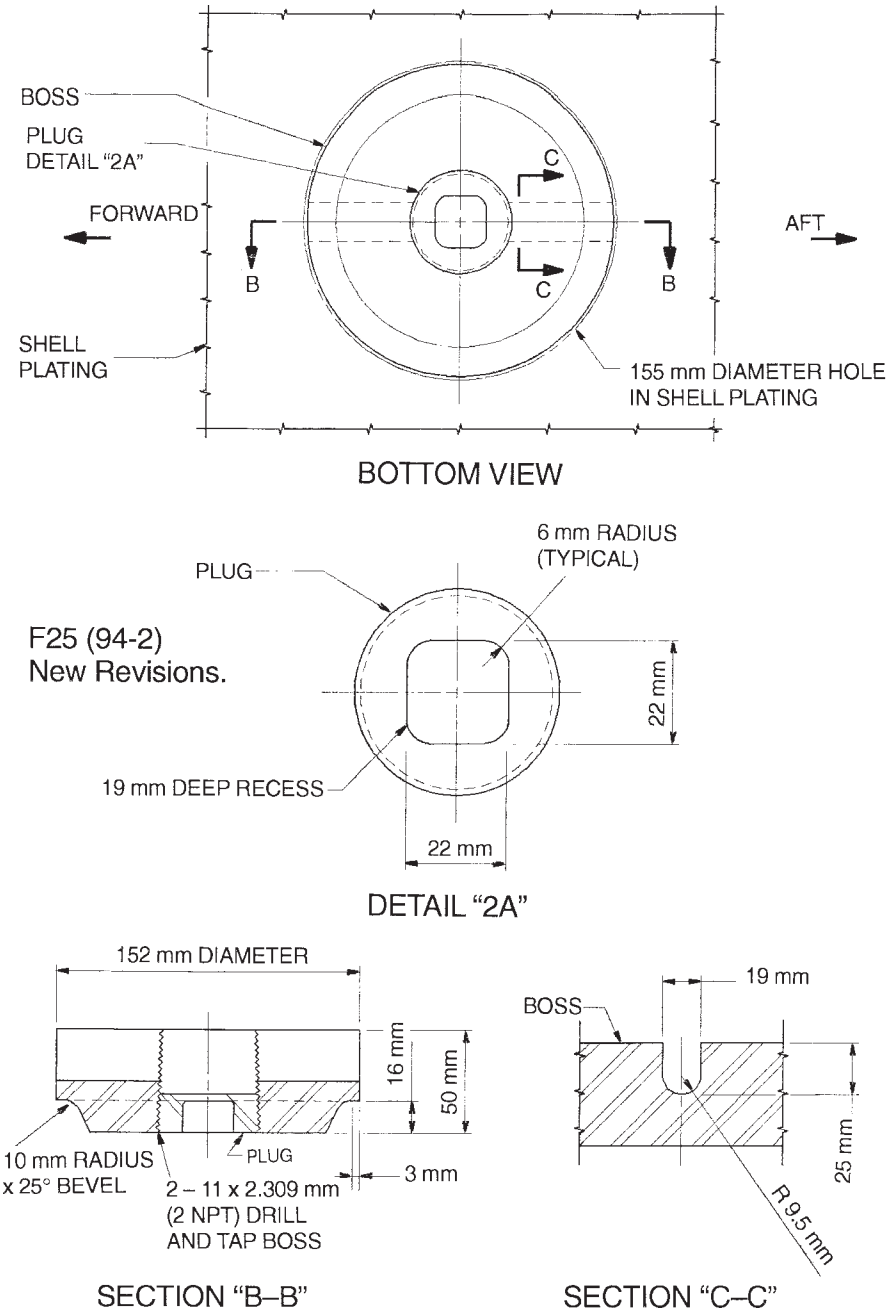


FIG. 2 Type II