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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 29529-2013

Methods of measuring and evaluating the noise of pumps

泵的噪声测量与评价方法

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. The standard proposed by China Machinery Industry Federation. This standard by the National Standardization Technical Committee pump (SAC/TC211) centralized. This standard was drafted. Shenyang Institute of pumps, Hai Kai-chuen, Pump (Group) Co., Ltd., Zibo Huacheng Pump Co., Ltd. Shandong Yen Shan Pump Co., Ltd., Seiko Boshan Pump Co., Ltd., Shanghai Electric Power Plant Co., Ltd. built, Zhejiang New Territories Pump Co., Ltd., on KSB Pumps Co., Ltd., Shanghai East Pump (Group) Co., Ltd. The main drafters of this standard. Taojie Yu, Lu Xining, Wangli Lei, Wang Lei, Li Juan, Zheng Yu, Xu Mintian, then Pan Bing, Liu Weiwei, Li Chunmei, Wang Shimin. Pump Noise Measurement and Evaluation Method

1 Scope

GB/T 29529-2013 specifies how the noise of a pump is measured and evaluated. Pump noise is a specification item in building services, in water works and in process plant, and it is also one of the easier numbers to quote misleadingly, because a pump measured on an anti-vibration mount in a hemi-anechoic room and the same pump bolted to a concrete plinth in a plant room are not the same machine acoustically. The standard fixes the conditions: the classification of the measurement methods by grade of accuracy, the requirements on the test environment and its qualification, the mounting and the connection of the pump and the treatment of the pipework, the operating conditions at which the measurement is made and their relation to the duty point, the microphone positions and the measurement surface, the determination of the sound pressure and the sound power level and the corrections applied, the evaluation and the declaration of the noise value, and the test report. This is the clear-print edition. For a pump maker, a specifier or a testing laboratory in China, this is the method behind the quoted figure.

This standard specifies the measured sound pressure level of environmental requirements on the measurement surface enveloping the pump, measuring instruments, installation and working conditions of the pump, the table Measuring and calculating the sound power level and pump noise level evaluation method of surface sound pressure level. This standard applies to various types except submerged pump, reciprocating pump, the motor-driven, the working medium is a liquid pump or pump unit.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB 3102.7 Quantities and units of acoustics

GB/T 3768 Determination of sound pressure of sound power levels of noise sources using an enveloping surface reflectance measuring surface Simple Method

GB/T 3785.1-2010 Electric Acoustic Sound Level Meters - Part 1. Specification Determination of sound power levels of noise sources anechoic and semi-anechoic chamber Precision method

GB/T 6882-2008 Acoustics sound pressure

GB/T 7021 centrifugal Terminology

GB/T 14259 on acoustic measurement of airborne noise and evaluation of its impact people's standard guidelines Statistical Methods noise emission values of the second part of

GB/T 14573.2 determining and verifying equipment provided. a single machine And test methods to determine the value of the filter plate

GB/T 14573.4 determining and verifying equipment specified in Part IV noise emission values of statistical methods. batch machine And test methods to determine the value of the filter plate

3 Terms and Definitions

GB 3102.7, GB/T 7021 and GB/T 14259 and defined by the following terms and definitions apply to this document.

3.1 Time average sound pressure level time-averaged sound pressure level $L_{peq, T}$ A continuous steady sound pressure level in the measurement time interval T , it measured the sound changes over time with the same mean-square sound pressure, also known as Equivalent sound pressure level. Time average sound pressure level according to equation (1). $L_{peq, T} = 10 \lg \left[\frac{1}{T} \int_0^T p^2(t) dt \right]$ Where. T

- measurement interval in seconds (s); p
- instantaneous sound pressure units Pa (Pa); p_0
- reference sound pressure (20 μ Pa).

Note. The average time for the A-weighted sound pressure level is generally used LAeq, T represents.