

## SECTION 6

## SCUPPERS AND SANITARY DISCHARGES

### 1 General

#### 1.1 Application

##### 1.1.1 Scope

- a) This section applies to:
  - scuppers and sanitary discharge systems, and
  - discharges from sewage tanks
- b) Discharges in connection with machinery operation are dealt with in Ch 1, Sec 4, [8.4].

#### 1.2 Principle

##### 1.2.1 Scuppers and sanitary discharges

- a) Scuppers, sufficient in number and suitable in size, are to be provided to permit the drainage of water likely to accumulate in the spaces which are not located in the yacht's bottom
- b) The number of scuppers and sanitary discharge openings in the shell plating is to be reduced to a minimum either by making each discharge serve as many as possible of the sanitary and other pipes, or in any other satisfactory manner.

### 2 Yacht or Charter Yacht of length less than 24 m

#### 2.1 Application

##### 2.1.1 Scope

The following requirements apply to motor or sailing yacht of less than 24 metres in load line length.

**2.1.2** Alternative arrangements for yacht having the navigation notation **sheltered area** or **coastal area** or **unrestricted navigation limited to 60 nautical miles** as defined in Pt A, Ch 1, Sec 2 may be agreed on a case by case basis.

#### 2.2 Self draining arrangements

##### 2.2.1 Unprotected deck or open spaces

Adequate provisions are to be made to ensure the rapid freeing of the deck and cockpit from green seas water by self-draining measures.

##### 2.2.2 Cockpits or enclosed wells

When in unprotected deck or open spaces bulkheads form an enclosed well where a large quantity of water is likely to accumulate, scuppers are to be arranged.

Unless justifiable calculations are submitted, scuppers of at least 32 mm in diameter are to be fitted on flat deck on both sides, every 6 m on the axial length, with a total scuppers section of at least 140 mm<sup>2</sup> per square meter of surface to be drained.

#### 2.3 Drainage from spaces below the watertight deck or within enclosed spaces on the watertight deck

##### 2.3.1 Normal arrangement

Scuppers and sanitary discharges from spaces below the watertight deck or from within superstructures and deck-houses on the watertight deck fitted with doors complying with the provisions of Pt B, Ch 8, Sec 8 are to be led to:

- the bilge in the case of scuppers, or
- suitable sanitary tanks in the case of sanitary discharges.

##### 2.3.2 Alternative arrangement

The scuppers and sanitary discharges may be led overboard, provided that the spaces drained are located 400 mm above the deepest waterline.

#### 2.4 Drainage of spaces not fitted with efficient weathertight doors

##### 2.4.1 Normal arrangement

Scuppers leading from superstructures or deckhouses not fitted with doors complying with the requirements of Pt B, Ch 8, Sec 8 are to be led overboard.

#### 2.5 Arrangement of discharges

##### 2.5.1 Normal arrangement

All penetration in the hull communicating with the interior of the yacht are to be fitted with a valve or cock with a suitable position indicating device.

##### 2.5.2 Alternative arrangement

- a) Non-return valves may be fitted in lieu of valves or cocks on discharges which are led through the yacht side from spaces above the main deck
- b) Openings over 400 mm above the waterline in motor yachts of length not exceeding 15 m are not to be fitted with such arrangements.

#### 2.6 Valves and pipes

##### 2.6.1 Materials

All shell fittings and valves below the waterline, or in a high fire risk space, are to be of steel, bronze, copper or other ductile material.

### 2.6.2 Operation of the valves

Valves are to be readily accessible and provided with an indicator showing whether the valve is open or closed.

## 3 Yacht or Charter Yacht of length equal or over 24 m

### 3.1 Application

#### 3.1.1 Scope

The following requirements apply to motor or sailing yacht of 24 metres in load line length and over.

**3.1.2** Alternative arrangements for yacht having the navigation notation **sheltered area** or **coastal area** or **unrestricted navigation limited to 60 nautical miles** as defined in Pt A, Ch 1, Sec 2, or for yacht of less than 500 tons gross tonnage may be agreed on a case by case basis.

### 3.2 Self draining arrangements

#### 3.2.1 Unprotected deck or open spaces

Adequate provisions are to be made to ensure the rapid freeing of the deck and cockpit from green seas water by self-draining measures.

