



SLOVENSKI STANDARD

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D`Uglca YfbY'ghUV]bY'dcgcXY'nUbUXnYa bc`g`UX]y Yb^Y_i f]bY[Uc`UE`Yfcn]bU]b X]nY'g_]\`dc[cbg_]\`[cf]j`!'Dca cyb]nUvc`b_]nUi dcfUvc`g'dcgcXUa]zg`UXb]a]n 9B`%'` (%!'NU hYj Y]b`dfYg_i gbY'a YtcXY

Thermoplastics static tanks for above ground storage of domestic heating oils, kerosene and diesel fuels - Secondary containments used with tanks complying with EN 13341 - Requirements and test methods

Ortsfeste Tanks aus Thermoplasten für die oberirdische Lagerung von Heizölen, Kerosin und Dieselkraftstoffen - Sekundärbehälter zur Verwendung mit Tanks nach EN 13341 - Anforderungen und Prüfverfahren

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English Version

Thermoplastics static tanks for above ground storage of
domestic heating oils, kerosene and diesel fuels - Secondary
containments used with tanks complying with EN 13341 -
Requirements and test methods

Ortsfeste Tanks aus Thermoplasten für die oberirdische
Lagerung von Heizölen, Kerosin und Dieselmotorkraftstoffen -
Sekundärbehälter zur Verwendung mit Tanks nach EN
13341 - Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 266.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Foreword

This document (prEN 15724:2007) has been prepared by Technical Committee CEN/TC 266 “Thermoplastic static tanks”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

For relationship with EC Directive(s), see informative Annex ZA which is an integral part of this document.

Introduction

The attention of the user should be drawn to national safety and environmental regulations or other regulations that apply when installing thermoplastics tanks, and the suitability of fuels to be stored therein.

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1 Scope

This European Standard specifies the requirements for materials (thermoplastics or steel), physical properties and performance of secondary containments used with specific thermoplastics static tanks complying with EN 13341.

This document is designed to be read with EN 13341.

This European Standard does not consider the consequences of wind or snow loading which is considered to be an installation issue.

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 10002-1, *Metallic materials — Tensile testing — Part 1: Method of test at ambient temperature*

EN 10143, *Continuously hot-dip steel coated steel sheet and strip — Tolerances on dimensions and shape*

EN 10327, *Continuously hot-dip coated strip and sheet of low carbon steel for cold forming — Technical delivery conditions*

EN 13160-4, *Leak detection systems — Part 4: Liquid and/or vapour sensor systems for use in leakage containments or interstitial spaces*

EN 13238, *Reaction to fire tests for building products — Conditioning procedures and general rules for selection of substrates*

EN 13341:2005, *Thermoplastics static tanks for above ground storage of domestic heating oils, kerosene and diesel fuels — Blow moulded polyethylene, rotationally moulded polyethylene and polyamide 6 by anionic polymerization tanks — Requirements and test methods*

EN 13501-1, *Fire classification of construction products and building elements — Part 1. Classification using test data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings — Thermal attack by a single burning item*

EN ISO 2178, *Non-magnetic coatings on magnetic substrates — Measurement of coating thickness — Magnetic method (ISO 2178:1982)*

EN ISO 1716, *Reaction to fire tests for building products — Determination of the gross calorific value*

EN ISO 2360, *Non-conductive coatings on non-magnetic electrically conductive basis materials — Measurement of coating thickness — Amplitude-sensitive eddy current method (ISO 2360:2003)*

EN ISO 4892-2, *Plastics — Method of exposure to laboratory light sources — Part 2: Xenon-arc sources (ISO 4892-2:2006)*

EN ISO 9001, *Quality management systems — Requirements (ISO 9001:2000)*

EN ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227:2006)*

ISO 1817:1999, *Rubber, vulcanized — Determination of the effect of liquids*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13341 and the following apply.

