



भारतीय मानक ब्यूरो BUREAU OF INDIAN STANDARDS

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

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व्यापक परिचालन मसौदा

हमारा संदर्भ : सीईडी 43/टी-101

17 अक्टूबर 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 रुचि रखने वाले अन्य निकाय।

महोदया/महोदय,

निम्नलिखित मसौदा संलग्न है:

प्रलेख संख्या	शीर्षक
सीईडी 43 (20693)WC	भू बरमा (सर्पिल प्रकार) – विशिष्ट का भारतीय मानक मसौदा (IS 10442 का पहला पुनरीक्षण) (ICS No. 93.020; 13.080.05)

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: 17 नवंबर 2022

सम्मति यदि कोई हो तो कृपया अधोहस्ताक्षरी को ई मेल द्वारा 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 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-101	17 October 2022

TECHNICAL COMMITTEE:

SOIL AND FOUNDATION ENGINEERING SECTIONAL COMMITTEE, CED 43

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 other interests

Dear Madam/Sir,

Please find enclosed the following draft:

Doc. No.	Title
CED 43 (20693)WC	Draft Indian Standard Earth Augers (Spiral Type) — Specification (<i>First Revision of IS 10442</i>) (ICS No. 93.020; 13.080.05)

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: 17 November 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

EARTH AUGERS (SPIRAL TYPE) — SPECIFICATION

(First Revision of IS 10442)

Soil and Foundation Engineering
Sectional Committee, CED 43

Last date of Comments:
17 November 2022

Soil and Foundation Engineering Sectional Committee, CED 43

FOREWORD

(Formal clauses will 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 used for piling work, soil boring and sampling works.

This standard was first published in 1983. 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) Relevant grade of carbon and alloy tool steel as per the revised IS 1570 (Part 6) : 1996 'Schedules for wrought steels: Part 6 Carbon and alloy tool steels (first revision)' has been specified.
- b) 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

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Draft Indian Standard

EARTH AUGERS (SPIRAL TYPE) — SPECIFICATION

(First Revision of IS 10442)

Soil and Foundation Engineering
Sectional Committee, CED 43

Last date of Comments:
17 November 2022

1 SCOPE

This standard covers dimensional and general requirements for earth augers (spiral type), used in piling, soil boring and sampling works.

