SLOVENSKI STANDARD
SIST EN 2245:2012

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Aeronavtika - Cevovodi za tekočine in pline - Definicije

Aerospace series - Pipelines for liquids and gases - Definitions

Luft- und Raumfahrt - Leitungen für Flüssigkeiten und Gase - Begriffe

Série aérospatiale - Canalisations pour liquides et gaz - Définitions

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ICS:

49.080	Letalski in vesoljski hidravlični sistemi in deli	Aerospace fluid systems and components

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Aerospace series - Pipelines for liquids and gases - Definitions

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Foreword

This document (EN 2245:2012) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2012, and conflicting national standards shall be withdrawn at the latest by September 2012.

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1 Scope and field of application

This European Standard specifies the nominal sizes, pressure terms and pressure classes concerning pipelines and types and temperature range of flexible non-metallic hose assemblies used on board aircraft to convey liquids and gases as well as for the transmission of forces.

2 Normative references

This document contains no normative references.

3 Symbols and abbreviations

D_N = Nominal size

P_N = Nominal pressure

P_E = Proof pressure

P_R = Minimum burst pressure

P_P = Peak pressure

4 Nominal size

The nominal size shall be a characteristic figure without dimension. It describes all components forming part of a pipeline system.

4.1 Rigid tubes

The nominal size of a rigid tube used in a pipeline corresponds to its outer diameter.

4.2 Flexible hoses

The nominal size of a flexible hose used in a flexible hose assembly corresponds to the outer diameter of a rigid tube, such that the inside diameters of the flexible hose and the rigid tube are approximately the same.

4.3 Range of nominal sizes of pipelines

Table 1

Nominal size	3	4	5	6	8	10	12	16	20	25	32	40	50	63	80
US number [a]	2	–	3	4	5	6	8	10	12	16	20	24	32	40	48

[a] This number is the outside diameter of the comparable corresponding rigid tube expressed in 1/16 inch.

5 Pressure terms

5.1 Nominal pressure P_N

The nominal pressure of pipelines corresponds to the maximum steady pressure to which the pipeline may be subjected. A normal atmosphere (specified in ISO 471) being given.

5.2 Proof pressure P_E

Proof pressure shall be a pressure for test purposes of which the level shall be a given multiple of the nominal pressure and to which the pipeline may be subjected for a given time without any evidence of leakage, permanent deformation or other damage becoming apparent.

5.3 Minimum burst pressure P_R

Minimum burst pressure corresponds to the minimum pressure which the pipeline shall withstand before its final damage due to fracture, bursting, blow-off of an end fitting, etc.

5.4 Impulse, Peak pressure P_P

The impulse shall be a transient pressure increase with a characteristic curve produced during the impulse test of which the peak point shall be called peak pressure.

6 Pressure classes

The pipelines are divided into pressure classes according to table 2.

Table 2

Classes	Nominal Pressure [a]
I	$0 < P_N \leq 2$ MPa (20 bar)
II	$2 < P_N \leq 7$ MPa (70 bar)
III	$P_N = 10{,}5$ MPa (105 bar)
IV	$P_N = 21$ MPa (210 bar)
V	$P_N = 28$ MPa (280 bar)

[a] 1 bar = 10^5 pascal.

7 Types and temperature range of non-metallic flexible hose assemblies

Non-metallic flexible hose assemblies are classified into types corresponding to the various ranges of operating temperature on board aircraft, according to table 3.

Table 3

Types	1	2	3 [a]	4 [b]
Temperature range in °C	–50 to +70	–55 to +135	–55 to +230	–55 to +200

[a] Type 3 is reserved for pressure classes I, II and III.

[b] Type 4 is reserved for pressure classes IV and V.