



# भारतीय मानक ब्यूरो BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG, NEW DELHI 110002

Phone: + 91 11 23230131, 23233375, 23239402 Extn 8406, 23608406; Website: www.bis.gov.in

## व्यापक परिचालन मसौदा

हमारा संदर्भ : सीईडी 43/टी-121

17 नवम्बर 2022

तकनीकी समिति : मृदा एवं नींव इंजीनियरी विषय समिति, सीईडी 43

प्राप्तकर्ता :

- 1 सिविल इंजीनियरी विभाग परिषद, सीईडीसी के सभी सदस्य
- 2 मृदा एवं नींव इंजीनियरी विषय समिति, सीईडी 43 के सभी सदस्य
- 3 रूचि रखने वाले अन्य निकाय।

महोदया/महोदय,

निम्नलिखित मसौदा संलग्न है:

प्रलेख संख्या	शीर्षक
सीईडी 43 (21226)WC	कोर कटर विधि द्वारा मृदा के शुष्क घनत्व के निर्धारण के लिए उपकरण - विशिष्ट का भारतीय मानक मसौदा (IS 13468 का पहला पुनरीक्षण) (ICS No. 93.020; 13.080.20)

कृपया इस मसौदे का अवलोकन करें और अपनी सम्मतियाँ यह बताते हुए भेजे कि यह मसौदा प्रकाशित हो तो इस पर अमल करने में, आपको व्यवसाय अथवा कारोबार में क्या कठिनाइयाँ आ सकती हैं।

**सम्मतियाँ भेजने की अंतिम तिथि: 18 दिसम्बर 2022**

सम्मति यदि कोई हो तो कृपया अधोहस्ताक्षरी को ई मेल द्वारा [madhurima@bis.gov.in](mailto:madhurima@bis.gov.in) पर या उपरलिखित पते पर, संलग्न फॉर्मेट में भेजें।

यदि कोई सम्मति प्राप्त नहीं होती है अथवा सम्मति में केवल भाषा संबंधी त्रुटि हुई तो उपरोक्त प्रलेख को यथावत अंतिम रूप दे दिया जाएगा। यदि सम्मति तकनीकी प्रकृति की हुई तो विषय समिति के अध्यक्ष के परामर्श से अथवा उनकी इच्छा पर आगे की कार्यवाही के लिए विषय समिति को भेजे जाने के बाद प्रलेख को अंतिम रूप दे दिया जाएगा।

यह प्रलेख भारतीय मानक ब्यूरो की वेबसाइट [www.bis.gov.in](http://www.bis.gov.in) पर भी उपलब्ध हैं।

धन्यवाद।

भवदीय

ह/-

(अरुण कुमार एस.)

वै. 'ई'/निर्देशक और प्रमुख (सिविल इंजीनियरी)

संलग्न: उपरलिखित



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**DRAFT IN  
WIDE CIRCULATION**

## DOCUMENT DESPATCH ADVICE

Reference	Date
CED 43/T-121	17 November 2022

### TECHNICAL COMMITTEE:

**SOIL AND FOUNDATION ENGINEERING SECTIONAL COMMITTEE, CED 43**

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### ADDRESSED TO:

1. All Members of Civil Engineering Division Council, CEDC
2. All Members of Soil and Foundation Engineering Sectional Committee, CED 43
3. All others interests

Dear Madam/Sir,

Please find enclosed the following draft:

Doc. No.	Title
CED 43 (21226)WC	<b>Draft Indian Standard Apparatus for Determination of Dry Density of Soil by Core Cutter Method — Specification (<i>First Revision of IS 13468</i>)</b> <b>(ICS No. 93.020; 13.080.20)</b>

Kindly examine the draft and forward your views stating any difficulties which you are likely to experience in your business or profession, if this is finally adopted as National Standard.

**Last Date for comments: 18 December 2022**

Comments if any, may please be made in the enclosed format and emailed at **madhurima@bis.gov.in** or sent at the above address.

In case no comments are received or comments received are of editorial nature, you will kindly permit us to presume your approval for the above document as finalized. However, in case comments, technical in nature are received, then it may be finalized either in consultation with the Chairman, Sectional Committee or referred to the Sectional Committee for further necessary action if so desired by the Chairman, Sectional Committee.

