INTERNATIONAL STANDARD

ISO 9669

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Series 1 freight containers — Interface connections for tank containers

Conteneurs de la série 1 — Interfaces des équipements pour conteneurs-citernes

Reference number
ISO 9669:1990(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9669 was prepared by Technical Committee ISO/TC 104, *Freight containers*.

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Introduction

This International Standard aims to reduce problems in the operation of tank containers caused by a multiplicity of different interface connections. The combined efforts of the manufacturing and operational sectors of the industry have been devoted to establishing a certain degree of international standardization, while recognizing the requirements of the various national standards applicable in areas where tank containers are operated.

It also aims to ensure that tank containers fitted with flanged interface connections are compatible with the flanges specified by the national standards used in the countries in which the container may travel. Such compatibility will improve safety in operation by limiting the variety of connections with which the authorities and their emergency services have to deal.

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Series 1 freight containers — Interface connections for tank containers

Section 1: General

1.1 Scope

This International Standard specifies the characteristics of interface connections for tank containers complying with ISO 1496-3.

Section 1 gives the definitions and the testing and welding requirements for interface connections.

Section 2 gives a range of flange connections for tank containers, type codes 70 to 77 and 85 to 88.

Section 3[1] specifies the dimensions and characteristics of man-hole openings and man-hole lids for tank containers intended to contain liquids or pressurized dry bulk, with a test pressure not exceeding 600 kPa for containers of type codes 70 to 76 and 85 to 88.

Section 4[1] specifies the requirements for the interface connection screw threads.

1.2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1496-3:—[2], *Series 1 freight containers — Specification and testing — Part 3: Tank containers for liquids, gases and pressurized dry bulk.*

1.3 Definitions

For the purposes of this International Standard, the following definitions apply.

1.3.1 tank container: A freight container which includes two basic elements, the tank or tanks and the framework, and complies with the requirements of ISO 1496-3.

1.3.2 gas: A fluid substance having a vapour pressure greater than an absolute pressure of 300 kPa[3] at 50 °C or as otherwise defined by the competent authority (see 1.3.6).

1.3.3 liquid: A fluid substance having a vapour pressure not greater than an absolute pressure of 300 kPa[3] at 50 °C.

1.3.4 dry bulk: Assemblies of separate solid particles normally substantially in contact with one another which are or may be rendered capable of fluid flow.

1.3.5 dangerous goods: Those substances classified as dangerous by the United Nations Committee of experts on the transport of dangerous goods or by the competent authority (see 1.3.6).

1.3.6 competent authority: The authority or authorities designated as such in each country or in each

1) Will be published later as an amendment to this International Standard.

2) To be published. (Revision of ISO 1496-3:1981)

3) 300 kPa = 3 bar (the bar is currently used as a unit of pressure in relevant international codes, often implemented by national legislation).

specific case by the government concerned for the approval of tank containers.

1.3.7 maximum allowable working pressure: That pressure assigned for operation by either a competent authority or other responsible person to a particular tank, above which that tank is not intended to be operated.

1.3.8 test pressure: The gauge pressure at which the tank is tested.

1.3.9 flange: A connecting means using bolts to interface with a similar connection.

1.3.10 interface: Identifiable area used to adjoin an external area.

1.3.11 connections: Specific points within an interface area used to join to a similar external point.

1.3.12 openings: Access points allowing communication with contents of the tank container.

1.4 Design requirements — General

1.4.1 Testing

All interfaces are considered part of the vessel and shall be subjected to the hydraulic tests prescribed for the tank.

1.4.2 Welding

If interfaces are welded to other structures, the welds and preparation for the welds shall be to a recognized code, which may be the same as that to which the tank has been designed.

Section 2: Flange connections for containers of tank type codes 70 to 77 and 85 to 88

2.1 General

This section specifies a range of flange connections for tank containers complying with ISO 1496-3, of type codes 70 to 77 and 85 to 88, i.e. tank containers for liquids, gases and dry bulk with a maximum allowable working pressure not greater than 1 000 kPa (test pressure 1 500 kPa).

The flange connections specified are the final connections used to interface with the external loading/discharge apparatus.

2.2 Dimensions

The dimensions shall be as shown on figure 1 and as specified in table 1.

2.3 Flange thickness

The minimum thickness of flanges may be based on the following examples:

Material	Ultimate tensile strength	Thickness
Carbon steel	430 N/mm^2	20 mm
Stainless steel	537 N/mm^2	16 mm

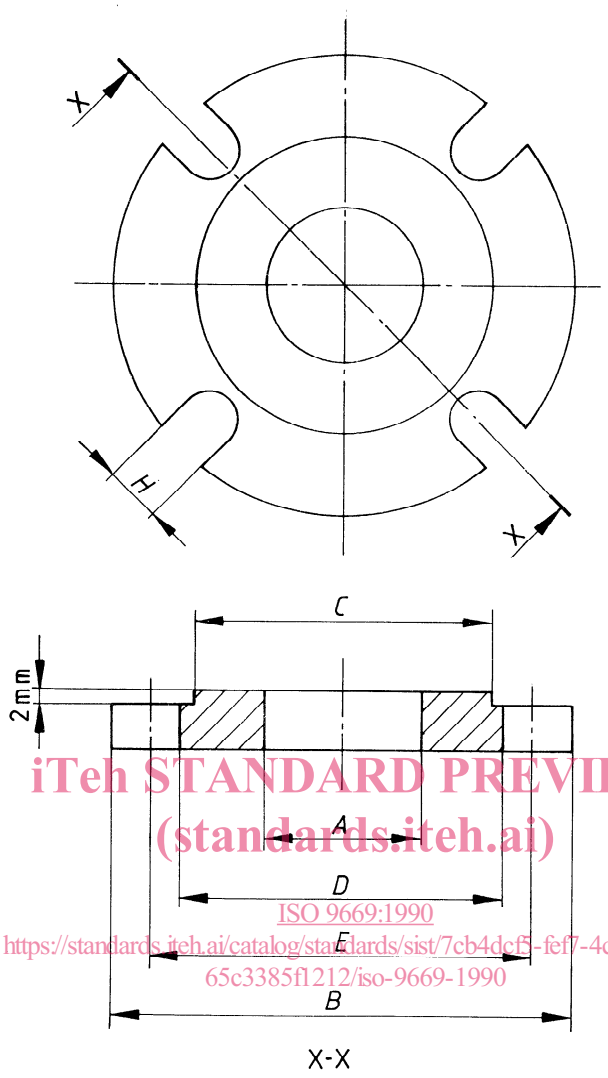

Figure 1 — Flange (see table 1)

Table 1 — Dimensions (see figure 1)

Dimensions in millimetres (inches)

Nominal bore *A*	Outside diameter *B*	Raised face *C*	Core diameter *D*	Pitch circle *E*	Slot size *H*
40 (1½)	150	82	82,4	101,4	19
50 (2)	165	101	101	120	19
80 (3)	200	130	131	150	19

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