

<b>STN</b>	<b>Odstredivky</b> <b>Odstredivky na námorné palivá</b> <b>Určenie výkonu separácie častíc a certifikovaného</b> <b>prietoku (CFR) za definovaných skúšobných</b> <b>podmienok</b>	<b>STN</b> <b>EN 17763</b>  69 2612
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Centrifuges - Marine fuel centrifuges - Determination of particle separation performance and certified flow rate (CFR) under defined test conditions

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/22

Obsahuje: EN 17763:2022

**136008**



EUROPEAN STANDARD

EN 17763

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2022

ICS 47.020.20; 47.020.30

English Version

## Centrifuges - Marine fuel centrifuges - Determination of particle separation performance and certified flow rate (CFR) under defined test conditions

Centrifugeuses - Centrifugeuses à combustible pour la marine - Détermination des performances de séparation des particules et du débit certifié (CFR) dans des conditions d'essai définies

Zentrifugen - Zentrifugen für Schiffskraftstoffe - Bestimmung der Partikelabscheideleistung und der zertifizierten Durchflussrate (CFR) unter definierten Testbedingungen

This European Standard was approved by CEN on 29 August 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## EN 17763:2022 (E)

<b>Contents</b>	<b>Page</b>
<b>European foreword .....</b>	<b>3</b>
<b>Introduction .....</b>	<b>4</b>
<b>1 Scope.....</b>	<b>5</b>
<b>2 Normative references.....</b>	<b>5</b>
<b>3 Terms and definitions.....</b>	<b>5</b>
<b>4 Test arrangements .....</b>	<b>6</b>
<b>4.1 Test equipment.....</b>	<b>6</b>
<b>4.2 Test media .....</b>	<b>8</b>
<b>4.2.1 Test oil specification.....</b>	<b>8</b>
<b>4.2.2 Test oil kinematic viscosity.....</b>	<b>8</b>
<b>4.2.3 Test oil density.....</b>	<b>9</b>
<b>4.2.4 Test oil dispersing additive.....</b>	<b>9</b>
<b>4.2.5 Test particle specification .....</b>	<b>9</b>
<b>5 Performance test.....</b>	<b>9</b>
<b>5.1 Oil viscosity.....</b>	<b>9</b>
<b>5.2 Particle concentration .....</b>	<b>9</b>
<b>5.3 Dispersing of particles into test medium .....</b>	<b>9</b>
<b>5.4 Test sequence.....</b>	<b>10</b>
<b>5.5 Test procedure.....</b>	<b>10</b>
<b>5.6 Sampling.....</b>	<b>10</b>
<b>5.7 Particle counting.....</b>	<b>11</b>
<b>6 Analysis .....</b>	<b>11</b>
<b>6.1 Calculation of separation efficiency .....</b>	<b>11</b>
<b>6.2 Calculation of the 85 % efficiency point .....</b>	<b>11</b>
<b>6.3 Correction of measured capacities.....</b>	<b>12</b>
<b>6.4 Calculation of certified flow rate (CFR).....</b>	<b>13</b>
<b>7 CFR results for similar machines (scaling).....</b>	<b>13</b>
<b>8 Test report.....</b>	<b>13</b>
<b>Annex A (informative) Dispersing the particles in the test medium.....</b>	<b>14</b>
<b>Annex B (informative) Regeneration of test particle concentration.....</b>	<b>15</b>
<b>Annex C (normative) Particle counting.....</b>	<b>16</b>
<b>Annex D (informative) Example of correction of measured capacities.....</b>	<b>27</b>
<b>Bibliography .....</b>	<b>28</b>

## **European foreword**

This document (EN 17763:2022) has been prepared by Technical Committee CEN/TC 313 “Centrifuges”, the secretariat of which is held by SIS.

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 April 2023, and conflicting national standards shall be withdrawn at the latest by April 2023.

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

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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**EN 17763:2022 (E)****Introduction**

In general, diesel engines for propulsion of ships burn marine residual fuels. Marine residual fuels contain the residue remaining after lighter fractions have been extracted from the crude oil during various processes in the oil refinery. They are a blend of this heavy fraction to which other refinery stream products are added to obtain the desired viscosity grade. Marine residual fuel oils contain elements inherent to the product itself but they also contain some contaminants, which either are due to an external contamination or enter into the fuel at the refinery during production, such as catalyst fines which are small fragments of a catalyst, used in the catalytic cracking stage in order to cut long molecule chains into smaller molecule chains. The catalyst fines are extremely hard and abrasive, and, if not removed from marine residual fuel, can damage diesel engines with severe economic and, in extreme cases, safety consequences. The normal way of removing catalyst fines and other contaminants from marine residual fuel is by centrifugal separation.

It is important that all fuels are centrifuged efficiently to minimize the level of contaminants, including catalyst fines.

In bunkered oil the maximum content of catalyst fines, expressed as the total content of Aluminium and Silicon, is 60 mg/kg according to ISO 8217. Engine builders expect the level of catalyst fines to be reduced to below 10 mg/kg, only reaching to 15 mg/kg for short amounts of time in the fuel entering the engine. As the level of catalyst fines in the bunkered fuel is lowered, the engine builders expect a related reduction in the amount of catalyst fines in the fuel entering the engine.

For many years there has been a demand from engine builders, ship builders, ship owners and classification societies for reliable performance criteria for the centrifuges' ability to remove abrasive particles from marine residual fuels. The purpose of this document is to meet this demand by specifying a repeatable method to determine separation performance with specific test particles in specific test oil.

## 1 Scope

This document specifies the procedure for the determination of the certified flow rate (CFR), a performance parameter for centrifuges, at specific fuel oil viscosities using a defined test oil and a defined test procedure.

This document is applicable to marine fuel centrifuges.

All values reported as CFR capacities are verified measured values on a defined CFR test bench.

Separation efficiency is determined by a defined particle counting method.

Scaling based on Stoke's law and disc stack design is excluded from this document.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 ISO 3104, *Petroleum products - Transparent and opaque liquids - Determination of kinematic viscosity and calculation of dynamic viscosity (ISO 3104)*

EN ISO 3675, *Crude petroleum and liquid petroleum products - Laboratory determination of density - Hydrometer method (ISO 3675)*

EN ISO 3838, *Crude petroleum and liquid or solid petroleum products - Determination of density or relative density - Capillary-stoppered pycnometer and graduated bicapillary pycnometer methods (ISO 3838)*

EN 60751, *Industrial platinum resistance thermometers and platinum temperature sensors*

EN ISO 12185, *Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method (ISO 12185)*

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