भारतीय मानक

Indian Standard

IS 1461 : 2024

प्लास्टिक बटन (थर्मोसेटिंग) —विशिष्टि

(तीसरा पुनरीक्षण)

Plastic Buttons (Thermosetting) — Specification

(Third Revision)

ICS 83.140.20

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भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002
www.bis.gov.in www.standardsbis.in

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Price Group 4

Plastics Sectional Committee, PCD 12

FOREWORD

This Indian Standard (Third Revision) was adopted by the bureau of Indian Standards, after the draft finalized by the Plastics Sectional Committee had been approved by the Petroleum, Coal and Related Products division Council.

This standard was originally published in 1959 and was subsequently revised in 1966 and 1984.

In originality, the standard covered urea-formaldehyde, melamine-formaldehyde and phenol-formaldehyde-based plastic buttons (thermosetting). However, it has been observed during the review of the standard that plastic buttons are now made from unsaturated polyester resin (UPR). In light of this, the Plastics Sectional Committee has decided to modify the scope of the standard

The major modifications incorporated in this revision are as follows:

a) The scope of the standard has been modified;
b) Curing test and fastness to organic solvent has been deleted;
c) The amendment published has been incorporated; and
d) Cross-referred standard has been updated.

This standard contains **5.1**, **5.2**, **5.3** and **6.1** which call for agreement between the purchaser and the supplier and which permit the purchaser to use the option for selection to suit their requirement.

The composition of the Committee responsible for the formulation of this standard is given in Annex A.

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.

Indian Standard

PLASTIC BUTTONS (THERMOSETTING) — SPECIFICATION

(Third Revision)

1 SCOPE

This standard prescribes the requirements and methods of sampling and test for plastic buttons (thermosetting) made from unsaturated Polyester Resin (UPR) moulding material.

2 REFERENCES

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

IS No.	*Title*
IS 2828 : 2019/ISO 472 : 2013	Plastics — Vocabulary (*second revision*)
IS 6746 : 1994	Unsaturated polyester resin systems — Specification (*first revision*)
IS 8543 (Part 13/ Sec 1) : 197777	Methods of testing plastics: Part 13 Tests for specific products, Section 1 Buttons (thermosetting)

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 2828 shall apply.

4 MATERIAL

Raw material used for the manufacturing of buttons shall be unsaturated polyester resin (UPR) conforming to IS 6746.

5 REQUIREMENTS

5.1 Colour and Pattern

The buttons shall be of the colour and pattern as agreed to between the purchaser and the supplier.

5.2 Sizes

Unless otherwise agreed to between the purchaser and the supplier, the buttons shall pertain to the following sizes:

Sl No.	*Type of Buttons*	*Diameter* mm
(1)	(2)	(3)
i)	Buttons (having 4 sewing holes)	29
ii)	Buttons (having 4 sewing holes)	19
iii)	Buttons (having 4 sewing holes)	16
iv)	Buttons (having 4 sewing holes)	13
v)	Buttons (having 4 sewing holes)	10
vi)	Buttons, general service, large (with brass shanks)	25
vii)	Buttons, general service, small (with brass shanks)	19

5.3 Shape and Design

The shape and design of the buttons shall be as agreed to between the purchaser and the supplier.

5.3.1 *Special Requirements for Defence Purposes*

Buttons supplied to the defense services shall conform to those shown in Fig. 1 to Fig. 4.

5.4 Fastness

5.4.1 *Buttons, Coloured*

The buttons, when tested as prescribed in **6.4.1** of IS 8543 (Part 13/Sec l), shall show no change in colour, no stains on the attached pieces of the covering cloth and no signs of cracking, pitting, softening and mottling.

5.4.2 *Buttons, White*

The buttons, when tested as prescribed in **6.4.2** of IS 8543 (Part 13/ Sec 1), shall show no change in colour, no stains on the attached pieces of the covering cloth and no signs of cracking, pitting, softening and mottling.

NOTE — Normal engineering tolerance is permissible on the dimensions whose tolerance is not specified.

