Rules for the Classification of Yachts

Effective from 1 January 2025

Part E

Service Notations

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EXPLANATORY NOTE TO PART E

1. Reference edition

The reference edition for Part E is the Rules for Yachts 2024 edition, which is effective from 1 July 2024.

2. Amendments after the reference edition

2.1 Rules for Yachts 2024 has been completely rewritten and reorganised.

2.2 Except in particular cases, the Rules are updated and published annually.

3. Effective date of the requirements

3.1 All requirements in which new or amended provisions with respect to those contained in the reference edition have been introduced are followed by a date shown in brackets.

The date shown in brackets is the effective date of entry into force of the requirements as amended by the last updating. The effective date of all those requirements not followed by any date shown in brackets is that of the reference edition.

3.2 Item 6 below provides a summary of the technical changes from the preceding edition. In general, this list does not include those items to which only editorial changes have been made not affecting the effective date of the requirements contained therein.

4. Rule Variations and Corrigenda

Until the next edition of the Rules is published, Rule Variations and/or corrigenda, as necessary, will be published on the Tasneef web site (www.Tasneef.ae). Except in particular cases, paper copies of Rule Variations or corrigenda are not issued.

5. Rule subdivision and cross-references

5.1 Rule subdivision

The Rules are subdivided into six parts, from A to F.

Part A: Classification and Surveys

Part B: Hull and Stability

Part C: Machinery, Systems and Fire Protection

Part D: Materials and Welding

Part E: Service Notations

Part F: Additional Class Notations

Each Part consists of:

- Chapters
- Sections and possible Appendices
- Articles
- Sub-articles
- Requirements

Figures (abbr. Fig) and Tables (abbr. Tab) are numbered in ascending order within each Section or Appendix.

5.2 Cross-references

Examples: Pt A, Ch 1, Sec 1, [3.2.1]or Pt A, Ch 1, App 1, [3.2.1]

- Pt A means Part A

The part is indicated when it is different from the part in which the cross-reference appears. Otherwise, it is not indicated.

- Ch 1 means Chapter 1

The Chapter is indicated when it is different from the chapter in which the cross-reference appears. Otherwise, it is not indicated.

- Sec 1 means Section 1 (or App 1 means Appendix 1)

The Section (or Appendix) is indicated when it is different from the Section (or Appendix) in which the cross-reference appears. Otherwise, it is not indicated.

- [3.2.1] refers to requirement 1, within sub-article 2 of article 3.

Cross-references to an entire Part or Chapter are not abbreviated as indicated in the following examples:

- Part A for a cross-reference to Part A
- Part A, Chapter 1 for a cross-reference to Chapter 1 of Part A.

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Part E
Service Notations

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Chapter 1

Pleasure > 500 GT

SECTION 1 ALTERNATIVES, RELAXATIONS OR ADDITIONAL CONSIDERATIONS FOR PLEASURE YACHTS OF MORE THAN 500 GT

1 General

1.1

1.1.1 The Society may allow in general relaxations to the requirements of part A, B, C, D and F for yachts of more than 500 GT when the yacht is pleasure.

Chapter 2

Pleasure > 24m LLL < 500GT

SECTION 1 HULL & STABILITY - ALTERNATIVES, RELAXATIONS, ADDITIONAL CONSIDERATIONS TO THE REQUIREMENTS SET IN PT B, CH 1, SEC 1 AND PT B, CH 1, APP 1

1 General

1.1 Stern and side doors below the weather deck and compartment below the freeboard deck to be used for recreational activities or other services having access openings in the hull

1.1.1 With reference to [5.1.5] and [5.4.1] Pt B, ch.1 sec.1 and Pt B, Ch.1 App.1 [1.1.4] and [1.4.1] as an alternative what below may be applied.

The means of closure of the shell opening is to be provided with proper gasket and adeguate securing devices.

The characteristic of the means of closure depends on the distance of the lower edge of the closure from the maximum waterline.

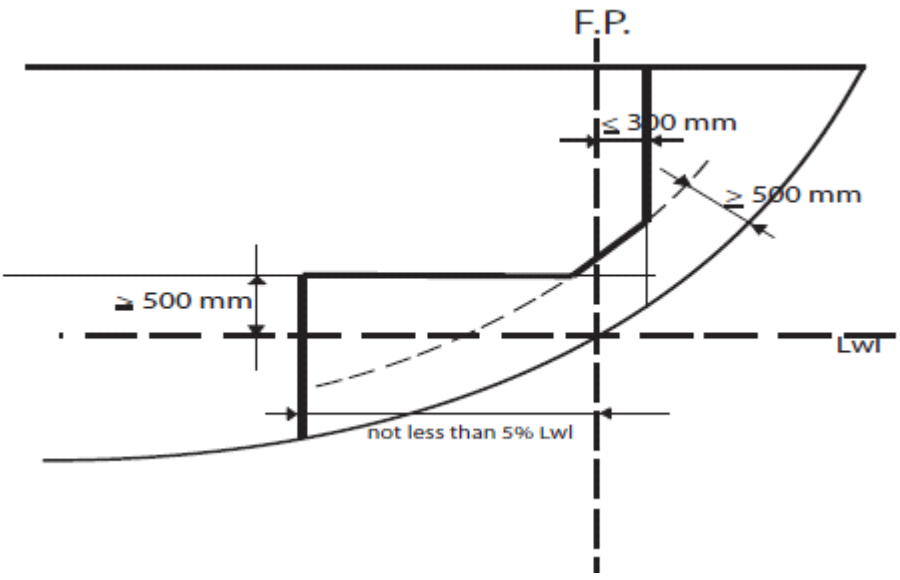
If such distance is equal to or more than 500 mm, or when the distance from the maximum waterline to the lower edge of the means of closure is less than 500 mm, but no essential equipment (The emergency bilge and/or the emergency fire pumps may be fitted there if the compartment does not contain petrol and have an access independent from the engine room and the side door) is installed in the compartment, and all the doors leading to internal compartments where essential equipment is installed are to be provided with watertight means of closure, the side/shell door has to pass only a water jet test as described in Pt B, Ch 1, App 1, [1.4.1] d). The lower part of each of these doors is, in general, to be above the deepest sea going condition.

