



**PRODUCT MANUAL FOR
HOSPITAL RUBBER SHEETING WITHOUT REINFORCING FABRIC ACCORDING TO IS
8164:1976**

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.	Product	:	IS 8164:1976
	Title	:	HOSPITAL RUBBER SHEETING WITHOUT REINFORCING FABRIC
	No. of Amendments	:	3
2.	Sampling Guidelines:		
a)	Raw material	:	As per clause 2.1
b)	Grouping guidelines	:	NIL
c)	Sample Size	:	5 meters length in Full width
3.	List of Test Equipment	:	Please refer ANNEX – A
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – B
5.	Possible tests in a day : Workmanship & Finish, Length and Width, thickness		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 8164 :1976 with the following scope:		
	Name of the product	HOSPITAL RUBBER SHEETING WITHOUT REINFORCING FABRIC	

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ANNEX A
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	Thickness (Clause 2.1.3)	- Thickness Gauge
2	Workmanship & Finish	- Inspection Table
3	Mass (i of Table 1)	- Weighing balance - Scale - Humidity Chamber
4	Tensile Strength (ii of Table 1) & Elongation at Break (iii of Table 1)	- Tensile Testing Machine - Dumb-bell Die & cutting machine
5	Tension Set at 250% elongation and 15mm recovery time (iv of Table 1)	- Tensile Testing Machine or Straining device as per IS 3400 (Part 13) - Die and cutting machine for cutting strip test pieces with enlarged end - Oven with air flow - Scale
6	Accelerated ageing at 70 c for 168 hours in air oven (v of Table 1) a) Change in tensile strength b) Change in elongation	- Ageing Oven with hour meter & Digital Thermometer - Tensile Testing Machine
7	Water Proofness under 300mm Head of water (vi of Table 1)	- Hydrostatic Test Arrangement with means to measure water pressure (manometer/pressure gauge)
8	Colour fastness to washing (vii of Table 1)	- Suitable mechanical laundering device - Balance accurate to ± 0.01 g - Mechanical stirrer minimum $16,667 \text{ s}^{-1}$ (1000 r/min.), Stainless steel balls - Hot plate - Reagents and materials (soap solution, sodium carbonate, adjacent fabrics etc.)

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9	Colour fastness to light (viii of Table 1)	- Blue wool reference materials, humidity-test control fabric, - Laboratory exposure devices
10	Autoclave test (ix of Table 1) a) Change in Tensile Strength b) Change in elongation	- Autoclave with means to determine steam pressure level (i.e. pressure gauge) - Tensile Testing Machine
11	Reaction of aqueous extract (x of Table 1)	- Weighing balance - Chemically resistant glass flask - Water cooled reflex condenser with ground glass connection, measuring cylinder - Heating mantle/Hot plate - Methyl orange and phenolphthalein
12	Resistance to detergents and disinfectants (xi of Table 1)	- Phenol - Ammonia Solution - Soap Solution - Thermometer - Hot plate
13	Length and Width	- Table of min. 5 meter length and width of 50mm more than specified width - Steel scale

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 a calibration plan for the test equipment.

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 licence, shall be marked on the product provided always that material so marked conform to requirements 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 each rubber sheeting at one end:

i) BIS Licence Number CM/Land

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, all the finished sheeting manufactured from same batch of raw material vulcanized under similar conditions in a day shall constitute a 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 2 above.

a. All the production which conforms to the Indian Standard 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

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
2	Requirements						
	Material	2.1 , 2.1.1	IS 8164	S		Each consignment	
	Colour	2.1.2	IS 8164	R	All	Each control unit	
	Thickness	2.1.3	IS 8164	R	3	Each Control unit at equal intervals	
	Workmanship & Finish	2.2	IS 8164	R	All	Each Control unit	
2.3	Tests as per Table 1						
	i) Mass	Table 1	IS 7016	R	1	Each control unit	-
	ii) Tensile Strength	Table 1	IS 3400 Pt 1	R	1	Each control unit	-

	iii) Elongation at break, percent, Max	Table 1	IS 3400 Pt 1	R	1	Each control unit	-
	iv) Tension set at 250 percent elongation and 15 min recovery time, percent, Max	Table 1	IS 3400 Pt XIII	R	1	Once in a month	-
	v) Accelerated ageing at 70 C for 168 hours in air oven a) Change in tensile strength from original, percent Max b) Change in elongation at break from original percent, Max	Table 1	IS 3400 Pt IV	R	1	Once in a month	
	vi) Waterproofness under 300mm head of water	Table 1	IS 7016 Pt VII	R	1	Each control unit	
	vii) Colour fastness to washing	Table 1	IS 765	S	1	Once in six months	
	viii) Colour fastness to light	Table 1	IS 245	S	1		
	ix) Autoclaving test a) Change in tensile strength from original, percent Max b) Change in elongation at break from original percent, Max	Table 1	Appendix A of IS 8164	R	1	Once in a week	
	x) Reaction of aqueous extract	Table 1	Appendix B of IS 8164	R	1	Once in a month	
	xi) Resistance to detergents and disinfectants	Table 1	Appendix C of IS 8164	R	1	Once in a month	
2.4	Length & Width	2.4	IS 7016 Pt 1	R	3	Each Control unit at equal intervals	Length on each roll Width – three times
2.5	Preservation	2.5	IS 8164	R	All	Each control unit	

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled 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.