Fettavskiljare –
Del 1: Principer för utformning, prestanda och provning, märkning och kvalitetskontroll

Grease separators –
Part 1: Principles of design, performance and testing, marking and quality control

The European Standard EN 1825-1:2004 has the status of a Swedish Standard. This document contains the official English version of EN 1825-1:2004.
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Foreword

This document (EN 1825-1:2004) has been prepared by Technical Committee CEN/TC 165 “Waste water engineering”, 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of an identical text or by endorsement, at the latest by March 2005, and conflicting national standards shall be withdrawn at the latest by March 2005.

This is the first part of the two part standard for grease separators. Part 2 gives guidelines for selection, installation, operation and maintenance of grease separators.

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 EU Directive(s).

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

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

This standard specifies definitions, nominal sizes, principles of design, performance requirements, marking, testing and quality control for grease separators.

This standard applies to separators for the separation of greases and oils of vegetable and animal origin from wastewater by means of gravity and without any external energy.

This standard does not cover grease separators intended to treat domestic wastewater from kitchen areas of single family dwellings, where the separator has a nominal size less than 1.

The standard is not applicable for the separation of light liquids, e.g. petrol, fuel and heating oil, and does not cover the treatment of wastewater exclusively containing stable emulsions of greases and oils.

The standard does not cover the use of biological means (bacteria and enzymes).

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 124:1994, Gully tops and manhole tops for vehicular and pedestrian areas – Design requirements, type testing, marking, quality control.


EN 295-3, Vitrified clay pipes and fittings and pipe joints for drains and sewers – Part 3: Test methods.

EN 476, General requirements for components used in discharge pipes, drains and sewers for gravity systems.

EN 681-1, Elastomeric seals – Material requirements for pipe joint seals used in water and drainage applications – Part 1: Vulcanised rubber.


EN 978, Underground tanks of glass-reinforced plastics (GRP) – Determination of factor $\alpha$ and factor $\beta$.


EN 10088-1, Stainless steels – Part 1: List of stainless steels.

EN 10088-2, Stainless steels – Part 2: Technical delivery conditions for sheet/plate and strip for general purposes.

EN 10088-3, Stainless steels – Part 3: Technical delivery conditions for semi-finished products, bars, rods and sections for general purposes.


EN 12390-2, Testing hardened concrete - Part 2: Making and curing specimens for strength tests.

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

EN ISO 178, Plastics – Determination of flexural properties (ISO 178:2001)

EN ISO 291, Plastics - Standard atmospheres for conditioning and testing.


ISO 48, Rubber vulcanized or thermoplastic – Determination of hardness (hardness between 10 IRHD and 100 IRHD).

ISO 185, Grey cast iron – Classification.

ISO 630, Structural steels – Plates, wide flats, bars, sections and profiles.
ISO 877, *Plastics – Methods of exposure to direct weathering, to weathering using glass-filtered daylight, and to intensified weathering by daylight using Fresnel mirrors.*

ISO 1083, *Spheroidal graphite cast irons – Classification.*

ISO 1133, *Plastics – Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics.*


ISO 1183-2:2004 *Plastics -- Methods for determining the density of non-cellular plastics -- Part 2: Density gradient column method (available in English only)*


ISO 1920, *Concrete tests – Dimensions tolerances and applicability of test specimens.*

ISO 3755, *Cast carbon steels for general engineering purposes.*

ISO 4012, *Concrete – Determination of compressive strength of test specimens.*


3 Terms and definitions

For the purposes of this document, the following terms and definitions apply. See also Figures 1 and 2.

3.1 grease
substances of vegetable and/or animal origin, of a density less than 0.95 g/cm³, which are partially or totally insoluble in water and saponifiable

3.2 influent
wastewater, containing grease, with the exception of wastewater containing faeces (sanitary wastewater) which enters the grease separator

3.3 grease separator
a unit or assembly of units to separate grease from wastewater and retain the separated grease within the unit, normally comprising a sludge trap, a grease separation chamber and, if necessary, a sampling point

3.4 grease separation chamber
part of a grease separator for the separation of grease from influent, in such a way that, due to the difference in density between the substance to be separated and the carrying liquid, and the reduction in flow velocity, the grease particles are separated from the wastewater by flotation

3.5 grease separation zone
part of the grease separation chamber, in which the grease is separated, comprising the effective filled volume and the grease collection chamber

3.6 grease collection area
top part of the grease separation chamber, where the separated grease is retained

3.7 sludge trap
part of the grease separator where material settles, i.e. sludge, silt and grit, and which can be a separate unit or constructed with the grease separation chamber as a combined unit

3.8 extension shaft
component used to extend an opening in the separator system to finished level thereby permitting access for inspection and maintenance purposes

3.9 sampling point
part of the grease separator situated downstream of the separation process where samples can be taken of the wastewater discharged from the separator

3.10 nominal size (NS)
number, without units, approximately equivalent to the maximum effluent flow rate in litres per second from the separator when tested in accordance with 8.5.1

3.11 maximum operational liquid level
highest level of liquid and grease at the flow, corresponding to the nominal size, with the grease collection area filled
3.12 automatic warning device
device to warn of excessive depth of grease or wastewater or low level condition

3.13 coating/lining
a protective layer on a separator component

4 Nominal sizes

The preferred nominal sizes of grease separators are: 1, 2, 4, 7, 10, 15, 20 and 25.

Other nominal sizes are permissible.

5 Requirements

5.1 General

Grease separators and their separate components shall be in accordance with material requirements specified in 5.2.

5.2 Materials

5.2.1 General

Grease separators may be constructed from:

— unreinforced concrete, fibre-reinforced concrete, reinforced concrete;
— metallic materials: cast iron, stainless steel, steel;
— plastics materials: glass fibre reinforced plastics, polyethylene;
— vitrified clay.

Any other materials used in the construction of a grease separator shall meet all the relevant requirements of this standard.

5.2.2 Concrete

The concrete shall comply with the minimum compressive strength class C 35/45 in accordance with EN 206-1.