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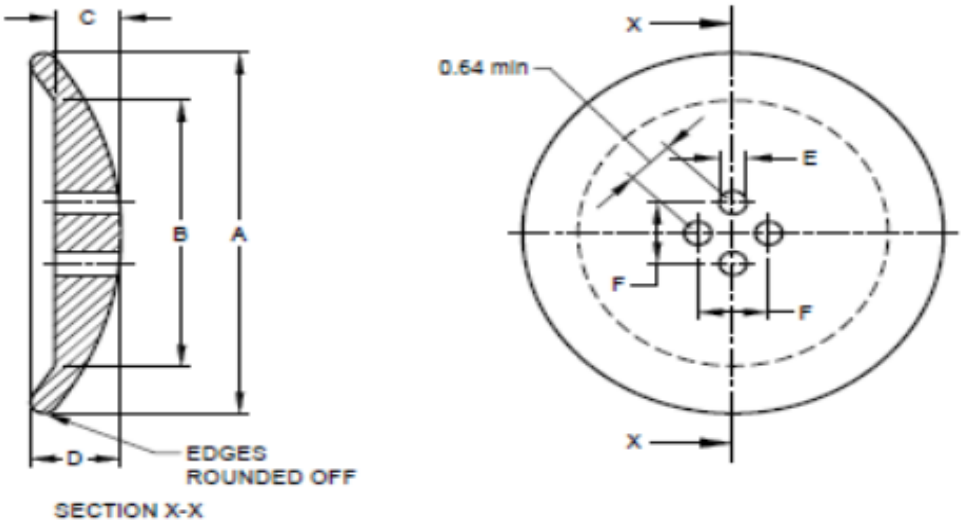


FIG. 1 BUTTONS, 13, 19 AND 29 mm

Sl No.	*Nominal Size of Buttons, Plastic,* mm	*A* Overall Diameter, mm	*B* Diameter of Cup, mm	*C* Thickness at Base, mm	*D* Overall Thickness, mm	*E* Diameter of Holes, mm	*F* Diagonal Distance, mm
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
i)	13	13 0.5	9.5 0.5	2.0 to 2.5	4.0 to 4.5	1.9 to 3.0	3.5 to 6.5
ii)	19	19 0.65	14.0 0.5	3.5 to 4.0	4.5 to 5.0	2.0 to 3.0	3.5 to 6.5
iii)	29	29 0.65	22.5 0.5	4.0 to 4.5	5.5 to 6.0	2.0 to 3.0	3.5 to 6.5

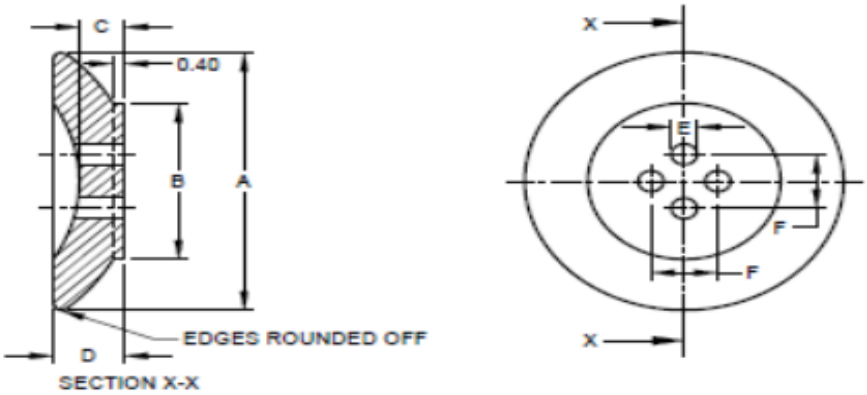


FIG. 2 BUTTONS, 16 mm

Nominal Size of Buttons, Plastic, mm	*A* Overall Diameter, mm	*B* Diameter of Cup, mm	*C* Thickness at Base, mm	*D* Overall Thickness, mm	*E* Diameter of Holes, mm	*F* Diagonal Distance, mm
16	16 0.65	9.5 0.5	2.0 to 2.5	3.5 to 4.0	2.0 to 3.0	3.5 to 6.5