The document is also hosted on BIS website **www.bis.gov.in**.

Thanking you,

Yours faithfully,

Sd/-

**(Arun Kumar S.)**

**Sc. 'E'/Director and Head (Civil Engg.)**

Encl: As above



**BUREAU OF INDIAN STANDARDS**

**DRAFT FOR COMMENTS ONLY**

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***Draft Indian Standard***

**APPARATUS FOR DETERMINATION OF DRY DENSITY OF SOIL  
BY CORE CUTTER METHOD — SPECIFICATION**

*(First Revision of IS 13468)*

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Soil and Foundation Engineering  
Sectional Committee, CED 43

Last date for Comments:  
**18 December 2022**

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Soil and Foundation Engineering Sectional Committee, CED 43

**FOREWORD**

*(Formal clauses to be added later)*

There is a series of standards on methods of testing of soils. It has been recognized that reliable and inter-comparable test results can be obtained only with the standard testing equipment capable of giving that desired level of accuracy. With this objective, a series of specifications covering the requirements of equipment used for testing soils have been published to encourage their development and manufacture in the country.

The equipment covered in this standard is meant to be used for the determination of dry density of soils in place by core cutter method covered in IS 2720 (Part 29) : 1975 'Methods of test for soil: Part 29 Determination of dry density of soil in-place by the core-cutter method (*first revision*)'.

This standard was first published in 1992. The present revision has been taken up with a view to incorporating the modifications found necessary as a result of experience gained in the use of this standard. Also, in this revision, the standard has been brought into latest style and format of Indian Standards, and references to Indian Standards, wherever applicable have been updated. The other major modifications incorporated in this revision of the standard are given below:

- a) Thickness of the dolly has been changed to minimum 20 mm from 10 mm to avoid the compaction of the sample during final stages of hammering.
- b) Diameter of the dolly has been changed to  $107 \pm 0.25$  mm from  $108 \pm 0.25$  mm to reduce the gap between core cutter's outer edge and dolly's inner edge.
- c) Figure of the rammer has been updated for ensuring strong connection/jointing between handle and base of the rammer.
- d) BIS certification marking clause has been modified to align with the revised *Bureau of Indian Standards Act, 2016*.

This standard contributes to the Sustainable Development Goal 9 - Industry, Innovation and Infrastructure: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

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 (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

**BUREAU OF INDIAN STANDARDS**

**DRAFT FOR COMMENTS ONLY**

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***Draft Indian Standard***

**APPARATUS FOR DETERMINATION OF DRY DENSITY OF SOIL  
BY CORE CUTTER METHOD — SPECIFICATION**

*(First Revision of IS 13468)*

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Soil and Foundation Engineering  
Sectional Committee, CED 43

Last date for Comments:  
**18 December 2022**

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**1 SCOPE**

This standard covers the details of the cylindrical core cutter, steel dolly and steel rammer used for the determination of in-place dry density of fine grained natural or compacted soils free from aggregates, using a core cutter.

**2 REFERENCES**

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
1239 (Part 1) : 2004	Steel tubes, tubulars and other wrought steel fittings — Specification : Part 1 Steel tubes ( <i>sixth revision</i> )
1875 : 1992	Carbon steel billets, blooms, slabs and bars for forgings — Specification ( <i>fifth revision</i> )
2102 (Part 1) : 1993	General tolerances: Part 1 Tolerances for linear and angular dimensions without individual tolerance indications ( <i>third revision</i> )
4432 : 1988	Specification for cast-hardening steels ( <i>first revision</i> )