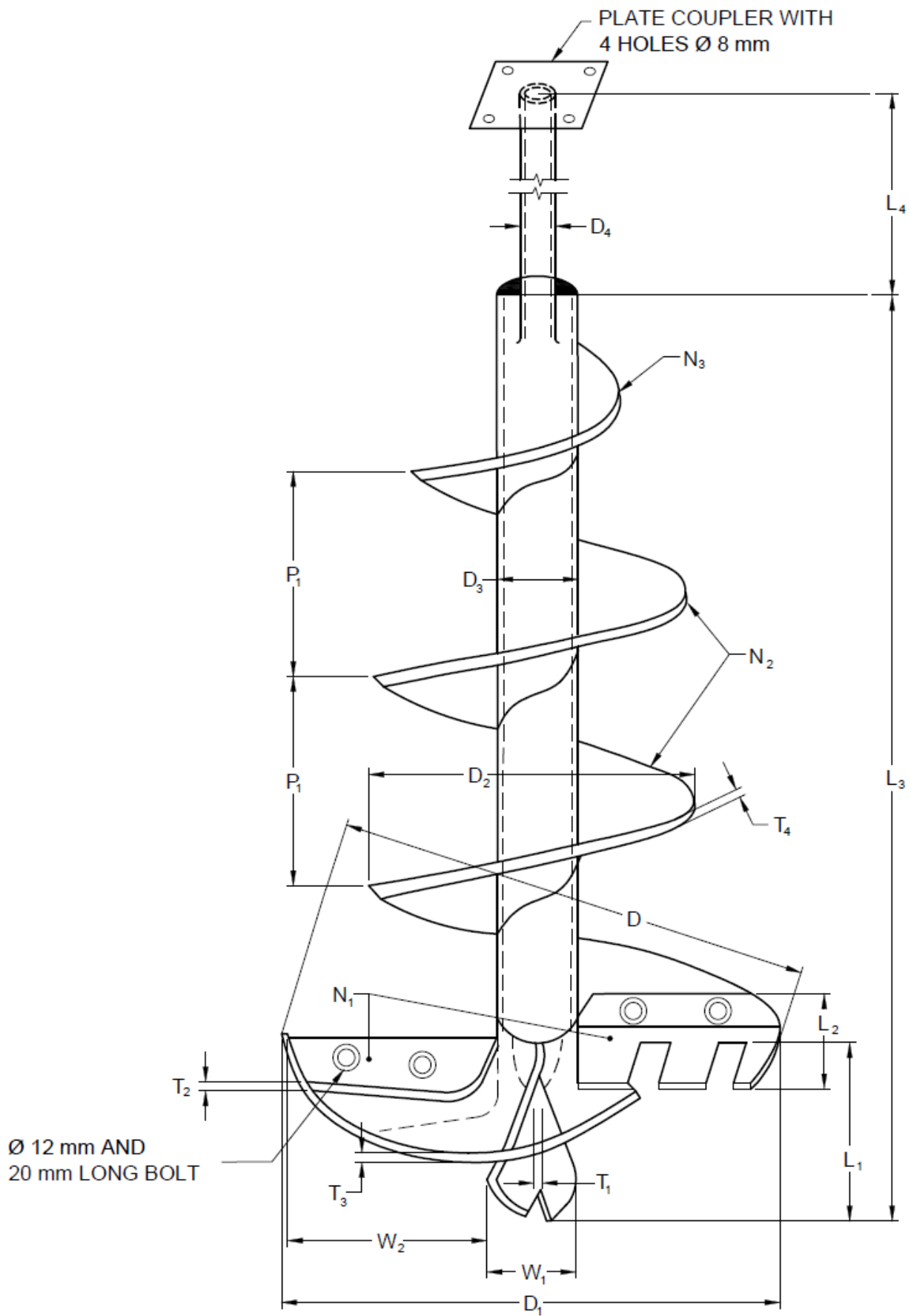
2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication the editions indicated are 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>
513 (Part 1) : 2016	Cold reduced carbon steel sheet and strip: Part 1 Cold forming and drawing purpose (<i>sixth revision</i>)
1239 (Part 1) : 2004	Steel tubes, tubulars and other wrought steel fittings — Specification: Part 1 Steel tubes (<i>sixth revision</i>)
1501 (Part 1) : 2020/ ISO 1507-1 : 2018	Metallic materials — Vickers hardness test: Part 1 Test method (<i>fifth revision</i>)
1570 (Part 6) : 1996	Schedules for wrought steels: Part 6 Carbon and alloy tool steels (<i>first revision</i>)

3 SIZES, DIMENSIONS AND TOLERANCES

These shall be as given in Table 1, read with Fig. 1. The nominal size refers to the diameter bored by augers.



THE ANGLE OF TAPER FOR BLADES SHALL BE $30 \pm 5^\circ$.

FIG. 1 EARTH AUGER (SPIRAL TYPE)

Table 1 Sizes, Dimensions and Tolerances of Auger
(Clause 3)

