
**Liquid pumps and pumps units —
Noise test code — Grades 2 and 3 of
accuracy**

*Pompes et groupes motopompes pour liquides — Code d'essai
acoustique — Classes de précision 2 et 3*

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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Pump family and pump configuration	2
5 Sound power level determination	2
5.1 General	2
5.2 Specific considerations for reference box, measurement surface, position of microphones, and intensity probe	4
5.2.1 General	4
5.2.2 Reference box	5
5.2.3 Measurement surface and microphone positions	6
5.2.4 Position of microphones and intensity probes	10
6 Emission sound pressure level determination	10
6.1 Basic standard to be used	10
6.2 Relevant work station	10
7 Uncertainty	10
8 Installation and mounting conditions	11
8.1 General	11
8.2 Noise test situation	11
8.2.1 General	11
8.2.2 Test on site	12
8.2.3 Test on shop test stand	12
8.2.4 Test on a specific facility intended for acoustic measurement	12
9 Operating conditions during noise measurement	12
9.1 General	12
9.2 Pumped liquid	13
9.3 NPSHA value	13
10 Information to be recorded and to be reported	13
10.1 General	13
10.2 Test report	13
11 Declaration and verification of noise emission values	14
Annex A (normative) Pump alone — Measurement surface	15
Annex B (normative) Pump units — Microphone positions for sound pressure level measurement on the measurement surface for different pump types and sizes	16
Annex C (informative) Example of a dual-number noise declaration	23
Bibliography	24

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 197, *Pumps*, in collaboration with ISO Technical Committee TC 115, *Pumps*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 20361:2015), which has been technically revised. The main changes compared to the previous edition are as follows:

- addition of [Clause 7](#) on measurement uncertainty;
- addition of information in [Clause 8](#) on noise test situation and background noise;
- change of title of previous [Clause 9](#) (now [Clause 10](#)).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The noise emitted by a pump unit can be radiated by the casing of the pump, the driving system (e.g. motor, gear box, coupling), the piping system, and all the connected structures.

On site, the perceived noise can be significantly increased by reverberation effects or by the radiation of extraneous sources.

Depending on the type of pump it can be useful to know the following:

- a) the noise of the pumping system (including piping);
- b) the noise of the pump unit, including the driver and the transmission elements but excluding the noise of the piping system;
- c) the noise emitted by the pump alone, excluding the noise from the driver, transmission elements, and the piping;
- d) the noise emitted by each of those elements in respect to a given requirement or in view of an efficient sound proofing of the installation.

This document describes methods for the determination of the noise emitted by a pump unit [case b)] or a pump alone [case c)]. Noise emission is expressed in terms of the sound power level of the machine and the emission sound pressure level at the relevant work station (see 6.2).

This document is intended to enable the manufacturer to

- show the effectiveness of noise reduction, and
- declare the noise emission levels.

This document is a type-C standard as stated in ISO 12100.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document. The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

The machinery concerned and the extent to which noise is covered are indicated in the scope of this document.