1.2 Collision Bulkhead

1.2.1 As an alternative to Pt B, Ch 1, App 1, [1.2.1] a) what below may be applied:

a) the upper part of the bulkhead may be fitted at a distance less than 5%L from the forward perpendicular (but in any case not more than 300 mm ahead of the forward perpendicular). See Fig 1.

Figure 1



1.3 Ventilators

1.3.1 With reference to Pt B, Ch 1, Sec 1, [5.10] for yacht of less than 300 GT the position of the air intake may be accepted below the weather deck, provided that the following requirements are satisfied:

a) the minimum down flooding angle meets the minimum of the stability criteria

b) means are provided to the satisfaction of Tasneef in order to guarantee the hull integrity.

c) a bilge level alarm associated with additional automatic bilge pumps is to be provided inside the compartments where such ducts are fitted

d) the openings are fitted, as far as practicable, close to the weather deck and in any case are as small as possible.

1.4 Bulwark

1.4.1 With reference to [5.12.1] Pt B Ch 1 Sec 1 the minimum bulwark height may be reduced to 600mm..

1.4.2 The use of clips instead of continuous support is acceptable provided that the clips are spaces not more than 300mm. Only if polycarbonate as glazing material the clips may perforate the glazing, the details of such penetrations to be sent for examination and approval. The distance of the hole to the side of the glazing to be at least equal to the diameter of the hole. The clips have to cover the glazing for at least 2 times the relevant glazing thickness. The clips details have to be sent for examination.

1.5 Freeing ports

1.5.1 The area of freeing ports openings calculated according to [5.13.1] using A=0,07l even in case of l<20m. Also the value of FPreq may be divided by 2.

2 Alternative, relaxations, additional considerations to the requirements set in Pt B, Ch 6, Sec 1

2.1

2.1.1 With reference to Pt B, Ch 6, Sec 1, [2.4.6] b) what above may be applied as an alternative:

a) stability booklet as photocopy of the prototype (y), only updated for the general description (vessel's name, port of registry, flag, etc).

SECTION 2 MACHINERY - ALTERNATIVES, RELAXATIONS, ADDITIONAL CONSIDERATIONS TO THE REQUIREMENTS SET IN PT C, CH 1

1 Diesel Engine

1.1 Pleasure Duty engines

1.1.1 *(1/1/2025)*

With reference to Pt C, Ch 1, Sec 2, [1.6], in addition to medium and light duty, the pleasure duty as defined below may be assigned. The same relaxations foreseen for light and medium duty apply also to pleasure duty. The parameters for pleasure duty are:

- 500 <= O_{AMAX} <= 1000
- 50<= O_{PMAX} <=100
- Ic >= 0.2
- O_{AMIN} = 500

2 Gears

2.1 Pleasure Duty gears

2.1.1 *(1/1/2025)*

With reference to Pt C, Ch 1, Sec 6, [1.3], in addition to medium and light duty, the pleasure duty as defined below may be assigned.The same relaxations foreseen for light and medium duty apply also to pleasure duty. The parameters for pleasure duty are those in [1.1.1] and with reference to Pt C Ch 1 Sec 6 Tab.2 the safety coefficient to be used are:

- K_A = 1.1
- S_H = 1,0
- S_F = 1,1
- L_{h10a23} (following ISO 281-1) >= 3000h

3 Propeller

3.1 Drawing approval

3.1.1 With reference to Pt C, Ch 1, Sec 8, [1.3], for propeller with diameter of less than 1.5m the approval of the drawing is not required.

4 Piping

4.1 Use of welded and threaded metallic joints

4.1.1 With reference to Pt C, Ch 1, Sec 10, Tab 15, use of welded and threaded metallic joints in piping systems.

For yachts oh less than 300GT sleeve tapered threaded joint are acceptable on pipes of class II and III with outside diameter of not more than 60mm if conveying fluid having flash point of more than 60°C.

For yachts oh less than 300GT sleeve parallel threaded joint are acceptable on pipes of class III with outside diameter of not more than 60mm if conveying fluid having flash point of more than 60°C.

