



M PRODUCT MANUAL FOR UNBACKED FLEXIBLE PVC FLOORING ACCORDING TO IS 3462: 1986

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 3462: 1986
	Title	:	Unbacked Flexible PVC Flooring
	No. of Amendments	:	1
2.	Sampling Guidelines:		
a)	Raw material	:	As per Clause 3 of IS 3462: 1986
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	Sheet of size - 1.5 m × 2 m or 50 tiles (As applicable)
3.	List of Test Equipment	:	Please refer ANNEX – B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – C
5.	Possible tests in a day:		
	(i) Colour and finish (Clause 5) (ii) Dimensions and tolerances (Clause 5) (iii) Squareness (Clause 7.1) (iv) Dimensional stability (Clause 7.1) (v) Residual indentation (Clause 7.1) (vi) Flexibility (Clause 7.1) (vii) Ply adhesion (Clause 7.1) (viii) Elastic product (Clause 7.1)		
6.	Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 3462:1986 with the following scope:		
	Name of the product	Unbacked Flexible PVC Flooring	
	Type	Sheets/ Rolls/ Tiles	
	Size (length x width x thickness)		
	Laminated/unlaminated		

ANNEX A

Grouping Guidelines

1. IS 3462: 1986 covers Unbacked Flexible PVC Flooring which are categorised as given below based on dimensions and shapes:

a) **Standard Sizes:**

- (i) Width - 1000 mm, 1500 mm and 2000 mm (For sheets or rolls)
- (ii) Size - 250 mm, 300 mm, 600 mm and 900 mm square (For tiles)
- (iii) Thickness - 1.5 mm, 2.0 mm, 2.5 mm and 3 mm

b) **Non-standard Sizes:**

Sheets, rolls and tiles may be supplied in sizes and thickness other than those mentioned above, as per the agreement between manufacturer and purchaser.

c) **Laminated / Unlaminated**

2. Considering the above, following grouping guidelines is developed for GoL/CSoL:

- a) Sample of sheet/rolls of minimum and maximum thickness with maximum width shall be tested to cover sheets/rolls of all thickness in the thickness range tested for width upto and including the width tested.
- b) Sample of tiles of minimum and maximum thickness with maximum size shall be tested to cover tiles of all thickness in the thickness range tested for size upto and including the size tested.
- c) If laminated variety tested, unlaminated variety may also be included in the scope of the licence.

3. The Firm shall declare the varieties intended to be covered in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.

4. During the operation of the Licence, BO shall ensure that all the types and sizes covered in the Licence are tested in rotation, to the extent possible.

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.	Requirements of flexible PVC flooring (Clause 5 and 7)	
2.	Dimensions and Tolerances a) Thickness b) Width of Sheet or roll c) Tile Size d) Squareness (For tiles only) e) Dimensional stability	<ul style="list-style-type: none"> - Vernier Calipers - Travelling microscope or similar instrument for measurement of length and width of tiles - Steel tape - Micrometer - L- Shape metal jig as per clause 4.2 of IS 3464: 1986 - Steel plate - Filler gauge - Thermostatically controlled hot air oven - Shelves of adequate size
3.	Colour fastness to daylight	<ul style="list-style-type: none"> - Exposure case as per Clause B-3 of IS 9766 - Grey scale - Dyed wool standard - Wood stand - Cloth
4.	Curling (For tiles)	<ul style="list-style-type: none"> - Curling tester with dial gauge as per Fig 4 of IS 3464 - Glass flat plate or non-metallic non-warpable flat plate - Wick material- Absorbent paper - Water bath
5.	Residual indentation	<ul style="list-style-type: none"> - Indentation tester with dial gauge - Stopwatch
6.	Flexibility	<ul style="list-style-type: none"> - 40 mm diameter mandrel - Low Temperature cabinet/Deep freezer - Stopwatch
7.	Resistance to various substances	<ul style="list-style-type: none"> - Chemicals (ISO Propyl Alcohol, NaOH) - Light Mineral Oil - Cotton Seed Oil - Test apparatus as per clause 11.2 and Fig 5 of IS 3464: 1986
8.	Ply adhesion (For laminated PVC flooring)	<ul style="list-style-type: none"> - Chemical (Ethyl acetate) - Tensile testing machine