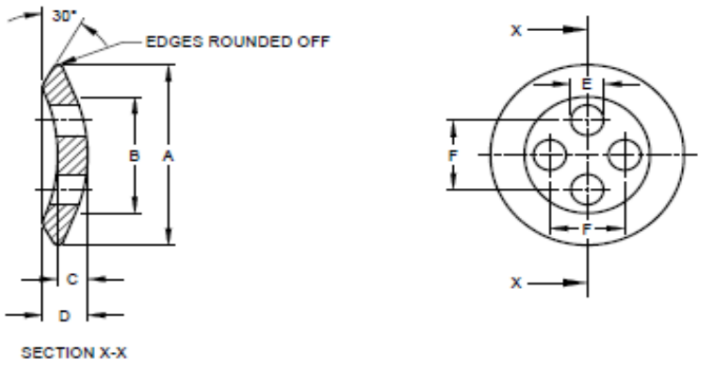
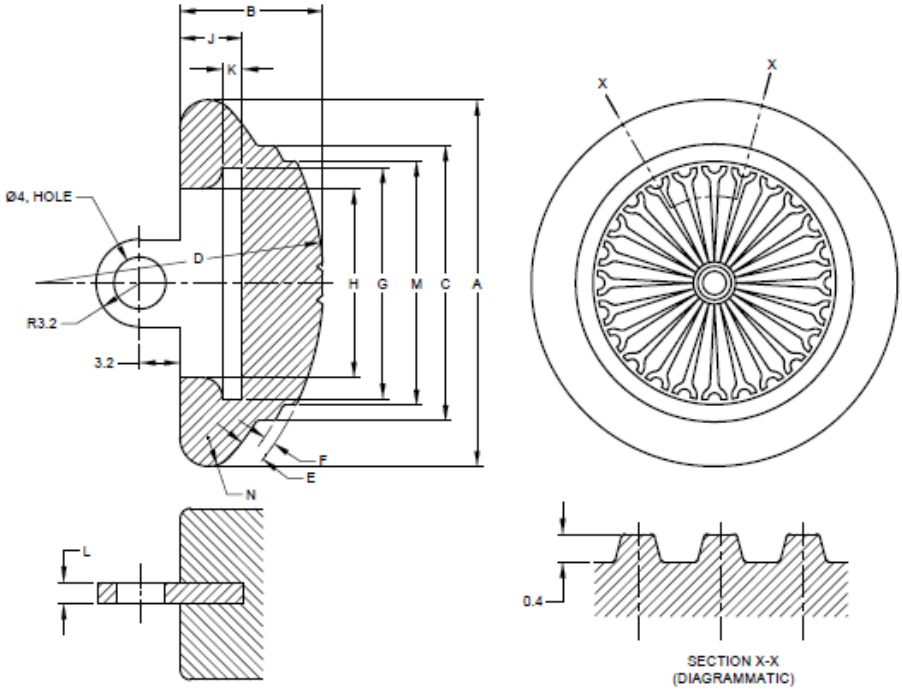


FIG.3 BUTTONS , 10 mm

Nominal Size of Buttons, Plastic, mm	*A* Overall Diameter, mm	*B* Diameter of Cup, mm	*C* Thickness at Base, mm	*D* Overall Thickness, mm	*E* Diameter of Holes, mm	*F* Diagonal Distance, mm
10	10 0.5	7.5 0.5	1.5 to 2.0	2.5 to 3.0	1.5 to 2.0	3.5 to 4.5



All dimensions in millimetres.

FIG. 4 BUTTONS, GENERAL SERVICES, LARGE AND SMALL (WITH BRASS SHAN S)

Size	*Nominal Size,* mm	*A Diameter*		*B*	*C DIA*	*D Radius*	*E*	*F*	*G*	*H*	*J*	*K*	*L*	*M*	*N RAD*
Large	25	25	0.65	10.3	19.0	19.0	1.6	0.4	15.9	12.7	4.8	1.6	1.6	17.5	2.4
Small	19	19	0.65	7.9	14.3	13.5	1.2	0.4	12.7	10.3	3.2	1.4	1.4	13.1	1.6

5.5 Workmanship and Finish

The buttons shall be free from moulding defects, specks, cracks and rough and sharp edges. The surface shall be smooth and polished. The shade shall be uniform. Extra material in the form of protrusion shall not be present on the back of the buttons. The holes in the shanks, or the holes in the buttons shall be neatly made, circular, uniform, smoothly finished and free from plastics films adhering on the walls of the holes. In case of buttons with 4 holes, the lines joining the centres of the diagonally opposite holes shall be at right angles to each other and the point of intersection of the lines shall be the centre of the buttons. The embossing, if any, shall be clear and well defined.

