SLOVENSKI STANDARD
SIST EN 16051-1:2012

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Naprave za napihovanje in pripomočki za napihljive potrošniške proizvode - 1. del: Združljivost ventilov in adapterjev

Inflation devices and accessories for inflatable consumer products - Part 1: Compatibility of valves and valve adapters

Pumpen und Pumpenzubehör für aufblasbare Verbraucherartikel - Teil 1: Kompatibilität von Ventilen und Ventiladaptern

Pompes et accessoires pour des produits gonflables destinés aux consommateurs - Partie 1: Compatibilité des valves et des adaptateurs

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English Version

Inflation devices and accessories for inflatable consumer products - Part 1: Compatibility of valves and valve adapters

Dispositifs et accessoires de gonflage pour biens de consommation gonflables - Partie 1: Compatibilité des valves et adaptateurs de valves

Pumpen und Pumpenzubehör für aufblasbare Verbraucherartikel - Teil 1: Kompatibilität von Ventilen und Ventiladaptern

This European Standard was approved by CEN on 29 October 2011.

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Foreword

This document (EN 16051-1:2012) has been prepared by Technical Committee CEN/TC 136 “Sports, playground and other recreational facilities and equipment”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by July 2012, and conflicting national standards shall be withdrawn at the latest by July 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

EN 16051, *Inflation devices and accessories for inflatable consumer products*, consists of the following parts:

— *Part 1: Compatibility of valves and valve adapters*

— *Part 2: Safety requirements, durability, performance, compatibility and test methods of inflators*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

Introduction

The process of inflating a floating leisure article should be considered in two ways:

a) the device for inflating the product, a pump;

b) the compatibility between the pump and the valve or valves on the product itself.

This standard, EN 16051, is in two parts and addresses the performance, safety requirements, durability and test methods that should be applied to the pump and the compatibility between a pump and the device to be inflated to ensure that the inflation process can be conducted efficiently and safely.

Unless a device is supplied and sold with a pump, by the manufacturer, where it is reasonable to expect the pump to be compatible with the product, there is generally a requirement to have an adaptor between a pump and the device valves to ensure that the air hose or other connector fits into or onto the valves on the device.

This part of the standard, Part 1, addresses the requirements for valves and where necessary, adaptors to ensure good fit and mechanical efficiency when inflating the device.

1 Scope

This document specifies the valve side interface geometry between valves and pump adapters as well as strength requirements of valves and valve adapters for inflatable consumer articles (see definition in 3.1).

This document does not apply for

— valves of personal flotation devices according to EN ISO 12402;

— diving accessories and buoyancy compensators according to EN 1809.

This document excludes the following valve types:

— valves used for bicycles and vehicles;

— needle valves (e. g. valves used for team sport balls).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 16051-2, *Inflation devices and accessories for inflatable consumer products — Part 2: Safety requirements, durability, performance, compatibility and test methods of inflators*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
inflatable consumer articles
group of articles and related accessories which are used for leisure purposes on land and water or in households or children's play

NOTE Typically these articles are floating leisure devices for use on or in the water, small inflatable boats, air beds, air furniture, air mattresses, swimming aids, inflatable toys, aquatic toys etc.

3.2
valve
device intended to inflate air chambers, to close the inflated air chambers and to deflate them after use

3.3
screw valve
valve in which the connection of valve body to valve base and the connection between valve body and valve closure (cap, plug) is designed as a threaded connection

3.4
plug valve
valve in which valve base and valve body form a unit and the closed condition is created by a plug inserted into the valve body

3.5
valve with twist lock closure
connection with inflation device is sealed by a twist lock closure

3.6
non-return device
valve component preventing air discharge even with the valve closure opened

3.7
valve without non-return device
valve in which the escape of air is unimpeded after removal of the closure (cap, plug)

3.8
valve adapter
device which provide compatibility between a pump and a valve

3.9
valve closure
element which provides the main and/or final sealing function of the valve

3.10
interface
those dimensional locations where the pump adapter and the valve connect

3.11
nominal pressure
working pressure defined by the manufacturer

4 Valves

4.1 Dimensions, designation

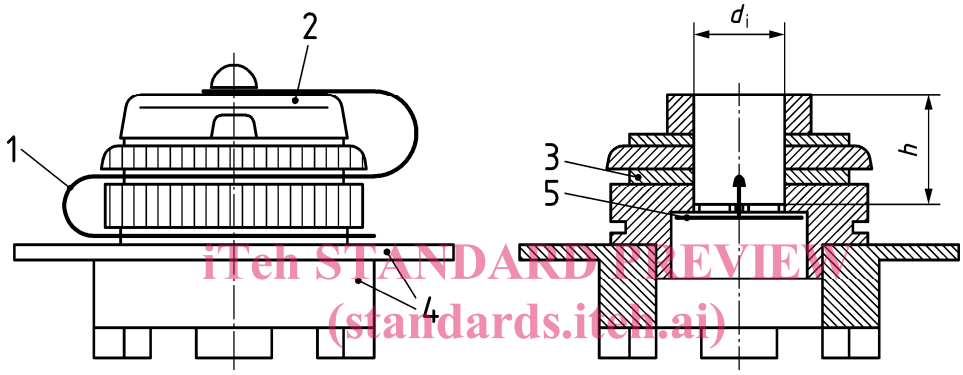
4.1.1 General

Dimensions are given in millimetres.

The valves need not correspond to the pictorial representations, only the interface dimensions specified have to be complied with.

4.1.2 Screw valve with non-return device

Closure: Cap (see Figure 1)



a) front view (with cap) **b) sectional view (without cap)**

Key
1 tethering strap or anchors
2 valve closure (cap)
3 valve body
4 valve base with weld flange
5 back pressure seal

d_i inner diameter of connection opening
h minimum inner depth of connection opening

Figure 1 — Example of a screw valve with non-return device and cap without twist lock closure

Design types:

1) Valve base screwed with air chamber sheeting;

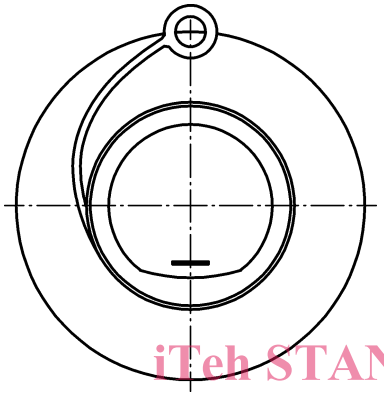
2 Valve base welded with air chamber sheeting;

3) Valve body integrated into valve base;

4) Valve body screwed into valve base.

Closure: Cap with twist lock closure (see Figure 4)

a) front view **b) section side view**



c) bottom view

Key

d_i inner diameter of connection opening
d_o outer diameter of connection opening
h minimum inner depth of connection opening

Figure 2 — Example of a X-large screw valve with non-return device

Valve adapters regarding the bayonet closure valve and the X-large screw valve have to be provided together with the product by the manufacturer. These adapters shall provide complete compatibility with the valve and the pump hose intermediate adapter as shown in Figure 3. This is not applicable if product and pump provide an independent system.