4.2 Flexible hoses

4.2.1 The requirements Pt C, Ch 1, Sec 10, [2] may be applied as far as it is practicable and at least what required in Tab 1 is to be applied. In Tab 1 are reported the minimum requirements applicable to piping for each system depending on the location.

4.3 Bilge system

4.3.1 With reference to Pt C, Ch.1, Sec.10 [6.5.1] Number and arrangement of pumps, the second pump and suction may be portable.

4.3.2 As an alternative to the portable emergency pump a suitable number of submergible pumps one of each watertight compartment may be accepted.

4.3.3 The total number of pumps for bilge and fire system may be 2 provided that the two pumps are fixed independently powered, located in two different spaces, point c) above is satisfied and the requirement of both the systems are satisfied.

4.3.4 As an alternative to Pt C, Ch.1, Sec.10 [6.5.4] what below may be applied:

Capacity of pumps

a) The capacity of each pump or group of pumps is not tobe less than:

   $Q = 0{,}0058\ d^2$where:

   Q : Minimum capacity of each pump or group of pumps, in m^3/h

   d : Internal diameter, in mm, of the bilge main as defined in [2.3.5].

b) If the capacity of one of the pumps or one of the groups of pumps is less than the Rule capacity, the deficiency may be compensated by an excess capacity of the other pump or group of pumps; as a rule, such deficiency is not permitted to exceed 30% of the Rule capacity.

c) Where an ejector is used in lieu of a driven pump, its suction capacity is not to be less than the required capacity of the pump it replaces.

Table 1

Requirements for each service and locations (1)		
System	Machinery space or other spaces with fire risk	Spaces without fire risk
Fuel oil system	Flexible hoses shall comply with the following requirements: • flexible hoses can be accepted for the whole length of the system, in compliance with Pt C, Ch 1, Sec 10. [2.5]: they shall be type approved and fire resistant in compliance with ISO 15540/15541 • For yachts of not more than 300 GT, flexible hoses can be accepted for the whole length of the system, fire resistant in compliance with ISO 15540/15541 and certified suitable for use by the manufacturer in compliance with national or international recognized standards. End connections of flexible hoses different from the crimped type may be accepted, provided that in any case, the end attachments are to Tasneef satisfaction, and hoses complete with end connections are to be tested to verify fire resistance.	Flexible hoses shall comply with the following requirements: • flexible hoses can be accepted for the whole length of the system, in compliance with Pt C, Ch 1, Sec 10, [2.5]: they shall be type approved and fire resistant in compliance with ISO 15540/15541 • For yachts of not more than 300 GT, flexible hoses can be accepted for the whole length of the system and fire resistant A1/A2 in compliance with ISO 7840
Hydraulic oil system	Flexible hoses can be used, whatever the gross tonnage of the yacht, according to the following requirements. • flexible hoses used for non essential services are not required to be fire resistant, but they are to be certified suitable for use by the manufacturer in compliance with national or international recognized standards • flexible hoses used for essential services (services whose failure can impair the safety of navigation); flexible hoses in compliance with Pt C, Ch 1, Sec 10, [2.5] can be accepted: they shall be type approved and fire resistant in compliance with ISO 15540/15541.	Flexible hoses can be used, whatever the gross tonnage of the yacht, according to the following requirements. Flexible hoses are not required to be fire resistant, but they are to be certified suitable for use by the manufacturer in compliance with national or international recognized standards.

Requirements for each service and locations (1)		
System	Machinery space or other spaces with fire risk	Spaces without fire risk
Fixed water fire extinguishing system	Flexible hoses shall comply with the following requirements: • the requirements of Pt B, Ch 1, Sec 1, [5.3] are to be complied with • flexible hoses can be accepted for the whole length of the system, in compliance with Pt C, Ch 1, Sec 10. [2.5]: they shall be type approved and fire resistant in compliance with ISO 15540/15541 • for yachts of not more than 300 GT, flexible hoses can be accepted for the whole length of the system, fire resistant in compliance with ISO 15540/15541 and certified suitable for use by the manufacturer in compliance with national or international recognized standards. End connections of flexible hoses different from the crimped type may be accepted, provided that in any case, the end attachments are to Tasneef satisfaction, and hoses complete with end connections are to be tested to verify fire resistance.	Flexible hoses shall comply with the following requirements: • the requirements of Pt B, Ch 1, Sec 1, [5.3] are to be complied with • flexible hoses can be accepted for the whole length of the system, in compliance with Pt C, Ch 1, Sec 10, [2.5]: they shall be type approved and fire resistant in compliance with ISO 15540/15541 • for yachts of not more than 300 GT, flexible hoses can be accepted for the whole length of the system, fire resistant and certified suitable for use by the manufacturer in compliance with national or international recognized standards. Fire resistance shall be ascertained by a fire test in compliance with ISO 7840 (or equivalent standard) for a period of not less than 10 min. End connections of flexible hoses different from the crimped type may be accepted, provided that in any case, the end attachments are to Tasneef satisfaction, and hoses complete with end connections are to be tested to verify fire resistance.
Bilge system	Flexible hoses shall comply with the following requirements: • the requirements of Pt B, Ch 1, Sec 1, [5.3] are to be complied with • flexible hoses can be accepted for the whole length of the system, in compliance with Pt C, Ch 1, Sec 10. [2.5]: they shall be type approved and fire resistant in compliance with ISO 15540/15541 • for yachts of not more than 300 GT, flexible hoses can be accepted for the whole length of the system, fire resistant in compliance with ISO 15540/15541 and certified suitable for use by the manufacturer in compliance with national or international recognized standards. End connections of flexible hoses different from the crimped type may be accepted, provided that in any case, the end attachments are to Tasneef satisfaction, and hoses complete with end connections are to be tested to verify fire resistance • reference is to be made to (2).	Flexible hoses shall comply with the following requirements: • the requirements of Pt B, Ch 1, Sec 1, [5.3] are to be complied with • flexible hoses can be accepted for the whole length of the system, in compliance with Pt C, Ch 1, Sec 10, [2.5]: they shall be type approved and fire resistant in compliance with ISO 15540/15541 • for yachts of not more than 300 GT, flexible hoses can be accepted made of material suitable for bilge use and capable of maintaining their integrity at a maximum working temperature of not less than 100 °C

