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I.S. EN 16644:2014

Pumps - Rotodynamic pumps - Glandless circulators having a rated power input not exceeding 200 W for heating installations and domestic hot water installations - Noise test code (vibro-acoustics) for measuring structure- and fluid-borne noise

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This document is based on:	*Published:*
EN 16644:2014	2014-12-10

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2014-12-27	23.080
	NOTE: If blank see CEN/CENELEC cover page

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16644

December 2014

ICS 23.080

Supersedes EN 1151-2:2006

English Version

Pumps - Rotodynamic pumps - Glandless circulators having a rated power input not exceeding 200 W for heating installations and domestic hot water installations - Noise test code (vibro-acoustics) for measuring structure- and fluid-borne noise

Pompes - Pompes rotodynamiques - Circulateurs sans presse-étoupe de puissance absorbée n'excédant pas 200 W, destinés au chauffage central et à la distribution d'eau chaude sanitaire domestique - Code d'essai acoustique (vibro-acoustique) pour le mesurage des bruits de structure et hydrauliques

Pumpen - Kreiselpumpen - Umwälzpumpen in Nassläuferbauart mit elektrischer Leistungsaufnahme bis 200 W für Heizungsanlagen und Brauchwassererwärmungsanlagen für den Hausgebrauch - Geräuschprüfvorschrift (vibro-akustisch) zur Messung von Körperschall und Flüssigkeitsschall

This European Standard was approved by CEN on 2 November 2014.

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Foreword

This document (EN 16644:2014) has been prepared by Technical Committee CEN/TC 197 “Pumps”, 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of an identical text or by endorsement, at the latest by June 2015 and conflicting national standards shall be withdrawn at the latest by June 2015.

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.

This document supersedes EN 1151-2:2006.

This standard replaces EN 1151-2:2006 as a result of the withdrawal of EN 1151-1 and the issuing of the EN 16297 series as its replacement and is expanded to include cooling systems.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

This document covers the measurement of fluid and structure-borne noise as induced by small glandless circulators having a rated input of ≤ 200 W. It has been prepared in response to the need of having uniform procedures as requirements for noise levels especially in residential housing, tightened by national and European regulations. The issue of airborne noise is covered by other standards.

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1 Scope

This European Standard specifies a test code for the vibro-acoustic characterization of glandless circulators with pump housing having a rated power input $P_1 \leq 200\text{W}$, intended to be used in heating installations, domestic hot water service installations and cooling systems, and is limited to glandless circulators with threaded connections of 11/2 inch. The test code comprises the test rig, the measurement method and the test conditions.

This European Standard applies to glandless circulators, which are manufactured after the date of issue of this European Standard.

The characterization principle is based on measuring the structure-borne and the fluid-borne power transmitted respectively by vibration and pressure fluctuations in the pipe connected to a glandless circulator.

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 16297-1:2012, *Pumps — Rotodynamic pumps — Glandless circulators — Part 1: General requirements and procedures for testing and calculation of energy efficiency index (EEI)*

EN 50160, *Voltage characteristics of electricity supplied by public distribution networks*

ISO 2016, *Capillary solder fittings for copper tubes — Assembly dimensions and tests*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16297-1:2012 and the following apply.

3.1
speed setting
setting attained (for pumps with different settings) when the speed of the electric motor is changed

3.2
fluid-borne intensity
I_{fb}
time averaged rate of flow of the acoustic energy per cross section of fluid transmitted lengthways the straight pipe by internal pressure fluctuations

Note 1 to entry: Its sign can be positive or negative indicating the sense of energy propagation.

Note 2 to entry: Fluid-borne intensity is expressed in W/m^2.

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