5.6 Hot Pressing Test

The buttons, when tested as prescribed in **7** of IS 8543 (Part 13/Sec 1), shall show no sign of softening, swelling, distortion, blistering, cracking, warping, breaking or any other appreciable change in colour or appreciable loss of lustre.

5.7 Load Test

When tested as prescribed in **9** of IS 8543 (Part 13/ Sec 1), no crack shall appear on the buttons on the completion of test.

5.8 Colour Fastness to Light

The buttons, when tested as prescribed in **10** of IS 8543 (Part 13/Sec l), shall be rated not less than No. 4 of the eight standard patterns of blue dyed woollen fabrics.

6 PACKING AND MARKING

6.1 Packing

6.1.1 Unless otherwise agreed to between the purchaser and the supplier, all buttons shall be packed loose in single sizes in suitable cardboard cartons.

6.1.2 One gross of buttons shall be packed in each cardboard carton. Each carton shall have sewed on its shorter side, one button indicating the size, design and colour of the buttons in the carton. The cartons shall be securely packed in wooden boxes to ensure safe transportation.

6.2 Marking

6.2.1 The cartons and boxes shall be marked with the following:

a) Size of buttons;
b) Quantity;
c) Colour;
d) Manufacturer's name and trade-mark, if any; and
e) Any other statutory requirements.

6.2.2 *BIS Certification Marking*

The product(s) 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 products may be marked with the Standard Mark.

7 SAMPLING

The method of drawing samples and criteria for conformity shall be as prescribed in Annex A of IS 8543 (Part 13/Sec l).

ANNEX A
(*Foreword*)

COMMITTEE COMPOSITION

Plastics Sectional Committee, PCD 12

Organization	*Representative(s)*
Central Institute of Petrochemicals Engineering & Technology (CIPET), Chennai	DR SHISHIR SINHA **(*Chairperson*)**
All India Plastics Manufacturers Association (AIPMA), New Delhi	SHRI DEEPAK BALLANI
Central Institute of Petrochemicals Engineering & Technology (CIPET), Chennai	DR S. N. YADAV DR SMITA MOHANTY (*Alternate*)
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Chemical and Petrochemical Manufactures Association (CPMA), New Delhi	SHRI UDAY CHAND
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CSIR - National Chemical Laboratory (NCL), Pune	DR P. R. SURESHA SHRIMATI SANGEETA HAMBIR (*Alternate* I) DR R. V. GUNDLOORI (*Alternate* II)
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Indian Centre for Plastics in the Environment (ICPE), Mumbai	SHRI T. K. BANDOPADHYAY SHRI ARUNAVA GUHA (*Alternate*)
Indian Flexible Packaging & Folding Carton Manufacturers Association (IFCA), Mumbai	SHRI ATIN CHAUDHURI
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National Committee on Plasticulture Applications in Horticulture (NCPAH), Ministry of Agriculture & Farmers Welfare, Govt. of India, New Delhi	SHRI ANAND ZAMBRE SHRI KRISHNA KUMAR KAUSHAL (*Alternate*)
ONGC Petro Additions Ltd (OPAL), Dahej	SHRI VIVEK MEHTA
Organization of Plastics Processors of India, Mumbai	SHRI DEEPAK LAWALE
Plastindia Foundation, Mumbai	DR E. SUNDARESAN DR MIHIR K. BANERJI (*Alternate*)
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Member Secretary
SHRI SHIVAM DWIVEDI
SCIENTIST 'B'/ASSISTANT DIRECTOR
(PETROLEUM, COAL AND RELATED PRODUCTS), BIS

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.gov.in

Regional Offices:		*Telephones*
Central	: 601/A, Konnectus Tower -1, 6th Floor, DMRC Building, Bhavbhuti Marg, New Delhi 110002	2323 7617
Eastern	: 8th Floor, Plot No 7/7 & 7/8, CP Block, Sector V, Salt Lake, Kolkata, West Bengal 700091	2367 0012 2320 9474
Northern	: Plot No. 4-A, Sector 27-B, Madhya Marg, Chandigarh 160019	265 9930
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