SI No.	Nominal Size	Pilot Bits			Blades				Base Plate		Spirals					Shaft			
		D mm	L_{1-3}^{+5} mm	W_{1-3}^{+5} mm	T_{1-1}^{+1} mm	L_{2-3}^{+5} mm	W_{2-3}^{+5} mm	T_{2-1}^{+1} mm	N_1 Nos	D_{1-4}^{+5} mm	T_{3-1}^{+1} mm	D_{2-4}^{+5} mm	$T_{4-0.5}^{+1}$ mm	P_1 mm	N_2 Nos	N_3 Nos	$L_{3\pm 5}$ mm	$D_{3-0.5}^{+0.5}$ mm	$L_{4\pm 5}$ mm
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
i)	100	60	25	6	50	40.0	6	1	90	8	85	3	85 ± 5	3	1	250	26.9	750	26.9
ii)	150	90	40	6	80	57.5	6	1	140	8	135	3	85 ± 5	3	1	300	33.8	700	33.8
iii)	200	115	50	8	115	77.5	8	1	185	8	150	3	110 ± 5	3	1	400	42.5	600	42.5
iv)	250	115	50	8	115	102.5	8	1	235	8	230	3	110 ± 5	3	1	400	42.5	600	42.5
v)	300	115	50	8	125	127.5	8	1	285	8	280	3	110 ± 5	3	1	400	42.5	600	42.5
vi)	375	150	100	12	150	147.5	10	2	360	10	350	4	165 ± 5	2	1	550	76	450	42.5
vii)	400	150	100	12	150	160.0	10	2	385	10	375	4	165 ± 5	2	1	550	76	450	42.5
viii)	450	150	100	12	150	185.0	10	2	435	12	425	4	165 ± 5	2	1	550	76	450	48.4
ix)	500	150	100	12	150	210.0	10	2	485	12	475	4	165 ± 5	2	1	550	76	450	48.4
x)	550	150	100	12	150	235	10	2	535	12	520	4	200 ± 10	2	1	650	88.7	350	60.2
xi)	600	150	100	12	150	260	10	2	585	12	570	4	200 ± 10	2	1	650	88.7	350	60.2

4 MATERIALS

The material for construction of various parts of earth augers (spiral type) shall be as given in Table 2.

Table 2 Materials of Construction of Parts of Earth Auger (Spiral Type)
(Clause 4)

Sl No.	Part	Material	Specific Requirement, if any	Relevant Grade/Conforming to Indian Standard
(1)	(2)	(3)	(4)	(5)
i)	Pilot bit	Steel	-	Grade TC 11 of IS 1570 (Part 6)
ii)	Blades	Steel	-	Grade TC 11 of IS 1570 (Part 6)
iii)	Base plate	Mild steel	-	IS 513 (Part 1)
iv)	Spirals	Mild steel	-	IS 513 (Part 1)
v)	Pipe shaft	Mild steel		Heavy grade as specified in IS 1239 (Part 1)
vi)	Couplers	Mild steel	Hardened and tempered to produce a hardness reading within range 360 to 420 HV 10 [see IS 1501 (Part 1)]	IS 513 (Part 1)
vii)	Extension rods	Mild steel	-	Heavy grade as specified in IS 1239 (Part 1)
viii)	Handles and extension to handles	Mild steel	-	Heavy grade as specified in IS 1239 (Part 1)

5 CONSTRUCTION

The blade shall be either plain or toothed (see Fig. 1). The edges of the blade shall be backed with non-erodable welding so as to have hardness 600 x 700 HV 10 [see IS 1501 (Part 1)]. The angle of taper for blades shall be $30 \pm 5^\circ$. The pilot bit, blades, spirals and coupler shall be welded to the shaft. The plate coupler shall be of size 100 x 75 x 8 mm except for auger sizes 550 mm and 600 mm, for which it shall be 125 x 100 x 8 mm.

6 PERFORMANCE TEST

The auger shall bore satisfactorily a minimum depth of spiral length in a fairly consolidated soil. The auger shall not be withdrawn during the test but shall withdraw easily after it reaches to the required depth. At the end of the test, the auger shall show no sign of damage, fracture or flaw.

7 WORKMANSHIP

The blades and pilot bits shall be free from cracks, seams, etc.

8 TREATMENT

The auger shall be coated with one coat of red oxide or anti-corrosive painted with blue enamel paint.

9 MARKING

9.1 The following information shall be clearly and indelibly marked on each auger:

- a) Name of the manufacturer or his registered trade-mark or both;
- b) Type (see 5); and
- b) Date of manufacture.

9.2 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.