3.1 secondary containment
container which is designed to prevent leakage from a tank entering the environment and which can enable the detection of leakage

3.2 recycled compound
homogenous mixture of reprocessed polymers from tanks according to EN 13341 and secondary containments as specified in this document and additives, i.e. anti-oxidants, pigments, UV stabilisers and others, at a dosage level necessary for the processing and life of product

3.3 regrind material
own material prepared from clean rejected unused tanks, including trimmings from the production of tanks that will be processed in a manufacturer's plant after having been previously processed by the same manufacturer

3.4 lid
upper part of a secondary containment intended to prevent the ingress of water and deleterious material

3.5 cover
upper part of a secondary containment which contributes to the mechanical resistance of the whole and where necessary the protection of all fittings connected to the primary tank and also to prevent the ingress of water and deleterious material

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4 Materials requirements

4.1 Thermoplastics

For secondary containments made of thermoplastics, raw materials and specimens shall be tested and fulfil the requirements given in Table 1 of EN 13341:2005.

A recycled compound which fulfils the requirements according to Table 1 of EN 13341:2005 may be used for manufacturing secondary containments.

The use of regrind material shall be permitted for manufacturing blow moulded secondary containments.

4.2 Steel

4.2.1 For secondary containments made of hot-dip zinc/zinc-aluminium coated steel sheets, the materials shall be tested and fulfil the requirements according to Table 1.

Table 1 — Material requirements for hot-dip zinc/ zinc-aluminium coated steel sheets

Property	Requirement	Test method
Tensile strength	Shall not be less than 270 MPa	EN 10002-1
Coating mass	Shall not be less than 255 g/m ²	EN 10327

4.2.2 For secondary containments made of steel sheets with coatings other than those of 4.2.1, the materials shall be tested and fulfil the requirements according to Table 2.

Table 2 — Material requirements for steel sheets with other coatings

Property	Requirement	Test method
Tensile strength	Shall not be less than 270 MPa	EN 10002-1
Resistance to salt spray	After 350 h, the corrosion area shall not exceed 5 % of total external surface area.	Clause A.5

4.3 Release of dangerous substances

Materials used in products shall not contain or release any dangerous substances in excess of the maximum permitted levels specified in a relevant European Standard for the material or permitted in the national regulations of the country of destination.

4.4 Reaction to fire

4.4.1 Requirements

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This characteristic shall be declared when subject to regulatory requirements, and may be declared otherwise. The reaction to fire of products shall be determined and declared according to the provisions of 4.4.2 or 4.4.3. For tanks with secondary containment, the reaction to fire classification of the tank alone shall be presented together with the classification of the secondary containment alone.

4.4.2 Thermoplastics secondary containments

Secondary containments made from thermoplastics may either be declared as Class F without the need for testing or the material shall be tested and classified according to EN 13501-1, mounted and tested in conditions representative of the product's intended use.

4.4.3 Steel secondary containments

Steel secondary containments shall be classified according to 4.4.2.1 or 4.4.2.2.

4.4.2.1 Secondary containments made from hot dip zinc/zinc-aluminium coated steel sheets may be declared as Class A1 without testing. Steel coated with any coating system, where the coating system contains ≤ 1,0 % by weight or volume (whichever is the more onerous) of homogeneously distributed organic material, or has a gross calorific potential (PCS) ≤ 2,0 MJ/kg when tested according to EN ISO 1716, may also be declared Class A1.

4.4.2.2 Secondary containments made from steel with coatings other than in 4.4.2.1 shall be tested and classified according to the following:

- for coating systems with a PCS ≤ 2,0 MJ/kg when tested according to EN ISO 1716, the product may be classified A1,

- for coating systems with a PCS $\leq 2,0 \text{ MJ/m}^2$, the product may be classified A1 provided that the coating system, when tested according to EN 13823 as below, meets the requirements for this class given in EN 13501-1,
- for coating systems with a PCS $> 2,0 \text{ MJ/kg}$ and $\leq 4,0 \text{ MJ/m}^2$ when tested according to EN ISO 1716, the complete coating system shall be tested according to EN 13823 on either the calcium silicate or fibre cement substrates given in EN 13238. If the coating system meets the requirements of Class A2, the product shall also be classified Class A2 with appropriate smoke and droplets sub-classification,
- for any coating system other than those mentioned above, the coating shall be tested as described above against the requirements of classes lower than A2 and the product shall be given the same class as the coating system.

As an alternative to the above requirements, the coated product itself shall be tested and the classification requirements of EN 13501-1 shall apply. For tests according to EN 13823, the product shall be mounted and fixed in a manner representative of its intended end use.

