उत्पाद मानुयल

पैकेजिंग के लिए उच्च धनत्व पॉलीथिन पुनः निचोड़ने योग्य ट्यूब विशिष्टि

IS 17480:2020 के अनुसार

PRODUCT MANUAL FOR SPECIFICATION FOR HIGH DENSITY POLYETHYLENE MULTI SQUEEZABLE TUBE FOR PACKAGING- SPECIFICATION ACCORDING TO IS 17480:2020

भारतीय मानक ब्यूरो)अनुरूपता मूल्यांकन (विनियम की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरणके प्रचलन मे रीति और पारदर्शिता के सुसंगता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप मे उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	**उत्पाद** **Product**	:	IS 17480:2020
	शीर्षक **Title**	:	High Density Polyethylene Multi Squeezable Tube for Packaging- Specification
	संशोधन संख्या **No. of Amendments**	:	2
2.	**नमुनाकरण दिशा निर्देश** **Sampling Guidelines:**		
a)	**कच्चा माल** **Raw material**	:	The material used shall be in accordance with Cl 4 of the IS
b)	**समूहिकरण दिशा निर्देश** **Grouping guidelines**	:	कृ पया Annex-A देखें Please refer Annex A
c)	**नमूनेका परिमाण** **Sample Size**	:	30 nos
3.	**परीक्षण उपकरणो की सूची** **List of Test Equipment**	:	कृ पया Annex-B देखें Please refer ANNEX –B
4.	**निरीक्षण व परीक्षण स्कीम** **Scheme of Inspection**	:	कृ पया Annex-C देखें

	and Testing		Please refer ANNEX –C
5.	**एक दिन में संभावित परीक्षण Possible tests in a day:**		
	• **Workmanship and Finish** • **Design, Shape and Type** • **Dimension and Tolerances** • **Capacity** • **Shoulder Bond Strength** • **Tube Bursting test** • **Drop Test for tubes** • **End seal integrity Test** • **Leakage test** • **Tape test for printed tubes** • **Cap release torque** • **Opacity** • **Transparency**		
6.	**लाइसेन्स का कार्यक्षेत्र/ Scope of the Licence:**		
	IS 17480 : 2020 **के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है।** "Licence is granted to use Standard Mark as per IS 17480:2020 with the following scope:		
	उत्पाद का नाम Name of the product		High Density Polyethylene Multi Squeezable Tube for Packaging- Specification
	Type		Type I(Plastic Barrier Laminated Tube) and/or Type II(Extruded Plastic Seamless Tube)
	Nominal Thickness of tube		.. mm up to and including .. mm
	Nominal Diameter of tube		.. mm up to and including .. mm
	Nominal capacity of tube		50 ml, 100 ml, 200 ml and 300 ml or any other capacity as agreed by the buyer and manufacturer
	Transparency		Opaque/Transparent
	Additional Requirement		With or without additional requirements of a) Water vapour transmission rate as per ISO 2528; and b) Oxygen transmission rate as per ISO 15105-2.
	Eco mark		With or without Eco mark

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ANNEX A

GROUPING GUIDELINES

1. There are two types of products (High Density Polyethylene Multi Squeezable Tube for Packaging) classified based on manufacturing process (clause 7.2)

1	Type I	Plastic Barrier Laminated Tube
2	Type II	Extruded Plastic Seamless Tube

2. The design, dimensions (like height, top and bottom diameter) and thickness of the tube and internal diameter of thread of caps are as agreed between manufacturer and purchaser.

3. The manufacturer shall declare the nominal thickness and diameter, and nominal capacity for each type of tube which they intend to cover in the scope of licence. The sample of each type (Type 1 and Type 2) and each transparency (opaque/transparent) of any thickness and diameter and any nominal capacity shall be tested to be covered in the scope of Licence.

4. In case it is intended to cover one or both the additional requirements for a) Water vapour transmission rate as per ISO 2528; and b) Oxygen transmission rate as per ISO 15105-2, the sample(s) shall also be tested for these requirements.

5. In case it is also intended to cover Eco mark, compliance of the product to the additional requirement for Eco mark as per Clause 14 of IS 17480:2020 shall also to be ensured.