#### 3.2.2 Cockpits or enclosed wells

When in unprotected deck or open spaces bulkheads form an enclosed well where a large quantity of water is likely to accumulate, scuppers are to be arranged.

Unless justificatory calculations are submitted, scuppers of at least 65 mm in diameter are to be fitted on flat deck on both sides, every 6 m on the axial length, with a total scuppers section of at least 140 mm<sup>2</sup> per square meter of surface to be drained.

### 3.3 Drainage from spaces below the freeboard deck or within enclosed superstructures and deckhouses on the freeboard deck

#### 3.3.1 Normal arrangement

Scuppers and sanitary discharges from spaces below the freeboard deck or from within superstructures and deckhouses on the freeboard deck fitted with doors complying with the provisions of Pt B, Ch 8, Sec 8 are to be led to:

- the bilge in the case of scuppers, or
- suitable sanitary tanks in the case of sanitary discharges.

#### 3.3.2 Alternative arrangement

The scuppers and sanitary discharges may be led overboard provided that:

- the spaces drained are located above the load waterline formed by a 5° heel, to port or starboard, at a draft corresponding to the assigned summer freeboard, and
- the pipes are fitted with efficient means of preventing water from passing inboard in accordance with Ch 1, Sec 4, [8.4].

### 3.4 Drainage of superstructures or deckhouses not fitted with efficient weathertight doors

**3.4.1** Scuppers leading from superstructures or deckhouses not fitted with doors complying with the requirements of Pt B, Ch 8, Sec 8 are to be led overboard.

### 3.5 Drainage of service spaces, intended for the carriage of vehicles or craft with fuel in their tanks for their own propulsion

#### 3.5.1 Prevention of build-up of free surfaces

In service spaces, intended for the carriage of vehicles or craft with fuel in their tanks for their own propulsion and fitted with a fixed pressure water-spraying fire-extinguishing system, the drainage arrangement is to be such as to prevent the build-up of free surfaces. If this is not possible, the adverse effect upon stability of the added weight and free surface of water are to be taken into account to the extent deemed necessary by the Society in its approval of the stability information. Refer to Pt B, Ch 3, Sec 3.

#### 3.5.2 Scupper draining

Scuppers from service spaces, intended for the carriage of motor vehicles with fuel in their tanks for their own propulsion are not to be led to machinery spaces or other places where sources of ignition may be present.

### 3.6 Arrangement of discharges

#### 3.6.1 General

- The provisions of this sub-article are applicable only to those discharges which remain open during the normal operation of a yacht. For discharges which must necessarily be closed at sea, such as gravity drains from top-side ballast tanks, a single screw-down valve operated from the deck may be accepted.
- The position of the inboard end of discharges is related to the summer load waterline when a freeboard is assigned. Otherwise the inboard end of discharges is related to the sea waterline, corresponding to the maximum load case.

#### 3.6.2 Normal arrangement

Normally, each separate discharge led through the shell plating is to be provided with:

- one automatic non-return valve fitted with positive means of closing it from a position above the bulkhead or freeboard deck, or
- one automatic non-return valve and one sluice valve controlled from above the bulkhead or freeboard deck.

#### 3.6.3 Alternative arrangement when the inboard end of the discharge pipe is above the summer waterline by more than 0,01 L

Where the vertical distance from the summer load waterline to the inboard end of the discharge pipe exceeds 0,01 L, the discharge may have two automatic non-return valves without positive means of closing, provided that:

- the inboard valve is above the level of the tropical load waterline so as to always be accessible for examination under service conditions, or
- where this is not practicable, a locally controlled sluice valve is interposed between the two automatic non-return valves.

**3.6.4 Alternative arrangement when the inboard end of the discharge pipe is above the summer waterline by more than 0,02 L**

Where the vertical distance from the summer load waterline to the inboard end of the discharge pipe exceeds 0,02 L, a single automatic non-return valve without positive means of closing may be accepted subject to the approval of the Society.

**3.6.5 Arrangement of discharges through manned machinery spaces**

Where sanitary discharges and scuppers lead overboard through the shell in way of manned machinery spaces, the fitting at the shell of a locally operated positive closing valve together with a non-return valve inboard may be accepted. The operating position of the valve will be given special consideration by the Society.