Results obtained for a coating system included an organic layer apply to any other coating system containing the same composition as the system tested but having less organic material and, therefore, a PCS which is less than that tested. The PCS of the organic coating may be derived by calculation.

4.5 Electrostatic behaviour

Electrostatic behaviour is not a characteristic of the secondary containment or the material of the secondary containment but a phenomenon resulting from some storage media and the filling procedure. Manufacturers shall provide durable notices on all sizes of tanks with appropriate wording drawing the user's attention to filling procedures according to CLC/TR 50404 for flammable liquids with a flash point $< 55 \text{ }^\circ\text{C}$.

5 Design

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5.1 Support

The manufacturer shall provide instructions for appropriate secondary containment support.

5.2 Venting

The secondary containment shall not influence the venting of the tank.

5.3 Suction/outlet system

Secondary containments shall be equipped with openings permitting the safe and reliable connection of withdrawal systems. All fittings shall be of known corrosion resistance to the liquids they are designed to come in contact with.

5.4 Drainage

It shall be possible to drain any liquid from the secondary containment from above the minimum capacity level of the secondary containment.

5.5 Inspection facilities

Where necessary, facilities for inspection of the tank/tank content shall be designed so that they shall not affect the performance of the secondary containment.

5.6 Minimum capacity

The minimum capacity of the secondary containment shall be defined by the type as follows:

- Type 1: the secondary containment shall be able to contain the maximum filling capacity of the inner tank;
- Type 2: the secondary containment shall be able to contain 110 % of the brimful capacity of the inner tank.

5.7 Identification of leakage

Leakage shall be visible through the translucent walls of the secondary containment. Otherwise an optical or acoustic leak detection device according to EN 13160-4 is required.

5.8 Lid or cover of the secondary containment

All secondary containments declared for installation outdoors shall be fitted with a lid or cover which shall be designed and manufactured to prevent the ingress of water and/or deleterious material.

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6 Secondary containment requirements

6.1 Thermoplastics secondary containments

Secondary containments made of thermoplastics shall be tested and fulfil the requirements according to Table 3.

Table 3 — Thermoplastics secondary containment requirements

Property	Requirement		Test method
Visual appearance	There shall be no bubbles, blisters or other defects in the secondary containment wall, which could cause a hole or fracture.		A.1
Mass	The minimum mass shall be the mass of the lightest secondary containment as determined by the initial type test.		Clause B.3 of EN 13341:2005 ^a
Wall thickness ^b	Blow moulded polyethylene	For tanks with a maximum filling capacity up to including 1 500 l, the minimum wall thickness of the secondary containment shall be 2,0 mm. For tanks with a maximum filling capacity in excess of 1 500 l, the minimum wall thickness of the secondary containment shall be not less: values according to Table 4 of EN 13341:2005 minus 1 mm.	Clause B.4 of EN 13341:2005 ^a
	Rotationally moulded polyethylene	For tanks with a maximum filling capacity up to including 1 500 l, the minimum wall thickness of the secondary containment shall be 2,5 mm. For tanks with a maximum filling capacity in excess of 1 500 l, the minimum wall thickness of the secondary containment shall be not less: values according to Table 5 of EN 13341:2005 minus 1 mm.	Clause B.4 of EN 13341:2005 ^a
	Polyamide 6	The minimum wall thickness shall be 2,0 mm	Clause B.4 of EN 13341:2005 ^a
Minimum capacity	The minimum capacity of the secondary containment shall be of Type 1 or 2, as declared by the manufacturer.		A.3
Deformation	The secondary containment shall be leaktight for at least 500 h. After 500 h, the deformation shall not exceed 250 mm on each face of the secondary containment.		A.6
Impact resistance	The assembly, tank and secondary containment, shall remain leak tight.		A.7
Performance against heat effects ^c	No leakage under the water level after 30 min shall occur.		Clause A.8
Air leak tightness	The secondary containment shall be leaktight.		A.9.1
Water leak tightness	The secondary containment shall be leaktight during at least 500 h.		Clause A.10
^a Change the word "tank" to "secondary containment" in the text of the test method. ^b Except for the lids, if any. ^c Only applicable for secondary containments installed indoors when required by regulations in the county of use.			