

BS EN 16522:2014

Incorporating corrigendum June 2014



BSI Standards Publication

Tanks for transport of dangerous goods — Service equipment for tanks — Flame arresters for breather devices

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National foreword

This British Standard is the UK implementation of EN 16522:2014.

The UK participation in its preparation was entrusted to Technical Committee AUE/18, Tanks for the transport of dangerous goods.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Published by BSI Standards Limited 2014

ISBN 978 0 580 87081 1

ICS 13.300; 23.020.20; 23.060.40

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2014.

Amendments/corrigenda issued since publication

Date	Text affected
31 July 2014	Implementation of CEN correction notice 04 June 2014: French title updated

ICS 13.300; 23.020.20; 23.060.40

English Version

Tanks for transport of dangerous goods - Service equipment for tanks - Flame arresters for breather devices

Citernes destinées au transport de matières dangereuses -
Équipement de service pour citernes - Arrête-flammes pour
dispositifs de respiration

Tanks für die Beförderung gefährlicher Güter -
Bedienungsausrüstung von Tanks - Flammensperren für
Belüftungseinrichtungen

This European Standard was approved by CEN on 20 March 2014.

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Foreword

This document (EN 16522:2014) has been prepared by Technical Committee CEN/TC 296 “Tanks for transport of dangerous goods”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by October 2014 and conflicting national standards shall be withdrawn at the latest by October 2014.

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.

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EN 16522 is part of the following series of standards:

- EN 13081, *Tanks for transport of dangerous goods — Service equipment for tanks — Vapour collection adaptor and coupler*
- EN 13082, *Tanks for transport of dangerous goods — Service equipment for tanks — Vapour transfer valve*
- EN 13314, *Tanks for transport of dangerous goods — Service equipment for tanks — Fill hole cover*
- EN 13317, *Tanks for transport of dangerous goods — Service equipment for tanks — Manhole cover assembly*
- EN 13922, *Tanks for transport of dangerous goods — Service equipment for tanks — Overfill prevention systems for liquid fuels*
- EN 14595, *Tanks for transport of dangerous goods — Service equipment for tanks — Pressure and Vacuum Breather Vent*
- EN 14596, *Tanks for transport of dangerous goods — Service equipment for tanks — Emergency pressure relief valve*
- EN 15208, *Tanks for transport of dangerous goods — Sealed parcel delivery systems — Working principles and interface specifications*
- CEN/TR 15120, *Tanks for transport of dangerous goods — Guidance and recommendations for loading, transport and unloading*

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Introduction

The flame arrester is the protection device installed to prevent the immediate passage of flame into the tank shell in accordance with the requirements of ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road) [1].

The flame arrester may be an integral part of the device described in EN 14595 or another breather device.

If the flame arrester is incorporated into a device with other functions, this incorporation will not jeopardize or modify the requirements of this European Standard.

1 Scope

This European Standard defines the minimum requirements for flame arresters fitted to tanks for the transport of dangerous goods.

This European Standard specifies the type of flame arrester to be used for breather devices as part of the service equipment of fixed tanks and demountable tanks for the transport of liquid petroleum products. The equipment specified by this European Standard is suitable for use with liquid petroleum products and other dangerous substances of Class 3 of ADR which have a vapour pressure not exceeding 110 kPa at 50 °C and petrol, and which have no subclassification as toxic or corrosive. It also specifies the tests necessary to verify the compliance of the equipment with this European Standard.

Emergency pressure relief valves in accordance with EN 14596 are excluded from the requirements of this European Standard.

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.

EN ISO 16852:2010, *Flame arresters — Performance requirements, test methods and limits for use (ISO 16852:2008, including Cor 1:2008 and Cor 2:2009)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 16852:2010 apply.

4 Function

The flame arrester shall prevent the immediate passage of flame into the tank.

5 General requirements

Unless otherwise stated, this European Standard shall meet the requirements of EN ISO 16852.

6 Requirements for different applications of flame arresters

Table 1 defines the requirements for each type of flame arrester application.

Table 1 — Flame arrester type and test requirements

Application/Installation	Type of flame arrester	Testing requirements	
Direct communication with atmosphere	End-of-line deflagration	EN ISO 16852:2010, 7.3.2.1	
Communication to pipe work system	End-of-line stable detonation with restriction	EN ISO 16852:2010, 7.3.3.2 (applies to valve/flame arrester combinations when tested together)	EN ISO 16852:2010, 7.3.3.3 (applies to flame arresters tested independently of the valves)

7 Materials of construction

The materials of construction shall comply with the requirements given in EN ISO 16582.

The manufacturer shall provide with the equipment a full material specification for those parts that may come into contact with the substances described by Clause 1.

In addition and whenever possible, the selected materials shall be recyclable and sustainable.

8 Marking of the arrester and/or its combined equipment

Manufacturers and users shall ensure that any marking is legible and labels and attachment devices are durable and resistant to environmental corrosion under operating conditions.

The marking requirements given in EN ISO 16852 shall be complied with unless the device or the integrated device is too small to accept all the specified information.

In such circumstances the certificate accompanying the device shall contain all the specified information whilst the device shall be marked with the following information:

- reference to this document (the number of this European Standard);
- manufacturer's name and/or logo;
- manufacturer's type or assembly number;
- serial number and/or date of manufacture;
- protected side (directional types only);
- explosion group;
- warning, "Flame arresters have installation and application limits";
- type identifier, "DEF" for deflagration flame arresters and "DET3" for detonation flame arresters;
- the burn rating (either type), "BCc";
- operational temperature T_0 ;
- maximum operational pressure p_0 .

Bibliography

- [1] ADR. *European Agreement concerning the International Carriage of Dangerous Goods by Road*, UNECE, United Nations, 2012. Applicable as of 1 January 2013. Available from <http://www.unece.org/trans/danger/publi/adr/adr2013/13contentse.html>
- [2] EN 14595, *Tanks for transport of dangerous goods — Service equipment for tanks — Pressure and Vacuum Breather Vent*
- [3] EN 14596, *Tanks for transport of dangerous goods — Service equipment for tanks — Emergency pressure relief valve*

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