

**BUREAU OF INDIAN STANDARDS**  
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***Draft Indian Standard***

**SAFETY OF MACHINERY — ELECTRO-SENSITIVE PROTECTIVE EQUIPMENT  
PART 4 PARTICULAR REQUIREMENTS FOR EQUIPMENT USING VISION BASED  
PROTECTIVE DEVICES (VBPD ) SECTION 2 ADDITIONAL REQUIREMENTS  
WHEN USING REFERENCE PATTERN TECHNIQUES ( VBPDPP )  
(First Revision of IS 16502 (Part 4/Sec 2): 2021)**

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Safety Of Machinery- Electrotechnical Aspects  
Sectional Committee, ETD 44

Last date of comments: 15 December 2023

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NATIONAL FOREWORD

This draft Indian Standard which is identical with IEC TS 61496-4-2:2022 ‘safety of machinery — electro-sensitive protective equipment part 4 particular requirements for equipment using vision based protective devices (VBPD ) section 2 additional requirements when using reference pattern techniques (VBPDPP)’ issued by the International Electrotechnical commission (IEC) will be adopted by the Bureau of Indian Standards on the recommendation of the Safety Of Machinery- Electrotechnical Aspects Sectional Committee and approval of the Electrotechnical Division Council.

This standard was first published in 2021 identical to IEC 61496-4-2:2014. This revision has been undertaken to align this standard with the latest version of IEC 61496-4-2.

The text of the IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words ‘International Standard’ appears referring to this standard, they should be read as ‘Indian Standard’.
- b) 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 International Standards for which Indian Standards also exists. The corresponding Indian Standards, which are to be substituted, 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>
IEC 61496-1:2020, Safety of machinery – Electro-sensitive protective equipment – Part 1: General requirements and tests	IS 16502 (Part 1) : 2023 Safety of machinery Electro-sensitive protective equipment Part 1 General requirements and tests	Identical with IEC 61496-1 : 2020
IEC 62471:2006, Photobiological safety of lamps and lamp systems	IS 16108 : 2012 Photobiological safety of lamps and lamp systems	Identical with IEC 62471:2006
ISO 13855:2010, Safety of machinery – Positioning of safeguards with respect to the approach speeds of parts of the human body	IS 16815 : 2019 Safety of machinery - Positioning of safeguards with respect to the approach speeds of parts of the human body	Identical with ISO 13855:2010
ISO 20471, High-visibility clothing – Test methods and requirements	IS 15809 : 2017 High visibility warning clothes – Specification (first revision)	Identical with ISO 20471

The technical committee has reviewed the provisions of the following International Standards/Other Publications referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard:

<i>International Standard</i>	<i>Title</i>
IEC 60825-1:2014	Safety of laser products – Part 1: Equipment classification and requirements

Only English language text has been retained while adopting it in this Indian Standard, and as such the page numbers given here are not the same as in the International Standard.

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, 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 is not available on website. For details, please refer the corresponding IEC TS 61496-4-2:2022 or kindly contact:

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## **Scope**

Replacement:

This document specifies requirements for the design, construction and testing of non-contact electro-sensitive protective equipment (ESPE) designed specifically to detect persons as part of a safety-related system, employing vision-based protective devices (VBPDs) using reference pattern techniques (VBPDP) for the sensing function. Special attention is directed to features which ensure that an appropriate safety-related performance is achieved. An ESPE can include optional safety-related functions, the requirements for which are given in Annex A of IEC 61496-1:2020 and this document.