9.	Moisture movement	<ul style="list-style-type: none"> - Shallow tray, glass balls and Steel plate (as per Appendix B of IS 3462) - Travelling microscope - Desiccator containing silica gel
10.	Heat ageing and exudation	<ul style="list-style-type: none"> - Hot air oven - Absorbent paper/Filter paper - 25 mm mandrel
11.	Elastic product	<ul style="list-style-type: none"> - Tensile Testing machine - Sample Cutting tools and Dies - Vernier caliper
12	Conditioning of sample	<ul style="list-style-type: none"> - Air conditioner to maintain laboratory temperature of 27 ± 2 °C - Thermometer

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 equipments.
2. **TEST RECORDS** - The manufacturer shall maintain test records for the tests carried out to establish conformity.
3. **LABELLING AND MARKING** - As per the requirement of IS 3462: 1986
4. **CONTROL UNIT** - All sheets/rolls/tiles of same size and finish manufactured from same compound under similar conditions of manufacturing 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.
 - 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

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Recommended Levels of Control		
Cl	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
3	Materials	3.1	IS 3462	S	One	Each consignment	Material shall be received with manufacturer test certificate.
5	Dimensions and Tolerances						
5.1	Linear dimensions	5.1, 5.3, 5.4, Table 1 (ii) (iii) 3	IS 3462 IS 3464	R	Ten	Each control unit	In case of failure of sample in any requirement, twice the number of samples from same control unit shall be tested. The control unit shall be marked only if the retested samples passes.
5.2	Thickness	5.2, 5.3, 5.4, Table 1(ii) 3	IS 3462 IS 3464	R	Ten	Each control unit	
6	Colour and surface characteristics	6.1	IS 3462	R	All	Each tile/ roll/sheet	-
7, Table 1	Requirements						
(iv)	Squareness (For tiles only)	7.1 4	IS 3462 IS 3464	R	Ten	Each control unit	In case of failure of sample in any requirement, twice the number of samples from same control unit shall be tested. The control unit shall be marked only if the retested samples passes.
(v)	Dimensional stability	7.1 5	IS 3462 IS 3464	R	Two	Each control unit	
(vi)	Colour fastness to day light	7.1 4.3	IS 3462 IS 9766	R	One	Once in a month	In case of failure, marking shall be stopped, and corrective actions shall be taken to avoid the failure. Marking shall be resumed only after passing of improved sample. All colour manufactured may be tested at least once in a year.

(vii)	Curling (For Tiles)	7.1 8	IS 3462 IS 3464	R	One	Every Seventh control unit	#
(viii)	Residual indentation	7.1 10	IS 3462 IS 3464	R	One	Each Control unit	-
(ix)	Flexibility	7.1, Appendix A	IS 3462	R	One	Each control unit	-
(x)	Resistance to various substances	7.1 11	IS 3462 IS 3464	R	Four	Every Seventh control Unit	#
(xi)	Ply adhesion (Only for laminated PVC flooring)	7.1 12	IS 3462 IS 3464	R	One	Each control unit	-
(xii)	Moisture movement	7.1, Appendix B	IS 3462	R	One	Every 15 th control unit	#
(xiii)	Heat ageing and exudation	7.1, Appendix C	IS 3462	R	Three	Every 15 th control unit	#
(xiv)	Plastic product	7.1, Appendix D	IS 3462	R	One	Each control unit	-

In case of failure of sample in any requirement, the control unit shall not be marked. Samples from three consecutive control units shall be tested for that requirement and original frequency of testing for that requirement may be resumed if all the samples pass.

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 B.O. Head.