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

GB/T 43138-2023

**Earth-moving machinery - Lifting and tying-down attachment
points - Performance requirements**

土方机械 起吊和捆系连接点 性能要求

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents" Drafting. This document is equivalent to ISO 15818.2017 "Performance Requirements for Lifting and Tying Connection Points of Earthmoving Machinery". Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is proposed by China Machinery Industry Federation. This document is under the jurisdiction of the National Earthmoving Machinery Standardization Technical Committee (SAC/TC334). This document was drafted by: Shandong Lingong Engineering Machinery Co., Ltd., Shantui Engineering Machinery Co., Ltd., Qingdao Kangtaiyuan Construction Group Co., Ltd., Tianjin Engineering Machinery Research Institute Co., Ltd., Fangyuan Mark Certification Group Xiamen Co., Ltd., Zhubang Construction Group Co., Ltd. company. The main drafters of this document. Wang Yong, Huang Yajun, Xu Chao, Chen Shuqiao, Zhang Kunbin, Tian Zhongyi, Yang Jiuhu, Wang Bingyun, Li Xiaowei, and Zheng Rende.

The purpose of this document is to define the performance requirements for lifting and

lashing attachment points installed or included on earth moving machinery to ensure that they are effective and safe transportation. Although the machine manufacturer has no direct responsibility for such transportation, the lifting, strapping, and unpacking during transportation are described in the informative appendix. Required methods and precautions that manufacturers can use as guidance when preparing driver's manuals. The bundling requirements and recommendations given in this document are intended to match widely applied practice, as set out in the IMO/ILO/UNECE Guidelines described practice. However, if this is not the case, another or other supplementary method for securing the machine may be provided in the driver's manual. Earthmoving machinery lifting and lashing connection points Performance requirements

1 Scope

GB/T 43138-2023 sets the performance requirements for the lifting and tie-down attachment points on earth-moving machinery. An excavator is lifted onto a barge and lashed to a low-loader many times in its life, by people who did not build it, using the points welded onto it by the manufacturer; when one of those points fails the machine falls. The tie-down case is the more demanding of the two, because road and sea transport apply accelerations in every direction rather than a straight vertical pull. The standard sets the location, number and strength of the lifting points, the location, number, acceleration coefficients and strength of the tie-down points, the material requirements and the pull-pin and universal devices, the marking, the lifting and lashing instructions to be supplied, and the verification, with an annex on diagonal lashing and the balance of forces in it. It took effect on 7 September 2023.

This document specifies the performance requirements for lifting and lashing connection points of earthmoving machinery as defined in ISO 6165. This document applies to parts and assemblies of earthmoving machinery intended by the manufacturer to be lifted or lashed through separate lifting or lashing connection points. NOTE. Some components (e.g., tires, tire-tired wheels, track assemblies, hydraulic cylinders) do not require specific tie-down attachment points to be securely tied down. This document applies to the following modes of transport.

- Lifting with a crane (such as mobile crane, gantry crane);
- Road transportation (such as trucks, trailers);
- Railway transportation, including combined transportation (such as containers, interchangeable bodies, semi-trailers, trucks);
- Maritime transport. This document does not apply to the following modes of transport.
- air transport;
- Railway transportation that requires transfer. This document does not include

requirements for connecting machines to work on platforms such as rail cars, ships, etc.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

ISO 2867 Earth-moving machinery access systems
(Earth-moving machinery-Access systems)

GB/T 17300-2017 Earthmoving machinery access device (ISO 2867.2011, IDT)

ISO 6165 Earth-moving machinery-Basic types-Identifi-

GB/T 8498-2017 Basic type identification, terms and definitions of earthmoving machinery (ISO 6165.2012, IDT) ISO 6405-

1 Symbols for operator controls and other display devices of earth-moving machinery Part

3 Terms and definitions

The terms and definitions defined in ISO 6165 and below apply to this document.

3.1 A device installed on or included in earth-moving machinery for lifting the machine or disassembling the unit.