Requirements for each service and locations (1)		
System	Machinery space or other spaces with fire risk	Spaces without fire risk
Cooling system	Flexible hoses shall comply with the following requirements: • the requirements of Pt B, Ch 1, Sec 1, [5.3] are to be complied with • flexible hoses can be accepted for the whole length of the system, in compliance with Pt C, Ch 1, Sec 10. [2.5]: they shall be type approved and fire resistant in compliance with ISO 15540/15541 • for yachts of not more than 300 GT, with the exclusion of the part of piping indicated in Pt B, Ch 1, Sec 1, [5.3.2], flexible hoses in compliance with ISO 13363 or equivalent, and certified suitable for use by the manufacturer in compliance with national or international recognized standards can be accepted • reference is to be made to (2).	Flexible hoses shall comply with the following requirements: • the requirements of Pt B, Ch 1, Sec 1, [5.3] are to be complied with • flexible hoses can be accepted for the whole length of the system, in compliance with Pt C, Ch 1, Sec 10, [2.5]: they shall be type approved and fire resistant in compliance with ISO 15540/15541 • for yachts of not more than 300 GT, with the exclusion of the part of piping indicated in Pt B, Ch 1, Sec 1, [5.3.2], flexible hoses in compliance with ISO 13363 or equivalent, and certified suitable for use by the manufacturer in compliance with national or international recognized standards can be accepted • reference is to be made to (2).
Scupper pipe	Flexible hoses shall comply with the following requirements: • the requirements of Pt B, Ch 1, Sec 1, [5.3] are to be complied with. In any case, they shall be certified suitable for use by the manufacturer • flexible hoses can be accepted for the whole length of the system, in compliance with Pt C, Ch 1, Sec 10. [2.5]: they shall be type approved and fire resistant in compliance with ISO 15540/15541 • for yachts of not more than 300 GT, with the exclusion of the part of piping indicated in Pt B, Ch 1, Sec 1, [5.3.2], flexible hoses made of material suitable for the service and capable of maintaining their integrity at a maximum working temperature of not less than 100 °C can be accepted • reference is to be made to (2).	Flexible hoses shall comply with the following requirements: • the requirements of Pt B, Ch 1, Sec 1, [5.3] are to be complied with • flexible hoses can be accepted for the whole length of the system, in compliance with Pt C, Ch 1, Sec 10, [2.5]: they shall be type approved and fire resistant in compliance with ISO 15540/15541 • for yachts of not more than 300 GT, with the exclusion of the part of piping indicated in Pt B, Ch 1, Sec 1, [5.3.2], flexible hoses built in PVC reinforced with embedded steel wire and an additional fiber reinforcement or equivalent can be accepted. In any case, the flexible hose is to be certified suitable for use by the manufacturer • reference is to be made to (2).
Exhaust system	The requirements of Pt B, Ch 1, Sec 1, [5.3.3] are to be complied with	The requirements of Pt B, Ch 1, Sec 1, [5.3.3] are to be complied with

Requirements for each service and locations (1)		
System	Machinery space or other spaces with fire risk	Spaces without fire risk
Drinking water, black water and drainage of air-conditioning systems	Metallic hoses, flexible hoses. Flexible hoses shall comply with the following requirements: • the requirements of Pt B, Ch 1, Sec 1, [5.3] are to be complied with. • for piping not connected to the sea through the side of the hull, flexible hoses can be accepted, certified suitable for the service by the manufacturer in compliance with national or international recognized standards. For piping connected to the sea through the side of the hull, flexible hoses certified fire resistant in compliance with ISO 15540/15541 can be accepted, provided that they are certified suitable for the service by the manufacturer • for yachts of not more than 300 GT, the requirements for the scuppers are applicable to piping connected to the sea through the side of the hull. In any case, the hoses are to be certified suitable for use by the manufacturer. • reference is to be made to (2).	Metallic hoses, flexible hoses. Flexible hoses shall comply with the following requirements: • the requirements of Pt B, Ch 1, Sec 1, [5.3] are to be complied with • for piping not connected to the sea through the side of the hull, flexible hoses can be accepted, certified suitable for the service by the manufacturer in compliance with national or international recognized standards. • for yachts of not more than 300 GT, the requirements for the scuppers are applicable to piping connected to the sea through the side of the hull. • in any case, the hoses are to be certified suitable for use by the manufacturer. Reference is to be made to (2).