**3.6.6 Arrangement of discharges through the shell more than 450 mm below the freeboard deck or less than 600 mm above the summer load waterline**

Scupper and discharge pipes originating at any level and penetrating the shell either more than 450 millimetres below the freeboard deck or less than 600 millimetres above the summer load waterline are to be provided with a non-return valve at the shell. Unless required by [3.6.2] to [3.6.4], this valve may be omitted if the piping is of substantial thickness, as per Tab 2.

**3.6.7 Arrangement of discharges through the shell less than 450 mm below the freeboard deck and more than 600 mm above the summer load waterline**

Scupper and discharge pipes penetrating the shell less than 450 millimetres below the freeboard deck and more than 600 millimetres above the summer load waterline are not required to be provided with a non-return valve at the shell.

**3.7 Summary table of overboard discharge arrangements**

**3.7.1** The various arrangements acceptable for scuppers and sanitary overboard discharges are summarised in Fig 1.

**3.8 Valves and pipes**

**3.8.1 Materials**

- a) All shell fittings and valves are to be of steel, bronze or other ductile material. Valves of ordinary cast iron or similar material are not acceptable. All scupper and discharge pipes are to be of steel or other ductile material. Refer to Ch 1, Sec 4, [2.1]
- b) Plastic is not to be used for the portion of discharge line from the shell to the first valve

**3.8.2 Thickness of pipes**

- a) The thickness of scupper and discharge pipes led to the bilge or to draining tanks is not to be less than that required in Ch 1, Sec 4, [2.2]
- b) The thickness of scupper and discharge pipes led to the shell is not to be less than the minimum thickness given in Tab 1 and Tab 2.

Figure 1 : Overboard discharge arrangement

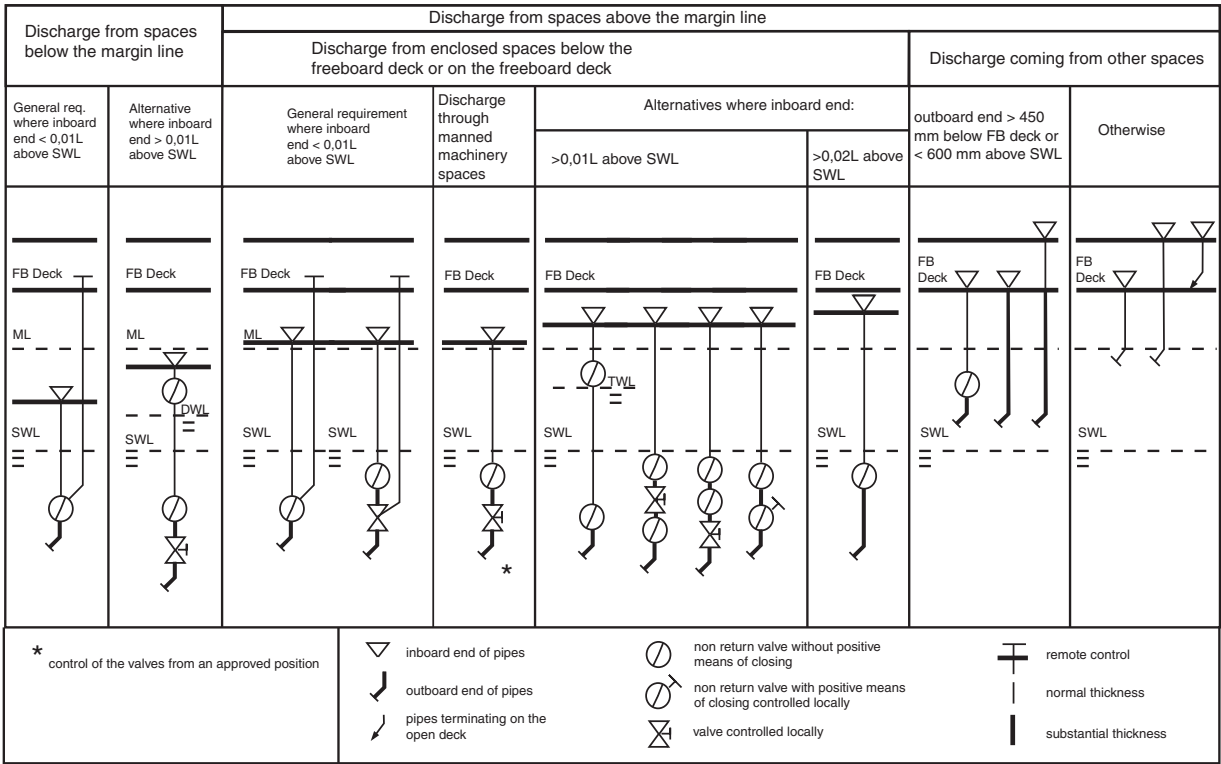


Table 1 : Thickness of scupper and discharge pipes led to the shell, according to their location