**3 MATERIALS**

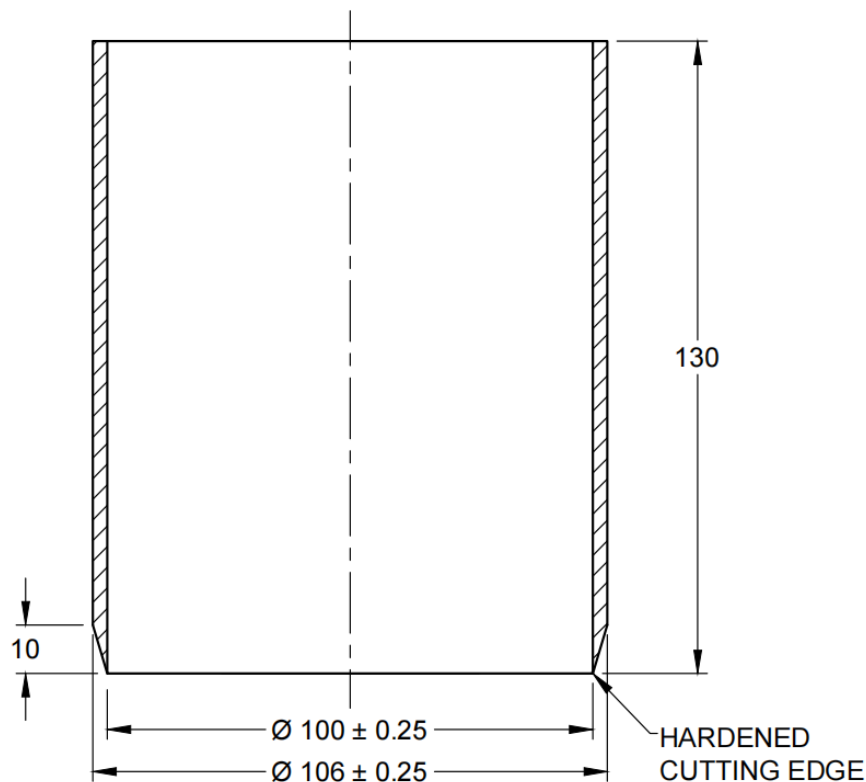
The material of construction of the various equipment parts shall be as given in Table 1.

**Table 1 Materials of Construction of Different Component Parts**  
(Clause 3)

SI No.	Apparatus Part	Material	Special Requirement, if any	Conforming to Indian Standard
(1)	(2)	(3)	(4)	(5)
i)	Cutter-seamless steel tube bevelled one end (see Fig. 1)	Case hardening steel	Tip case hardened to 40HRC, <i>Min</i>	IS 4432
ii)	Dolly-steel with a lip to enable to be fitted on top of cutter (see Fig. 2)	Case hardening steel	—	IS 4432
iii)	Rammer (see Fig. 3)	Steel	—	IS 1875
iv)	Handle for rammer-push fitted or concentrically screwed	Mild steel tube	—	IS 1239 (Part 1)

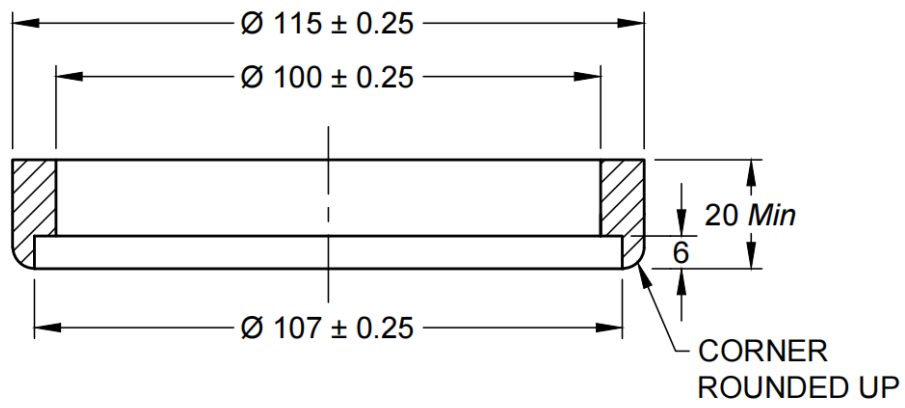
#### 4 DIMENSIONS AND TOLERANCES

Dimensions with tolerances of different component parts of the apparatus shall be as given in Fig. 1 to Fig. 3. Except where specially mentioned, all dimensions shall be taken as nominal and tolerances as given in IS 2102 (Part 1) of medium class shall apply.