(1) End connections different from the crimped type may be adopted only for Class III piping

(2)

a) All systems provided with external discharge through the side of the hull are to be fitted with a metallic valve on the side of the hull.

b) The above valve may be omitted provided that:

- for non-sailing yachts, the side discharge is positioned at a point 300 mm above the maximum waterline or a point corresponding to an angle of heel more than 7°, whichever is greater;
- for sailing yachts, the sea discharge is positioned at a point corresponding to an angle more than 30° or more than the angle corresponding to the intersection of the deck with the side, whichever is the lesser;
- for non-sailing yachts, a metallic branch or a branch of material equivalent to that of the hull (i.e. GRP) is fitted from the passage through the hull at a point 300 mm above the maximum waterline or a point corresponding to an angle of heel of 7°, whichever is the greater.

c) In any case, an adequate non-return valve is to be fitted where it is ascertained that under operating conditions the yacht may assume an angle of heel for which the ingress of water cannot be avoided.

d) Where joints are provided between the metallic branch and non-metallic pipe, they are to be adequate for the purpose. If joints with clamps are fitted, they are to be made of stainless steel. At least two clamps are to be fitted for each joint end. In general, the clamps are to be no less than 12 mm in width and are not to be dependent on spring tension to remain fastened.

4.3.5 As an alternative to Pt C, Ch 1, Sec 10, [6.6.1] what below may be applied:

Bilge main line

The diameter of the bilge main is to be calculated according to the following formula:

$d = 0,085L + 25$

where:

d : Internal diameter of the bilge main, in mm, to be assumed not less than 32 mm

L : Rule length of the yacht, in m.

4.3.6 As an alternative to Pt C, Ch 1, Sec 10, [6.6.3] what below may be applied:

Branch bilge suction pipes

The internal diameter, in mm, of pipes situated between distribution boxes and suctions in holds and machinery spaces is not to be less than the diameter given by the following formula:

$d = 0,085L_1 + 25$

where:

L_1 : Length of the compartment, in m.

4.4 Scuppers and Sanitary discharges

4.4.1 What required in Pt C, Ch 1, Sec 10, [8] may be applied as far as it is practicable and taking into account Tab 1.

4.5 Air pipes, sounding and overflow pipes

4.5.1 As an alternative to Pt C, Ch 1, Sec 10, [9.1.3]e) what follows may be applied.

Air pipes fitted on the side of the vessel may be accepted provided that the pipe is raised to a point close to the main deck. In any case, means are to be adopted to prevent oil spillage.

4.6 Fuel oil System

4.6.1 What required in Pt C, Ch 1, Sec 10, [11] may be applied as far as it is practicable and taking into account Tab 1.

4.7 Lubricating oil System

4.7.1 What required in Pt C, Ch 1, Sec 10, [12] may be applied as far as it is practicable and taking into account Tab 1.

4.8 Hydraulic oil System

4.8.1 What required in Pt C, Ch 1, Sec 10, [13] may be applied as far as it is practicable and taking into account Tab 1.

4.9 Exhaust Gas System

4.9.1 What required in Pt C, Ch 1, Sec 10, [15] may be applied as far as it is practicable and taking into account Tab 1.

4.10 Certification, Inspection and Testing on Piping

4.10.1 What required in Pt C, Ch 1, Sec 10, [17] may be applied as far as it is practicable and relaxations may be agreed with the Society.

5 Steering System

5.1 Control of the steering gear

5.1.1 As an alternative to Pt C, Ch 1, Sec 11, [2.2.2]. Control of the main steering gear may be according to what follows.

a) Control of the main steering gear is to be provided on the navigation bridge.

b) Where the main steering gear is arranged so that the main steering gear comprises two or more power units, two independent control systems are to be provided, both operable from the navigation bridge. This does not require duplication of the steering wheel or steering lever.

5.1.2 As an alternative to Pt C, Ch 1, Sec 11, [2.2.3]. Control of the main steering gear may be according to what follows.

a) Control of the auxiliary steering gear is to be provided in the steering gear compartment or at the local steering control position.

b) If the auxiliary steering gear is power operated, its control system is also to be independent of that of the main steering gear.

5.2 Rudder angle indication

5.2.1 As an alternative to Pt C, Ch 1, Sec 11, [2.7.4]. The angular position of the rudder is to be:

a) indicated on the navigating bridge, if the main steering gear is power operated

b) recognisable in the steering gear compartment, as applicable, or at the local steering control station.