6. It shall be ensured that the firm has all the necessary manufacturing and testing facilities for the manufacture and testing of the sizes/grade designations to be included in the licence.

7. During the operation of licence, BO shall ensure that all the Types/ varieties covered in the license are tested in rotation.

ANNEX B

List of Test Equipment

Major test equipment required to test as per the Indian Standard

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Dimension and Tolerances, Clause 8	Dead Weight dial Micrometer (Thickness)
		Mandrel of appropriate diameter for the tube size being tested
		Go/ No-Go gauges
		Dial Thickness Gauge
2	Capacity, Clause 9	Weighing balance (LC 0.1gm)
		Rigid transparent plastic disc with slot (fig 1of IS 2798)
		Dropper or pipette
		Beakers or tubes with marking in millilitres
3	Shoulder Bond Strength, Clause 10.1	Scissors / Cutter
4	Overall Migration, Clause 10.2	Hot Air oven with digital temperature controller
		Hot plate with temperature control regulators
		Analytical balance or equivalent, capable of weighing to the nearest 0.1 mg
		Platinum crucible or silica dish
		Desiccator
		Glassware & distilled water
5	Specific Migration test, Clause 10.3	Inductively coupled plasma optical emission spectrometer, with gases supply as per Cl 8.6 and 8.7 of IS 3025 (Part 2), ph meter, stock solutions, Certified reference material
		Weighing balance (0-200 grams/0.1 mg)
		Nitric Acid
		Hydrogen Peroxide
		Sulphuric Acid
		Hydrochloric acid
		Ammonium sulphate
6	Tube Bursting test, Clause 10.4 (Table 1)	Bursting test apparatus as per Annex D of IS 17480:2020 with air supply line with pressure gauge
7	Drop Test for tube	Drop test set up as per Cl 8 of IS 2798:1998
8	End Seal Integrity	End seal separation apparatus
9	Leakage test	Blotting paper, stop watch (Closure leakage)
		Vibration table, as per Cl 6.2 of IS 2798:1998 (Vibration leakage)
		Water reservoir, Air supply equipment (Air pressure leakage)

10	Product Resistance for printed tube	Hot air oven, hard paper tissue
11	Tape test for printed tubes	Cello tape, stop watch
12	Cap release torque	Torque Meters
		Standard Cup holders
13	Environmental stress crack resistance, for tube shoulder, failure time	Circulation air oven, capable of maintaining a temperature of 60±1°C and an air flow rate of 8.5 to 17m3/min
		Weighing balance (LC 1 gm) [for weighing containers and contents] or volumetric filling apparatus
		Heat Seal laminate
		Heat Sealing unit
		Torque meter
		Glass beakers
		Polyethylene bags- 0.038mm thick
		Environmental stress cracking agent
		Humidity chamber
14	Opacity	Reflectometer as per Cl 5.1 of IS/ISO 2471:2008 with reference standards, working standards and black cavity
15	Transparency	Apparatus as per Cl 3 of IS 13360 (Part 9/Sec 5): 1999
		Air condition
		Humidifier
16	Product compatibility test	Hot air oven, cutter, vernier caliper/scale
		Weighing balance
17	Water Vapour transmission Rate	Test Dishes
		Lids, made of same material as dish
		Waxing Templates
		Sealant
		Water Bath
		Device for distributing the wax
		Cutting template or test piece cutter
		Desiccant
		Balance (LC 0.1mg)
		Tongs
		Enclosures
18	Oxygen transmission rate	Apparatus as per Fig A.1 and B.1 of ISO 15105-2
		Test Gas
		Transmission cell

The above list is indicative only and may not be treated as exhaustive.

ANNEX C

Scheme of Inspection and Testing

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare and implement a calibration plan for the test equipments.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. PACKING AND MARKING – The Standard Mark as given in the Schedule of the license shall be marked on the product High Density Polyethylene Multi Squeezable Tube for Packaging, provided always that the material to which this mark is thus applied conforms to every requirement of the specification.