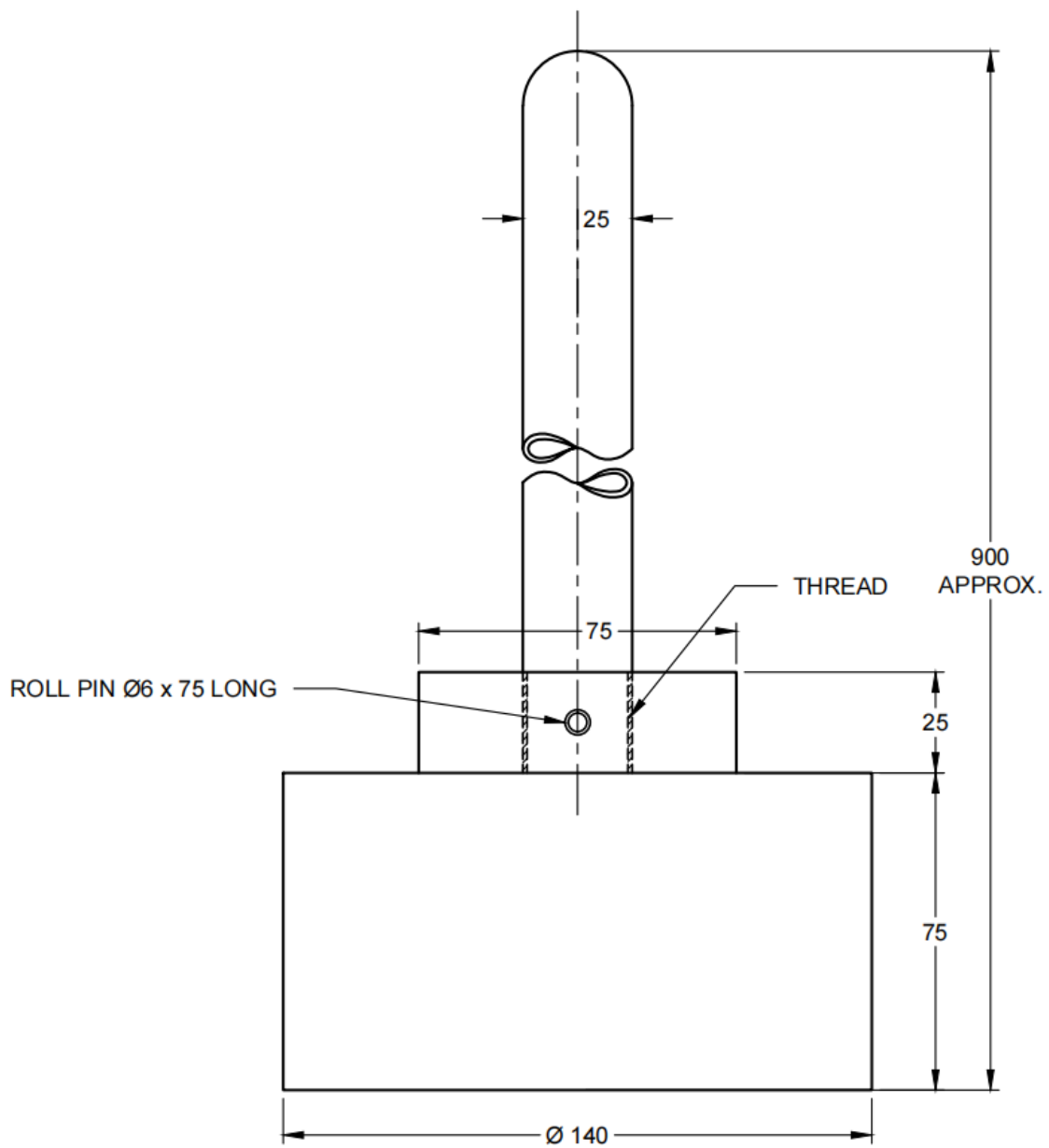
All dimensions in millimetres.

FIG. 1 CUTTER



All dimensions in millimetres.

FIG. 2 DOLLY



All dimensions in millimetres.

FIG. 3 RAMMER



## **5 MARKING**

**5.1** The following information shall be clearly and indelibly marked on each apparatus:

- a) Name of the manufacturer or his registered trade-mark or both;
- b) Serial number of the product; and
- c) Date of manufacture.

### **5.2 BIS Certification Marking**

The product conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the product may be marked with the Standard Mark.