6 Plastic pipes

6.1 General

6.1.1 As an alternative to Pt C, Ch 1, App 3 the requirements set in [2] may be applied.

SECTION 3 ELECTRICAL INSTALLATION AND AUTOMATION SYSTEMS - ALTERNATIVES, RELAXATIONS AND ADDITIONAL CONSIDERATIONS TO REQUIREMENTS SET IN PT C, CH 2 AND PT C, CH 3

1 General

1.1 Application

1.1.1 In addition to Pt C, Ch 2, App 1 and Pt C, Ch 3, App1, the following maybe be applied.

2 Electrical Installations

2.1 General Design Requirements (Section 2)

2.1.1 With reference to Pt C, Ch 2, Sec 2, [1.7] and Tab 5 are not mandatory. As an alternative the following may be applied: enclosures for electrical equipment are to be mechanically strong and rigid, and mounted so that the equipment will not be affected by the distortion, vibration or movement of the vessel's structure that occur during normal operation of the vessel.

2.2 System Design (Section 3)

2.2.1 With reference to Pt C, Ch 2, Sec 3, [3.4.1], [3.9.4] are not mandatory.

2.2.2 With reference to Pt C, Ch 2, Sec 3, [6.5], as an alternative what at [2.2.3] may be applied.

2.2.3 The selection, arrangement and characteristics of the circuit protections are to be such that the maximum continuity of service to healthy circuits under fault conditions are ensured.

This may be achieved through selective operations of the various protective devices, the coordination between the electrical characteristics of the protected circuit or apparatus and the tripping characteristics of the protective devices.

3 Automation Systems

3.1 Application

3.1.1 Pt C, Ch 3, Sec 2, [1.1.6] is not mandatory.

3.1.2 *(1/1/2025)*

Pt C, Ch 3, Sec 3 and Appendix 3 are applicable as far as it is practicable and in particular for yachts of less than 300GT in general for the other Sections of Chapter 3 specific relaxations and alternative considerations may be done.

3.1.3 *(1/1/2025)*

With reference to [3.1.1] and [3.1.2], the Society reserves the right to apply Pt C, Ch 3 (as a whole or partially) in the case of non-conventional design or if it is deemed necessary, for the safety of the yacht, the evaluation of the system, equipment or components. A set of documents to be sent to the Society have to be agreed accordingly at the first stage of a new project.

SECTION 4 FIRE PROTECTION - ALTERNATIVES , RELAXATIONS, ADDITIONAL CONSIDERATIONS TO THE REQUIREMENTS SET IN PT C, CH 4

1 General

1.1 Application

1.1.1 This Alternatives, Relaxations, Additional consideration to Pt C, Ch 4, Sec 1 to Sec 9 are in addition to those of Pt C, Ch 4, App 1.

2 Fire containment

2.1 Class divisions

2.1.1 With reference to Pt C, Ch 4, Sec 3 as an alternative to [3.1.2] to [3.1.5] and [2.1.1] of Pt C, Ch.4, App 1 what below may be applied.

For yachts exceeding 300 GT built of composite material and alluminium, category A machinery spaces are to be totally enclosed by B-15 class boundaries.

For the foregoing yachts, galleys are to be totally enclosed by B-0 class boundaries (bulkheads, side shell and deck heads). Windows within the exterior hull or superstructure within this boundary are not expected to meet "B-0" standards. It is not necessary to extend the fire insulation below the minimum waterline.

For yachts of less than 300GT what above is not mandatory.

2.1.2 *(1/1/2025)*

Pt C, Ch 4, Sec 3, [3.2.3] is not mandatory.

2.1.3 With reference to Pt C, Ch 4, Sec 3 as an alternative to [4.1.2] and [2.2.1] of Pt C, Ch 4, App 1 what below may be applied.

For yachts exceeding 300 gross tonnage, ventilation ducts serving category A machinery spaces, galleys, spaces containing vehicles or craft with fuel in their tanks, or lockers containing fuel tanks are not to cross accommodation spaces, service spaces or control stations unless the trunking is constructed of steel (minimum thickness 4 mm) or the walls are equivalent to B-15 class divisions for machinery spaces and B-0 class divisions for galleys to a point at least 5 metres from the space concerned.

Where the trunking passes from the machinery space or galley into the accommodation, automatic fire dampers are to be provided in the deck or bulkhead within the accommodation.

The automatic fire dampers are also to be manually operable from outside the machinery space or galley.

The requirements above also apply to ventilation ducts for accommodation spaces passing within category A machinery spaces.

For yachts of less than 300GT what above is not mandatory.

2.1.4 With reference to Pt C, Ch 4, Sec 3, [4.1.9] the above means may be avoided for openings located at least 1m above the freeboard deck and 0,5m above the 1st tier superstructure deck or above.

3 Protection of spaces containing vehicles or craft with fuel in their tanks or lockers storing such fuels

3.1 General

3.1.1 With reference to Pt C, Ch 4, Sec 6 as an alternative to [2] what below may be applied.

For yachts of less than 300 GT, what required [2.1.1] as far as the ventilation requirement may be replaced from what below:

a) The surface of the said openings shall not be less than the area of the ventilation openings, calculated in agreement with ISO 11105, increased by 20%..

