
International Standard



7838

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Shipbuilding — Shiplines — Formats and data organization

Construction navale — Formes et lignes de navires — Formats et ordre de présentation des données

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Descriptors : shipbuilding, ship hulls, geometric characteristics, information interchange, data blocks, block formats.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 7838 was developed by Technical Committee ISO/TC 8, *Shipbuilding and marine structures*, and was circulated to the member bodies in September 1983.

It has been approved by the member bodies of the following countries:
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Australia	India	Poland
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China	Japan	Spain
Czechoslovakia	Korea, Dem. P. Rep. of	Sweden
Egypt, Arab Rep. of	Korea, Rep. of	USSR
France	Mexico	
Germany, F.R.	Netherlands	

The member body of the following country expressed disapproval of the document on technical grounds:

Cuba

Shipbuilding — Shiplines — Formats and data organization

1 Scope and field of application

This International Standard specifies the formats and organization of data for the exchange of geometrical information between different systems of ship hull definition.

2 Reference

ISO 7461, *Shipbuilding — Shiplines — Numerical representation of elements of the hull geometry*.

3 Terminology

The terminology used in this International Standard is in accordance with ISO 7461.

4 Sequential file structure

4.1 First data block

The first data block in the file consists of one (1) record which contains:

- file name: up to 24 characters;
- maximum block length, in words: one-word integer number.

4.2 Subsequent data blocks

4.2.1 Contents

Subsequent blocks of data contain geometrical information. Each block contains complete numerical representation of one shipline and consists of four (4) records.

- one (1) alphanumeric line identifier;
- three (3) projections of the line on orthogonal planes.

4.2.2 Layout

The layout of a block is the following:

4.2.2.1 Record 1

IDENT: line identifier up to eight (8) alphanumeric characters;

L: line type parameter (integer).

The line type parameter takes the following values:

L = 1 for a 2-dimensional line;

L = 2 for a 3-dimensional line contained in a non-orthogonal plane;

L = 3 for an arbitrary 3-dimensional line.

4.2.2.2 Record 2

C: projection plane indicator (integer);

S: distance from the origin of the axis systems of orthogonal plane defining 2-dimensional line, in millimetres (real number);

When L = 2 or L = 3, S = 0.

N: number of points on the projection of the line (integer);

P(1) } coordinates of the first point, in millimetres (real
V(1) } number);

PS(1) }
VS(1) } not used for definition of the line geometry;

P(2) } coordinates of the second point, in millimetres (real
V(2) } number);

PS(2) } coordinates of the centre of the circular arc in the
VS(2) } first segment, in millimetres (real number);

...

P(N) } coordinates of the Nth point, in millimetres (real
V(N) } number);

PS(N) } coordinates of the centre of the circular arc in the
VS(N) } (N – 1)th segment, in millimetres (real number).

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4.2.2.3 Records 3 and 4

Record 3 and record 4 have similar layouts to record 2.

4.2.2.4 Specifications in common

The length of a record is $[4 \times (N + 3)]$ words.

When $L = 1$, records 3 and 4 of a data block are present but have no significance.

The projection plane indicator takes the following values:

$C = 1$ for the XY plane;

$C = 2$ for the XZ plane;

$C = 3$ for the YZ plane.

In this notation, the P coordinate of a point corresponds to the first axis and the V coordinate to the second axis.

4.3 Last data block

The last data block in the file consists of one (1) record which contains:

- END OF FILE;
- file name: up to 24 characters;
- number of blocks in the file: (integer).

5 Accessing the file at a logical level

Access to the file at a logical level can be effected by the write/read procedures in 5.1 and 5.2.

NOTE — The names of procedures are not standardized.

5.1 To write a record to the file:

PUTLIN (IDENT, L, C, S, N, P, V, PS, VS)

where

IDENT is a character field;

L is an integer number;

C is an integer number;

S is a real number;

N is an integer number;

P, V, PS, VS are real arrays.

All parameters are input parameters and their meaning is described in clause 4.

5.2 To retrieve a record from the file:

GETLIN (IDENT, L, C, S, N, P, V, PS, VS)

where

IDENT and C are input parameters;

L, S, N, P, V, PS, VS are output parameters.

6 Tolerances of projection representations

The number of segments in each projection of a line will in general be different.

A line which does not lie in an orthogonal plane may be generated from two of its projections. The divergence between a line generated from a pair of its projections and the same line generated from another pair of its projections shall at any point be not greater than 1 mm.