

For Comments Only

BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा

भू-संचलन मशीनरी — संघात चेतावनी एवं परिवर्जन
भाग 1 सामान्य अपेक्षाएं

(ISO 21815-1 का अधिग्रहण)

Draft Indian Standard

**EARTH-MOVING MACHINERY — COLLISION WARNING AND AVOIDANCE —
PART 1 GENERAL REQUIREMENTS**

(*Adoption of ISO 21815-1*)

ICS 53.100

Earth Moving Equipment and Material Handling
Sectional Committee, MED 07

Last date for receipt of comments is
09 April 2024

NATIONAL FOREWORD

(Formal Clause to be added later)

The text of ISO standard is proposed for publication as an Indian Standard without deviations. Certain terminologies and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- Comma (,) has been used as a decimal marker, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standard, which are to be substituted in their respective place, are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
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ISO 3450 : 2011 Earth-moving machinery — Wheeled or high-speed rubber-tracked machines — Performance requirements and test procedures for brake systems	IS 16479 : 2020 Performance requirements and test procedures of braking systems for wheeled or high-speed rubber tracked earth moving machines and construction equipment vehicles (<i>first revision</i>)	Identical under dual numbering
ISO 12100 : 2010 Safety of machinery — General principles for design — Risk assessment and risk reduction	IS 16819 : 2018 / ISO 12100:2010 Safety of machinery - General principles for design - Risk assessment and risk reduction	Identical under dual numbering
ISO 13766-1:2018 Earth-moving and building construction machinery — Electromagnetic compatibility (EMC) of machines with internal electrical power supply — Part 1: General EMC requirements under typical electromagnetic environmental conditions.	IS/ISO 13766-1 : 2018 Earth-moving and building construction machinery — Electromagnetic compatibility (EMC) of machines with internal electrical power supply Part 1 General EMC requirements under typical electromagnetic environmental conditions	Identical under single numbering
ISO 13766-2:2018 Earth-moving and building construction machinery — Electromagnetic compatibility (EMC) of machines with internal electrical power supply — Part 2: Additional EMC requirements for functional safety	IS/ISO 13766-2 : 2018 Earth-moving and building construction machinery — electromagnetic compatibility (EMC) of machines with internal electrical power supply Part 2 Additional EMC requirements for functional safety	Identical under single numbering
ISO 19014-1 : 2018 Earth-moving machinery — Functional safety — Part 1: Methodology to determine safety-related parts of the control system and performance requirements	IS/ISO 19014-1 : 2018 Earth-moving machinery - functional safety Part 1 Methodology to determine safety-related parts of the control system and performance requirements.	Identical under single numbering
ISO 19014-3 : 2020 Earth-moving machinery — Functional safety — Part 3:	IS/ISO 19014-3 : 2018 Earth-moving machinery - functional safety Part 3 Environmental	Identical under single numbering

Environmental performance and test requirements of electronic and electrical components used in safety-related parts of the control system	performance and test requirements of electronic and electrical components used in safety-related parts of the control system	
ISO 13849-1 : 2023 Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design	IS 16810 (Part 1) : 2018/ISO 13849-1:2015 Safety of machinery - Safety related parts of control systems: Part 1 General principles for design	Identical under dual numbering
ISO 13849-2 : 2012 Safety of machinery — Safety-related parts of control systems — Part 2: Validation	IS 16810 (Part 2) : 2018/ISO 13849-2 : 2012 Safety of machinery - Safety related parts of control systems: Part 2 Validation	Identical under dual numbering

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2:2022 ‘Rules for rounding off numerical values (revised)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

NOTE — The technical content of the document has not been enclosed as these are identical with the corresponding ISO standard. For details, please refer the corresponding ISO 21815-1 : 2022 or kindly contact:

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