

Re: Request for approval for gazette notification of ETD 21 Document : Doc ETD 21 (22540)**From :** rajput ashok <rajput.ashok@gmail.com>

Mon, Aug 05, 2024 01:29 AM

Subject : Re: Request for approval for gazette notification of ETD 21 Document : Doc ETD 21 (22540)**To :** ETD DEPARTMENT <eetd@bis.gov.in>**Cc :** sethupraba@gmail.com, Head Electrotechnical <heetd@bis.gov.in>, Sheetal Sumeet Jain <sheetal1972@nic.in>

Sir

May be considered as APPROVED.

On Fri, Jul 26, 2024 at 3:19PM ETD DEPARTMENT <eetd@bis.gov.in> wrote:

Dear Sir,

This has reference to the trailing email dated 14-05-2024.

This standard covers non-thermal biological effects in the frequency range from 0 Hz to 10 MHz. It defines standardized test scenarios for these assessments. Though the title indicates the total range of electromagnetic field, the actual scope of this standard is much narrower, concentrating on the relevant frequencies for arc welding equipment.

The 0 Hz (DC) to 300 GHz range is chosen for EMF exposure assessment because it comprehensively covers all the relevant electromagnetic fields that humans are likely to encounter, ensuring that safety guidelines and standards are robust, well-researched and applicable to real-world scenarios.

0 Hz (DC) to 300 GHz covers a wide spectrum of electromagnetic fields, including static fields, power frequency fields, radiofrequency fields and microwave fields. This range includes the most commonly encountered EMF sources in both occupational and general public environments.

Frequency Range Breakdown:

0 Hz - 10 kHz: Includes static magnetic fields and extremely low-frequency (ELF) fields, such as those from power lines (50/60 Hz) and industrial equipment. Non-thermal effects, like nerve and muscle stimulation, are primary concerns here.

10 kHz - 300 MHz: Covers the lower radiofrequency (RF) range, including AM/FM radio, television broadcasts, and various industrial applications. Both thermal and non-thermal effects, such as tissue heating and potential long-term biological effects, are considered.

300 MHz - 300 GHz: Encompasses higher RF and microwave frequencies, including mobile phones, Wi-Fi, radar, and microwave ovens. The primary concern at these frequencies is thermal effects, where tissue heating becomes significant.

Electromagnetic fields above 300 GHz fall into the terahertz and infrared regions, which are generally less relevant to typical human exposure scenarios. They are usually considered under optical radiation safety standards.

All International standards are using this range to ensure comprehensive safety measures. The following International Standards are also sharing the 0 to 300 GHz in their titles:

- IEC 62311: 2019- Assessment of Electronic and Electrical Equipment related to Human Exposure Restrictions for Electromagnetic Fields (0 Hz To 300 GHz)
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) - Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic and Electromagnetic Fields (up to 300 GHz).

The maximum welding current waveform frequency considered in IEC 62822-2: 2016 is 10 MHz. However, there are welding methods that use microwaves in the range of 2.45 GHz, and in the future, many other methods adopting GHz frequencies may be developed. Therefore, the title does not need to be modified or altered at this point. Instead, it should be adopted as is.

Although IEC 62322-2 is of the year 2016 however the standard shall remain active at IEC up to 2026.

In view of this, it is requested to kindly approve the following document for printing:

Sr. No.	Doc. No.	Doc. Type	Title
01.	ETD 21 (22540) IEC 62822-2: 2016	New	Electric Welding Equipment - Assessment of restrictions related to human exposure to electromagnetic fields (0 Hz to 300 GHz) - Part 2: Arc welding equipment

With regards,

Emanuel Abhishek Murmu

Sc-C & Member Secretary ETD 21

विद्युत तकनीकी विभाग | **Electrotechnical Department**भारतीय मानक ब्यूरो | **Bureau of Indian Standards**उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय | **Ministry of Consumer Affairs, Food & Public Distribution**भारत सरकार | **Government of India**मानक भवन, 9 बहादुरशाह ज़फर मार्ग | **Manak Bhawan, 9 Bahadur Shah Zafar Marg**नई दिल्ली - ११०००२ | **New Delhi - 110002**दूरभाष Phone: **+91 011 23231192, 2360 8271/8356/8427/8405**ईमेल e-Mail: **eetd@bis.gov.in** | वेबसाइट Website: **www.bis.gov.in**

