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

GB/T 27694-2011

**Safety of industrial trucks -- Test methods for measuring
vibration**

工业车辆安全 振动的测量方法

(English Translation)

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References

Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

This standard EN13059:2002 A1.2008 "Methods of measurement of vibration of industrial vehicle safety," the technical content exactly the same.

Correspondence between the consistency of the standards of international documents and normative references of the following documents.

--- GB/T 15619 Mechanical vibration and shock human exposure Vocabulary (ISO 5805).

This standard made the following editorial changes.

--- Normative references EN292-1 and EN292-2 increased provision footnote explained with ENISO 12100-1 and ENISO relationship 12100-2 and/T 15706.1 and GB/T 15706.2 correspondence with our standard GB ;

--- Remove the EN13059:2002 A1.2008 in relation to the introduction of harmonized

standards and EU directives;

--- Remove the EN13059:2002 A1.2008 Annex D (Informative Appendix) "ETRTO (European Tyre Rim Standardization Woven) information, "Appendix ZA (informative)" this European Standard and EU Directive 98/37/EC essential requirements Relations "and attached Record ZB (informative) "this European Standard and EU Directive 2006/42/EC of the basic requirements of the relationship." the standard proposed by China Machinery Industry Federation.

This standard by the National Standardization Technical Committee Vehicle (SAC/TC332) centralized.

Introduction

This standard is a type C standard EN1070 prescribed.

This standard is intended to provide a measure of industrial vehicles passed into the method of whole-body vibration of the operator to meet the Machinery Directive's information Claim. This standard is intended to measure the results obtained with the same type of industrial vehicle or a vehicle of the same industry but with different seats, Tires were a contrast. This standard does not apply to the actual operation of the daily load measuring vibration to the operator.

For measurement, the vehicle shall be provided by the manufacturer of the vehicle in the standard configuration parameters specified on the list of the equipment (lifting devices, batteries, etc.).

Type tests require accurate and repeatable results. Different test results comparable agency within a predetermined range is important of. This requires the measurement process and test methods for mechanical to be exact requirements. This process may be repeated using the machine in normal operation Typical values of whole-body vibration.

For industrial vehicles, there are three main modes of operation. running, lifting and engine idling. These three modes, the only mode of operation the operator is exposed to severe whole-body vibration. Therefore, in accordance with EN1032, whole-body vibration test based on the operating mode.

Studies have shown that hand-arm vibration acceleration value of the vehicle steering wheel or lever is usually less than 2.5m/s^2 . Therefore, there is no arm vibration Test methods.

In fact, the vibration value of the daily work is a mixture of three modes of vibration and the average value is typically lower than the present standard given vibration. work Industry vehicles with different seats, changing tires, etc. will give rise to different vibration. However, due to special handling vehicle industry, the existing the EN1032 can not be directly used to measure vibration values, so the need to develop this standard.

Although studies have shown that the test off-road industrial vehicles in the artificial test track available repeatable and representative test results, but Appendix A vehicle according to a series of process, because. when an industrial vehicle at two different times of the year to do the test and found that the vibration measured Values \u200b\u200bare approximately 20% of the difference can not be explained. As more data are available, should further consider the off-road industrial vehicles included in the present Standard body part.

For verification measurement uncertainty must be specified in accordance with the vibration emission values \u200b\u200bEN12096 reported 0.3 times. When eligible from different places Vibration radiation data obtained can be used, it should consider further revisions of the uncertainties.

Safe vibration measurement methods for industrial vehicles

1 Scope

This standard specifies under given conditions, Test Method for Measuring the industrial operator of the vehicle body vibration transmitted to. It does not include hand Arm vibration.

This standard applies to GB/T 6104-2005 listed in the motor industry and other motor vehicles are not included in GB/T 6104-2005 in Industrial vehicles such as forklifts and telescopic low lift picking trucks. Appendix A is suitable for off-road industrial vehicles.

NOTE: The standard for industrial vehicles in use also have reference value.

This standard does not apply to GB/T 6104-2005 in 3.1.3.2.3,3.1.3.1.11 defined by low lift non-stacking straddle and heap High stack lift straddle.

The results do not apply to the determination of whole-body vibration load.

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/T 6104-2005 powered industrial trucks terminology (ISO 5053. 1987) ISO 2041 Mechanical vibration, shock and condition monitoring vocabulary (Mechanicalvibration, shockandconditionmonito-ring-Vocabulary) ISO 5805 Mechanical vibration and shock human exposure vocabulary (Mechanicalvibrationandshock-Humanexpo-sure-Vocabulary) EN292-11) Safety of machinery - Basic concepts general principles for design - Part 1. Basic terminology, methodology (Safetyofmachin-ery-Basicconcepts, generalprinciplesfordesign-Part 1. Basicterminology, methodology) EN292-22) Safety of machinery - Basic concepts general principles for design - Part 2. Technical principles (Safetyofmachinery-Basicconcepts, generalprinciplesfordesign-Part 2. Technicalprincipalsandspecifications)

- 1) EN292-1:2000 has been ENISO 12100-1:2003 "Safety of machinery - Basic concepts general principles for design - Part 1. Basic terminology, square Law "replaced, and ISO 12100-1:2003 has been adopted as the equivalent of the standard GB/T 15706.1-2007.
- 2) EN292-2:2000 has been ENISO 12100-2:2003 "Safety of machinery - Basic concepts general principles for design - Part 2. Technical principles" of Generation for, while the ISO 12100-2:2003 has been adopted as the equivalent of the standard GB/T 15706.2-2007.

EN1032:1996 Mechanical vibration determination to move whole-body vibration emission values
of mechanical tests General
(Mechanicalvibration-Testingofmobilemachineryinordertodeterminethewholebodyvibrationemissionvalue-General)
EN1070 Safety of machinery - Terminology
(Safetyofmachinery-Terminology) Declaration and verification EN12096 mechanical vibration emission values
(Mechanicalvibration-Declarationandverificationofvibrationemissionvalues)

3 Terms and Definitions

GB/T 6104, ISO 2041, and the following terms and definitions as defined in ISO 5805 and EN1070 are applicable to this document.