



Seafish Construction Standards: Bilge Pumping Systems

This notice should be read in conjunction with the Seafish Construction Standards (Release 2, April 2006). Where information in this notice contradicts the Standards, this notice is to take priority.

Date of effect: 1st July 2009

Summary

This Seafish Information Note provides an amendment to the Seafish Construction Standards for New Fishing Vessels Less than 15m length overall, in relation to bilge pumping systems. The Note replaces section 10.3 of the Standards.

Bilge Pumping Systems

The following amendments are to apply to the Seafish Construction Standards for New Fishing Vessels under 15m length overall.

1 General

- 1.1 An approved means of draining any compartment is to be provided in accordance with the following:-
- (a) Where a vessel is divided into watertight compartments, the bilge suctions and means of drainage are to be so arranged that any water entering any main watertight compartments can be pumped out through at least one bilge suction situated in that compartment.
 - (b) Where peak compartments are incorporated in a vessel's design and are not for ballasting purposes, an accessible drain cock may be fitted in the bulkhead or vertical floor, providing that any drainage from the drain cock will flow naturally to an adjacent bilge suction.

1.2 Bilge pumps are to be fitted in accordance with the following requirements:-

Vessel size (LOA)	Total no. of pumps	Number and type of pump		Minimum capacity of power pumps L/Min	Minimum capacity of hand pumps L/Min
		Hand	Power		
Below 7m	1	1	-	-	70
7m – Below 10m	2	1	1	70	70
10m – Below 15m	2	1	1	130	70

1.3 The table above primarily relates to bilge pumping systems where the pumps are capable of drawing from any compartment. Where independent pumps are installed, such as submersible pumps, the requirements shall apply to each compartment as described in section 3 of this document.

2 Systems incorporating a bilge main

2.1 Where two pumps are required, the system should be so arranged that either pump can draw from any compartment via a suitable changeover system. In vessels over 12m RL, where two pumps are fitted in this arrangement, the hand operated pump may be omitted in favour of a second power pump providing the two pumps draw power from independent power sources.

2.2 The power pump may be either the washdeck or general service pump, providing that the sea water suction is isolated from the bilge system by means of a positive accessible changeover valve or interlocking valve arrangement to ensure only one system may be used at any time, and to prevent sea water draining to the bilge system. The positive changeover valve or cock is to be arranged to avoid the possibility of leak-back or seepage from the sea water system into the bilge pumping system.

2.3 To prevent any leakage from compartment to compartment, bilge pumping systems are to have non-return valves fitted in all suction lines.

2.4 In vessels of 10m LOA and over, the bilge main to the power pump is not to be less than 40mm inside diameter. Any branch bilge section is not to be less than 30mm inside diameter. In vessels below 10m LOA, the bilge main piping may be reduced to 30mm diameter.

3 Independent pumps

3.1 Where a bilge main is not fitted and an independent power pump is installed to provide bilge suction for a single compartment then an additional means of pumping out the compartment is to be provided in the form of a hand operated pump of a capacity not less than the minimum hand pump capacity stated in the table for the relevant size of vessel.

3.2 Discharge pipes should be of an inside diameter to suit the pump, in accordance with the manufacturer's instructions, to maintain the stipulated pumping capacity.

- 3.3 The total capacity of power pumps providing suction in any one compartment shall not be less than the minimum power pump capacity stated in the table for the relevant size of vessel.
- 3.4 Where used, submersible pumps must be fixed in place and have suitable strainers fitted that do not restrict the capacity of the pump.

4 Additional requirements

- 4.1 Shut-off valves and non-return valves are to be fitted on all discharges, placed directly on the vessels sides in an accessible position, and sited above the maximum load waterline, and are to comply with the requirements of Part 3, Section 3.8 of the Seafish Construction Standards for New Fishing Vessels under 15m LOA.
- 4.2 All bilge suctions should be fitted with readily accessible strainers. The total area of the perforation in the strainer should be not less than twice the cross-sectional area of the bilge pipe (for submersible pumps, refer to section 3 of this document).
- 4.3 Bilge systems and valves are to be clearly labelled with regard to compartment served and position of valve.
- 4.4 Small compartments may be drained by individual hand pump suctions. Such compartments should be no greater in volume than one cubic metre and should not contain any machinery that is crucial to the operation of the vessel. The minimum capacity of the hand pump shall be no less than 70 L/min for spaces with a volume of one cubic metre and 35 L/min for spaces with a volume of half a cubic metre or less. For spaces with a volume between these two figures, interpolation should be used to determine the minimum capacity of the hand pump.
- 4.5 Where a watertight compartment that contributes to buoyancy is to be completely sealed and is void of any piping then a means of bilge drainage may be omitted providing the volume of the compartment is no greater than volume V_m in m^3 (determined using the formula below) or filled with an approved closed-cell foam. In any such cases, details should be submitted for approval.

$$V_m = L \times B \times D \times 0.14$$

Where L = length of hull (m)
 B = breadth of hull (m)
 D = moulded depth of hull (m)

- 4.6 Piping used in bilge systems is to be of an approved metal or non-collapsible tubing, and in machinery spaces piping/tubing is to be of fire resistant material.

- 4.7 Metals for piping and valves or fittings are to be compatible in order to avoid electrolytic action and wasting. Mild steel piping is to be galvanised after fabrication. Malleable iron fittings are not to be used in bilge systems.
- 4.8 In decked vessels, hand operated bilge pumps, where fitted, are to be capable of operation from above the deck with the hatches closed.
- 4.9 In all vessels, a bilge alarm system is to be fitted in the wheelhouse with audible and visible indication at helm/control position. Bilge level sensors are to be fitted in the machinery space and fish room/hold. Sensors should also be fitted in any compartment which has a bilge suction if the level of bilge water cannot be readily checked visually without entering the compartment.
- 4.10 Where bilge spaces are to be filled with cement or solid ballast, drain holes are to be fitted to ensure adequate drainage when the cement or ballast is not fitted flush with the top of the vertical floor plates, permitting drainage to the bilge suction well or space under all normal conditions of trim.
- 4.11 Provision is to be made for drainage or approved overboard discharges from both port and starboard sides of any weathertight deck shelter.
- 4.12 All bilge pipework is to be colour coded for immediate identification, and in decked vessels of 12m RL and over, a system diagram is to be displayed in a prominent position. Simple bilge pipework systems on vessels of less than 12m RL need not be colour coded providing the valves are clearly labelled.

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