   In any case, the natural air flow is to be such as to extract any gasoline vapour during normal running conditions, and

b) An explosion proof extractor capable of grant at least 6 air changes per hour and be activated in case of activation of the fixed flammable gas detector alarm, is to be provided; the indication of ventilation rate reduction required, in this case can be omitted.

When the extractor is not activated automatically, clear instructions shall be affixed for the crew, for the activation of the extractor.

For the items not explicitly required in this subparagraph, the requirements of [2.1.1] are to be deemed applicable.

4 Fire applications

4.1 Application

4.1.1 With reference to Pt C, Ch 4, Sec 8, [2.1] and [2.3] and Pt C, Ch 4, App 1, [3.1] for yachts less than 300 GT, one of the two requested pumps may be a portable motor pump, to be stored in a compartment different from the one where the other pump is fitted. Such portable motor pump is to be equipped with a suction hose. The suction hose is to be built so that it will not collapse because of the low pressure on the suction side.

4.1.2 With reference to Pt C, Ch 4, Sec 8 as an alternative to [2.3.1] what below may be applied.

Table 1

Vessel length ($L_{H)}$	Minimum capacity
Below 20 m	5,5 m^3/h
At least 20 m but less than 30 m	11,0 m^3/h
30 m or greater	14 m^3/h

In addition when the pump is discharging at full capacity through two adjacent fire hydrants, is to be capable of maintaining a water pressure of 0,1 N/mm^2 at any hydrant.

4.1.3 With reference to Pt C, Ch 4, Sec 8 as an alternative to [2.3.5] through over sea suction may be acceptable.

4.1.4 With reference to Pt C, Ch 4, Sec 8, [2.4.7]. The easy accessible valve to insolate the fire main in ER is suggested but is not mandatory.

APPENDIX 1 PLASTIC PIPES AND OTHER NON-METALLIC PIPES

1 General

1.1 Application

1.1.1 These requirements are applicable to all piping systems with parts made of rigid plastic and other non-metallic material.

1.2 Use of plastic pipes

1.2.1 Plastic pipes will be used for the different services under the conditions given in this chapter.

Plastic pipes are used in the following systems installed in machinery spaces or in other spaces with fire risk. They shall have adequate fire resistance:

- Fuel oil system and oil lubricating system;
- Fuel oil tank vents and oil lubricating tank vents;
- Fixed water fire extinguishing system;
- Cooling system;
- Bilge system;
- Scupper pipe.

1.2.2 All systems provided with external discharge through the side of the hull are to be fitted with a suitable metallic valve on the side of the hull.

The said valve may be omitted provided that:

- for non-sailing yachts, the side discharge is positioned at a point above 300 mm of height from the full load waterline or a point corresponding to full load waterline at an angle of heel of not more than 7°, whichever is greater;
- for sailing yachts, the sea discharge is positioned at a point corresponding to full load waterline, at an angle of heel of not more than 30° or at the angle of heel corresponding to the intersection of the deck with the side, whichever is the lesser;
- for non-sailing yachts, a metallic branch or a branch of material equivalent to that of the hull (i.e. GRP) is fitted between a point above 300 mm of height from the full load waterline or a point corresponding to full load waterline at an angle of heel of not more than 7°, whichever is greater.

In any case, an adequate metallic valve is to be fitted on the shell where it is ascertained that under operating conditions the yacht may assume an angle of heel for which the ingress of water cannot be avoided.

1.2.3 Plastic pipes and fittings are to be accepted, in general, for class II and III piping systems.

1.3 Definitions

1.3.1 Plastic

Plastic includes both thermoplastic and thermosetting plastic materials with or without reinforcement, such as PVC and FRP (reinforced plastics pipes).

1.3.2 Piping systems

Piping systems include the pipes, fittings, joints, and any internal or external liners, coverings and coatings required to comply with the performance criteria.

1.3.3 Joints

Joints include all pipe assembling devices or methods, such as adhesive bonding, laminating, welding, etc.

1.3.4 Fittings

Fittings include bends, elbows, fabricated branch pieces, etc. made of plastic materials.

1.3.5 Nominal pressure

Nominal pressure is the maximum permissible working pressure.

1.3.6 Design pressure

Design pressure is the maximum working pressure which is expected under operation conditions or the highest set pressure of any safety valve or pressure relief device on the system, if fitted.

2 Design of plastic piping systems

2.1 General

2.1.1 Specification

The specification of the plastic is to comply with a recognised national or international standard approved by Tasneef. In addition, the requirements stated below are to be complied with.

2.2 Strength

2.2.1 General

a) The piping is to have sufficient strength to take account of the most severe concomitant conditions of pressure, temperature, the weight of the piping itself and any static and dynamic loads imposed by the design or environment.

b) The maximum permissible working pressure is to be specified with due regard for the maximum possible working temperature in accordance with the Manufacturer's recommendations.

2.2.2 Permissible pressure

Piping systems are to be designed for a nominal pressure determined from the following conditions:

a) Internal pressure

The hydrostatic bursting pressure is to be not less than five times the design pressure for thermostatic pipes and thermoplastic pipes and four times the design pressure for reinforced thermosetting resin pipes. The wall thickness for plain-end thermoplastic pipes is not to be less than schedule 40 and the wall thickness for threaded thermoplastic pipes is not to be less than schedule 80.

