Technical product documentation (TPD) — Indication of dimensions and tolerances —

Part 4:  
Dimensioning of shipbuilding drawings

Documentation technique de produits (TPD) — Indication des cotes et tolérances —

Partie 4: Cotes des dessins de construction navale
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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The committee responsible for this document is ISO/TC 10, Technical product documentation, Subcommittee SC 6, Mechanical engineering documentation.

ISO 129 consists of the following parts, under the general title Technical product documentation (TPD) — Indication of dimensions and tolerances:

— Part 1: General principles
— Part 2: Dimensioning of mechanical engineering drawings
— Part 3: Architectural
— Part 4: Dimensioning of shipbuilding drawings
Technical product documentation (TPD) — Indication of dimensions and tolerances —

Part 4:
Dimensioning of shipbuilding drawings

1 Scope
This part of ISO 129 specifies the dimensioning for general use on metal hulls on shipbuilding drawings.

2 Normative references
The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 128-25, Technical drawings — General principles of presentation — Part 25: Lines on shipbuilding drawings
ISO 129-1:—1), Technical drawings — Indication of dimensions and tolerances — Part 1: General principles

3 General principles
General principles of dimensioning are as follows.

a) The basic types of lines, their designations, as well as general rules for draughting of lines, are specified in ISO 128-25.

b) The rule of indication of dimension and tolerances are specified in ISO 129-1.

c) The location dimension of the hull structure shall be indicated with the distance of the assembled moulded line of the member from reference line (BL = base line, CL = centre line, AP = after perpendicular, FP = forward perpendicular, WL = water line).

d) The dimensions of the same member(s) shall be indicated only once; the dimensions of the members with identical specifications and sizes shall be indicated only once; these dimensions should be on the view(s) of the drawing that displays the member(s) most clearly.

4 Basic requirements

4.1 General
Dimensions indicating the location of a structural member in the hull shall be referenced as follows.

— In longitudinal direction: to a structural frame or to a station or to midship
— In vertical direction: to a BL, to a WL, or to a deck line
— In transverse direction: to a CL or to a broadside

1) To be published. (Revision of ISO 129-1:2004)
4.2 Dimension lines

4.2.1 Dimension lines shall be drawn with continuous narrow lines as per ISO 128-25.

Dimension lines should preferably be terminated on either end by closed \(30^\circ\)-arrowheads as shown in Figure 1, but other terminations as ISO 129-1:—, 5.3.2 are admissible.

![Figure 1](image1)

Key
- location of the assembled moulded line of the member
- shaft system section

4.2.2 In case of insufficient space for drawing arrowheads and writing measures, dimensions may be indicated as shown in Figure 2.

![Figure 2](image2)

4.3 Extension lines

4.3.1 Extension lines shall be drawn with continuous narrow lines originating from the moulded line, frame line, station, axis, or reference line of the respective member. The extension lines terminate at the dimension lines as shown in Figures 1 and 2 and as defined in ISO 129-1:—, 5.4.
4.3.2 Extension lines shall be perpendicular to the dimension line. They may be oblique and parallel as shown in Figure 3 (b).

4.3.3 Dimension lines which start at one end at a reference line may be terminated at one end only if the dimension line otherwise would become too long. For examples, see Figure 4 (a) to Figure 4 (c).

4.3.4 At a rounded corner of the shear strake, an idealized corner point shall be drawn by extension lines of the moulded plate edges, as shown in Figure 5. The dimensions are referenced to this corner point.
4.4 Types of dimensions indication

4.4.1 Dimensions shall be written above the dimension line. If the drawing would become too crowded, dimensions may be written above leader lines pointing towards the dimension lines.

4.4.2 Generally, dimension numbers shall not be crossed by lines.

4.4.3 When structural members, e.g. profile stiffeners, are equally spaced, this may be indicated as shown in Figure 6.

![Figure 6](image)

4.4.4 Offsets of curves are presented by offset tables as shown in Table 1, which is referenced to Figure 7.

<table>
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<th>Table 1 — Funnel offsets</th>
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<tr>
<td>Funnel offsets (half-breadths)</td>
</tr>
<tr>
<td>Frame number</td>
</tr>
<tr>
<td>Top line</td>
</tr>
<tr>
<td>Bottom line</td>
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![Figure 7](image)

4.4.5 Inclinations of structures like funnel envelopes or front bulkheads of deckhouses shall be defined using rectangular coordinates and not angular measures.

4.4.6 When dimensioning a wall with various openings, one of the following principles shall be observed (see Figure 8).