3.1 Packing and Marking shall be done as per the provisions of the Indian Standard. In addition, the following shall be incorporated on box or cases containing the empty tube:

i. BIS Licence No. (CM/L)
ii. BIS website details i.e.–"For details of BIS certification please visit www.bis.gov.in

4. CONTROL UNIT – For the purpose of this scheme, the total quantity of High Density Multi Squeezable Tubes of the same type and nominal thickness, diameter and capacity produced from the same type of raw material in a day, shall constitute one control unit

5. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2above.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

6. REJECTIONS – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016

TABLE 1
LEVELS OF CONTROL

(1)				(2)	(3)		
Test Details				**Test equipment requirement R: required (or) S: Sub-contracting permitted**	**Levels of Control**		
Cl.	**Requirement**	**Test Method**			**No. of Sample**	**Frequency**	**Remarks**
		Clause	**Reference**				
4	Material	4.1 to 4.5	IS 17480	S	One	Each consignment of material	For establishing conformity of raw material, evidence of conformity in the form of test certificate of supplier, test report issued by BIS recognized /empaneled lab or any other NABL accredited lab or in-house test report may be accepted. No testing is required if the material is ISI marked.
5	Manufacture (construction and lamination)	5.1 to 5.4	IS 17480	R	Manufacturer shall ensure adequate inspection and in process control, to ensure product meets specified Construction, Dimension and visual requirements and maintain test records		
6	Workmanship, Finish and Appearance	6	IS 17480	R			
7	Design, Shape and Type	7	IS 17480	R			

8	Dimension and Tolerance						
8.1	Thickness	Annex A	IS 2508	R			
8.2	Inside Diameter of Tube	Annex A	IS 17480	R			
8.3	Outside Diameter of Tube	Annex B	IS 17480	R			
9	Capacity	~~9~~5	IS 2798	R	One	Each Control Unit	
10.1	Shoulder Bond Strength	Annex C	IS 17480	R	One	Each Control Unit	
10.2	Overall Migration	~~–~~	IS 9845	S	One	Once in 03 months	Also when there is any change in source of raw material or nature of raw material or change in formulation
10.3	Specific Migration Test	~~––~~	IS 9845(for Sample preparation) IS 3025(P-2) (for determination)	S	One	Once in 03 months	
10.4Table 2	Tube Bursting test	Annex D	IS 17480	R	One	Each Control Unit	
10.4 Table 2	Drop test for Tubes	8	IS 2798	R	One	Each Control Unit	
10.4 Table 2	End Seal Integrity	Annex E	IS 17480	R	One	Each Control Unit	
10.4 Table 2	Leakage Test	6	IS 2798	R	One	Each Control Unit	
10.4 Table 2	Product Resistance of Printed Tubes	14	IS 2798	R	One	Every 7^{th}Control Unit	*(Testing time is approx. 26 hours)*

10.4 Table 2	Tape test for printed tube	13	IS 2798	R	One	Each Control Unit	
10.4 Table 2	Cap Release Torque	Annex F	IS 17480	R	One	Each Control Unit	
10.4 Table 2	Environmental stress crack resistance, for tube shoulder, failure time	Method I	IS 8747	S	one	Once in 03 months	*(Testing time is 360 hours)*
10.4 Table 2	Opacity	16	IS 1060(Part 1)	S	One	Once in 01 months	
10.4 Table 2	Transparency	–	IS 13360(Part 9/Sec 5)	S	One	Once in 01 months	
10.4 Table 2	Product Compatibility Test	12	IS 2798	S	One	Once in 03 months OR The sample to be tested whenever there is change in the intended application, whichever is earlier	*(Testing time is 28 days)*
10.5	Additional Requirementsfor Multi Squeezable Tubes (optional)						
10.5.1	Water vapour transmission rate		ISO 2528	S	One	Once in 03 months	
10.5.1	Oxygen transmission rate		ISO 15105-2	S	One	Once in 03 months	

14	Additional requirements for eco mark (optional)	14	IS 17480	Manufacturer is required to comply with the requirements of Cl 14 of IS 17480:2020 and maintain appropriate records

Note-1Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.