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From: "rajput ashok" <rajput.ashok@gmail.com>
To: "ETD DEPARTMENT" <eetd@bis.gov.in>
Cc: "Sheetal Sumeet Jain" <sheetal1972@nic.in>
Sent: Tuesday, May 14, 2024 2:12:27 AM
Subject: Re: Request for approval for gazette notification of ETD 21 Document : Doc ETD 21 (22540)

Sir Approved: Subject to following reconciliation/review/re-check:
 The title of the Document is "ELECTRIC WELDING EQUIPMENT — ASSESSMENT OF RESTRICTIONS RELATED TO HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS (0 Hz to 300 GHz)"

Whereas the scope mentions as "This standard specifies procedures for the assessment of human exposure to magnetic fields produced by arc welding. It covers non-thermal biological effects in the frequency range from 0 Hz to 10 MHz and defines standardized test scenarios." - it seems to be a discrepancy.

The following deserves attention:
 IS 16593 (Part 2) : 2024
 IEC 62822-2 : 2016

IEC is of 2016, which we are going to adopt in 2024, a large gap?

On Tue, Apr 23, 2024 at 2:57 PM ETD DEPARTMENT <eetd@bis.gov.in> wrote:

Gentle Reminder!

With regards,

Emanuel Abhishek Murmu

Scientist-C

विद्युत तकनीकी विभाग | **Electrotechnical Department**

भारतीय मानक ब्यूरो | **Bureau of Indian Standards**

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नई दिल्ली - ११०००२ | **New Delhi - 110002**

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ईमेल **e-Mail: eetd@bis.gov.in** | वेबसाइट **Website: www.bis.gov.in**

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From: "ETD DEPARTMENT" <eetd@bis.gov.in>
To: "Ashok Kumar Rajput" <akrajput@nic.in>, "rajput ashok" <rajput.ashok@gmail.com>
Sent: Thursday, April 18, 2024 2:50:05 PM
Subject: Request for approval for gazette notification of ETD 21 Document : Doc ETD 21 (22540)

Our Ref: ETD 21/G-1

12 April 2024

Subject: Approval for gazette notification of ETD 21 document as Indian Standards.

Dear Sir,

This has reference to the following revision to Indian Standard finalized under Electric Welding Equipment Sectional Committee, ETD 21:

S.N.	Doc. No.	Document type	Title
1.	ETD 21 (22540) IS 16593 (Part 2) : 2024 IEC 62822-2: 2016	New	Electric Welding Equipment — Assessment of Restrictions Related to Human 300 GHz) Part 2 Arc Welding Equipment

In accordance with BIS Act 2016, I enclose copy of revision to Indian Standard mentioned above finalized by 'Electric Welding Equipment Sectional Committee, ETD 21' in the light of comments received from important producers, consumers, technologists, members of Electrotechnical Division Council (ETDC).

It is requested that this note and its enclosure may be returned to this office as early as possible recording your approval for the adoption of new and amendment to Indian Standard as stated above on behalf of the Electrotechnical Division Council (ETDC).

I shall be glad, if you return the above document as early as possible, according your approval as **Chairman, ETDC** for its publication as Indian Standard.

Thanking you,
 Yours sincerely,

Asit Kumar Maharana
Scientist 'E' & Head (ETD)

Encl: As above

विद्युत तकनीकी विभाग | **Electrotechnical Department**

भारतीय मानक ब्यूरो | Bureau of Indian Standards
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From: "ETD DEPARTMENT" <eedt@bis.gov.in>
To: "Ashok Kumar Rajput" <akrajput@nic.in>, "rajput ashok" <rajput.ashok@gmail.com>
Sent: Friday, April 12, 2024 5:32:00 PM
Subject: Request for approval for gazette notification of ETD 21 Document : Doc ETD 21 (22540)

Our Ref: ETD 21/G-1

12 April 2024

Subject: Approval for gazette notification of ETD 21 document as Indian Standards.

Dear Sir,

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1.	ETD 21 (22540) IS 16593 (Part 2) : 2024 IEC 62822-2: 2016	New	Electric Welding Equipment — Assessment of Restrictions Related Fields (0 Hz to 300 GHz) Part 2 Arc Welding Equipment

In accordance with BIS Act 2016, I enclose copy of revision to Indian Standard mentioned above finalized by 'Electric Welding Equipment Sectional Committee, ETD 21' in the light of comments received from important producers, consumers, technologists, members of Electrotechnical Division Council (ETDC).

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Thanking you,
Yours sincerely,

Asit Kumar Maharana
Scientist 'E' & Head (ETD)

Encl: As above

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Regards
Ashok Kumar Rajput
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Mobile No.-+919868202176
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Regards

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