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GB/T 8419-2023 / ISO 7096:2020

Replacing GB/T 8419-2007

**Earth-moving machinery - Laboratory evaluation of
operator seat vibration**

土方机械 司机座椅振动的实验室评价

(ISO 8096:2020, IDT)

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Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020 "Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents".

This document replaces GB/T 8419-2007 "Earth-moving machinery - Laboratory evaluation of operator seat vibration". Compared with GB/T 8419-2007, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- CHANGE the scope, adding the crawler dump trucks, horizontal directional drilling rigs and other models (see 1.3, 1.4; 1.3, 1.4 of the 2007 edition);
- CHANGE the definition of "working mass" (see 3.1.3; 3.1.3 of the 2007 edition);
- ADD the term and definition of "active and semi-active suspension system" (see 3.1.5);
- ADD general requirements (see 4.1);
- CHANGE the normative references of frequency weighting (see 4.3; 4.2 of the 2007 edition);
- CHANGE the test personnel mass and wearable mass (see 5.4; 5.4 of the 2007 edition);
- ADD the damping test of active and semi-active suspension system (see 5.5.3);
- ADD the general rules in the use information (see 8.1);
- CHANGE the power spectral density (PSD) diagrams of input spectrum classes (see Figures 2 and 4; Figures 2 and 4 of the 2007 edition);
- CHANGE the constants and maximum values of PSD calculated for input spectrum classes (see Tables 2 ~ 4; Tables 2 ~ 4 of the 2007 edition).

This document identically adopts ISO 7096:2020 "Earth-moving machinery - Laboratory evaluation of operator seat vibration".

Please note that some of the contents of this document may involve patents. The issuing agency of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document shall be under the jurisdiction of the National Technical Committee for Standardization of Earth-moving Machinery (SAC/TC 334).

Earth-moving machinery - Laboratory evaluation of operator seat vibration

1 Scope

1.1 This document specifies the laboratory measurement and evaluation methods for the efficacy of seat suspension systems in the frequency range of 1 Hz ~ 20 Hz for reducing vertical whole-body vibration transmitted to earth-moving machinery drivers, in accordance with ISO 10326-1:2016. This document also specifies the acceptance criteria for operator seats applicable to various types of machines.

1.2 This document applies to operator seats for earth-moving machinery as defined in ISO 6165.

1.3 This document specifies the required input spectrum classes for the following earth-moving machines. Each class group specifies a group of machines with similar vibration characteristics:

- Rigid frame dump trucks with a working mass > 4500 kg;
- Articulated frame dump trucks;
- Scrapers without axle or frame suspension ¹⁾;
- Wheel loaders with a working mass > 4500 kg;
- Motor graders;
- Wheel bulldozers;
- Soil compactors;
- Backhoe loaders;
- Crawler dump trucks;
- Crawler loaders;
- Crawler bulldozers with a working mass $\leq 50000\text{kg}$ ²⁾;

¹⁾ For suspended tractor scrapers, a seat without suspension or a seat with a highly damped suspension may be used.

²⁾ For crawler dozers greater than 50000 kg, a seat with a vibration-damping cushion is used to provide the required performance.

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