The wall thickness of reinforced thermosetting resin pipes is to be in accordance with the Manufacturer's standard based on burst test data.

b) External pressure (to be considered for any installation subject to vacuum conditions inside the pipe or a head of liquid acting on the outside of the pipe)

The nominal external pressure is not to exceed $P_{col}/3$, where:

P_{col} : Collapse pressure

Note 1: The external pressure is the sum of the vacuum inside the pipe and the static pressure head outside the pipe.

c) The collapse pressure is not to be less than 0,3 MPa.

2.2.3 Permissible temperature

a) In general, plastic pipes are not to be used for media with a temperature above 60°C or below 0°C, unless satisfactory justification is provided to Tasneef.

b) The permissible working temperature range depends on the working pressure and is to be in accordance with the Manufacturer's recommendations.

c) The maximum permissible working temperature is to be at least 20°C lower than the minimum heat distortion temperature of the pipe material, determined according to ISO 75 method A or equivalent.

d) The minimum heat distortion temperature is not to be less than 80°C.

2.3 Pipe and fitting connections

2.3.1 General

a) The strength of connections is not to be less than that of the piping system in which they are installed.

b) Pipes and fittings may be assembled using adhesive-bonded, welded, flanged or other joints.

c) When used for joint assembly, adhesives are to be suitable for providing a permanent seal between the pipes and fittings throughout the temperature and pressure range of the intended application.

d) Tightening of joints, where required, is to be performed in accordance with the Manufacturer's instructions.

2.4 Electrical conductivity

2.4.1

a) Piping systems conveying fluids with a conductivity less than 1000 pS/m (1pS/m=10^{-12} siemens per metre), such as refined products and distillates, are to be made of conductive pipes.

b) Regardless of the fluid to be conveyed, plastic pipes passing through hazardous areas are to be electrically conductive.

c) Where electrical conductivity is to be ensured, the resistance of the pipes and fittings is not to exceed:

1 x 10^5 Ohm/m.

d) It is preferred that pipes and fittings are homogeneously conductive. Where pipes and fittings are not homogeneously conductive, conductive layers are to be provided, suitably protected against the possibility of spark damage to the pipe wall.

e) Satisfactory earthing is to be provided.

3 Arrangement and installation of plastic pipes

3.1 General

3.1.1 Plastic pipes and fittings are to be installed in accordance with the manufacturer's guidelines.

3.1.2 Pipes are to be protected from mechanical damage where necessary.

3.2 Supporting of the pipes

3.2.1

a) Selection and spacing of pipe supports in shipboard systems are to be determined as a function of allowable stresses and maximum deflection criteria.

b) Support spacing is not to be greater than the pipe Manufacturer's recommended spacing.

3.2.2 Each support is to evenly distribute the load of the pipe and its content over the full width of the support. Measures are to be taken to minimise wear of the pipes where they are in contact with the supports.

3.2.3 Heavy components in the piping system such as valves and expansion joints are to be independently supported.

3.3 Provision for expansion

3.3.1 Suitable provision is to be made in each pipeline to allow for relative movement between pipes made of plastic and the steel structure, having due regard to:

- the high difference in the coefficients of thermal expansion
- deformations of the yachts's structure.

3.4 Earthing

3.4.1 Where, in pursuance of [2.4], pipes are required to be electrically conductive, the resistance to earth from any point in the piping system is not to exceed 1 x 10^6 ohm.

3.4.2 Where provided, earthing wires are to be accessible for inspection.

3.5 Penetration of fire divisions and watertight bulkheads or decks

3.5.1 Where plastic pipes pass through fire class divisions, arrangements are to be made to ensure that fire endurance is not impaired.

3.5.2 When plastic pipes pass through watertight bulkheads or decks, the watertight integrity of the bulkhead or deck is to be maintained providing a metallic shut-off valve operable from above the freeboard deck at the bulkhead or deck. This valve may be omitted if the penetration is fitted at a distance more than B/3 from the sides and above the design waterline, or somehow protected with watertight divisions from minor hull damages.

4 Testing of plastic piping

4.1 Certification

4.1.1 A Manufacturer's declaration of conformity to the approved type is to be supplied.

4.2 Testing after installation on board

4.2.1 Hydrostatic testing

a) Piping systems for fuel oil systems are to be subjected to a test pressure of not less than 1,5 times the design pressure or 0,4 MPa, whichever is the greater.

b) Piping systems for other services are to be checked for leakage under operational conditions.

4.2.2 Earthing test

For piping required to be electrically conductive, earthing is to be checked and random resistance testing is to be performed.

Chapter 3

Pleasure < 24m

SECTION 1 ALTERNATIVES, RELAXATIONS ADDITIONAL CONSIDERATION FOR PLEASURE YACHTS OF LESS THAN < 24M

1 General

1.1 Application

1.1.1 As a general rules what required by Pt A, B, C, D may be applied with alternative solution agreed with the Society where necessary.