Pipe location	Applicable requirement						
	[3.6.2]	[3.6.3]	[3.6.4]	[3.6.5]	[3.6.6] with valve	[3.6.6] without valve	[3.6.7]
Between the shell and the first valve	Thickness according to Tab 2, column 1, or 0,7 times that of the shell side plating, whichever is the greater <b>(1)</b>					NA	NA
Between the first valve and the inboard end	Thickness according to Tab 2, column 2					NA	NA
Below the freeboard deck	NA					Thickness according to Tab 2, column 1	Thickness according to Tab 2, column 2
Above the freeboard deck	NA					Thickness according to Tab 2, column 2	Thickness according to Tab 2, column 2
<b>(1)</b> However, this thickness is not required to exceed that of the plating.							
<b>Note 1:</b> NA = not applicable							

Table 2 : Minimum thickness of scupper and discharge pipes led to the shell

External diameter of the pipe d, in mm	Column 1 substantial thickness, in mm	Column 2 normal thickness, in mm
d ≤ 80,0	7,00	4,50
155	9,25	4,50
180	10,00	5,00
220	12,50	5,80
230 ≤ d	12,50	6,00
<b>Note 1:</b> Intermediate sizes may be determined by interpolation.		

3.8.3 Operation of the valves

- a) Where valves are required to have positive means of closing, such means is to be readily accessible and provided with an indicator showing whether the valve is open or closed
- b) Where plastic pipes are used for sanitary discharges and scuppers, the valve at the shell is to be operated from outside the space in which the valve is located
- c) Where such plastic pipes are located below the summer waterline, the valve is to be operated from a position above the freeboard deck.

4 General provisions

4.1 Arrangement of scuppers and sanitary discharge piping

4.1.1 Overboard discharges and valve connections

- a) On steel or aluminium yacht overboard discharges are to have pipe spigots extending through the shell plate and welded to it, and are to be provided at the internal end with a flange for connection to the valve or pipe flange
- b) Valves may also be connected to the hull plating in accordance with the provisions of Ch 1, Sec 4, [8.4.3], item c).

4.1.2 Passage through tanks

- a) As a rule, scupper and sanitary discharge pipes are not to pass through fuel oil tanks
- b) Where scupper and discharge pipes pass unavoidably through fuel oil tanks and are led through the shell within the tanks, the thickness of the piping is not to be less than that given in Tab 1, column 1 (substantial thickness). It need not, however, exceed the thickness of the adjacent Rule shell plating
- c) Scupper and sanitary discharge pipes are normally not to pass through fresh and drinking water tanks.

4.1.3 Passage through watertight bulkheads or decks

- a) The intactness of machinery space bulkheads and of tunnel plating required to be of watertight construction is not to be impaired by the fitting of scuppers discharging to machinery spaces or tunnels from adjacent compartments which are situated below the freeboard deck
- b) Such scuppers may, however, be led into a strongly constructed scupper drain tank situated in the machinery space or tunnel, but close to the above-mentioned adjacent compartments and drained by means of a suction of appropriate size led from the main bilge line through a screw-down non-return valve.

4.1.4 Discharge from galleys and their stores

Discharges from galleys and their stores, when these spaces form separate rooms, are to be kept separate from other discharges and be drained overboard or in separate drainage tanks; alternatively, discharges are to be provided with adequate devices against odours and overflow.

4.1.5 Discharge from aft spaces

Where spaces located aft of the aft peak bulkhead not intended to be used as tanks are drained by means of scuppers discharging to the shaft tunnel, self closing cocks are to be fitted, situated in well lighted and visible positions.

4.1.6 Scupper tank

- a) The scupper tank air pipe is to be led to above the freeboard deck
- b) Provision is to be made to ascertain the level of water in the scupper tank.