PRODUCT MANUAL FOR GALVANIZED POLYVINYL CHLORIDE (PVC) POLYOLEFIN AND OTHER POLYMER- COATED STEEL CHAIN LINK FENCE FABRIC ACCORDING TO IS 2721:2025

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 2721:2025
	Title	:	Galvanized, Polyvinyl Chloride (PVC), Polyolefin, and other polymer- coated Steel Chain Link Fence Fabric
	No. of Amendments	:	Nil
2.	**Sampling Guidelines:**		
a)	**Raw material**	:	As per clause 5 of IS 2721: 2025
b)	**Grouping guidelines**	:	Please refer ANNEX – A
c)	**Sample Size**	:	1.5 m x 2 (Mechanical) + 2 m (chemical). Tests as per Cl. 6 and Cl. 7 shall be done in factory testing and no sample may be drawn for these tests as they are to be done on complete Roll.
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 :**		All tests, except tests as per Cl. 17.3, if applicable
6.	**Scope of the Licence :**		
	Licence is granted to use Standard Mark as per IS 2721:2003 with the following scope:		
	Name of the product	Galvanized Steel Chain Link Fence Fabric	
	Type of Selvage		
	Mesh Size		
	Class based on coating	Class 1, Class 2, Class 3a, Class 3b	

ANNEX-A

GROUPING GUIDELINES

1. The following paremeters shall be considered for grouping of Galvanized Steel Chain Link Fence Fabric as per IS 2721: 2025:

   (a) Type of Selvage
   - Both ends of the fabric twisted
   - One end of the fabric knuckled and the other end twisted
   - Both ends of the fabric knuckled
   - Both ends of the fabric without knuckling and twisting

   (b) Mesh Size – as per Table 3 of IS 2721:2003
   (c) Class based on coating- Class 1/ Class 2/ Class 3a/ Class 3b

2. Considering the above, one sample of Galvanized Steel Chain Link Fence Fabric of any Mesh Size in any Length and Width for each Type of Selvage shall be tested for all requirements to cover all the Mesh Sizes for that particlualr Type of Selvage. Separate sample of each class of coating shall be tested.

3. The Firm shall declare the Varieties they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing capabilities of the Manufacturer.

4. During the operation of licence, it shall be ensured that all varieties covered in the license 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	Mesh Size, 6.2 & Table3	Vernier caliper
2	Width, 6.3	Measuring tape
3	Length, 6.4	Measuring tape
4	Height, Cl. 6.5	Measuring tape
5	Tensile Test, 13.1.1	Universal Testing Machine and Vernier caliper
6	Wrapping test, 13.1.2	Mandrel and Magnifying Glass
7	Twist test, 13.1.3	Measuring scale, twisting machine apparatus as per IS 1717.
8	Bend test, 13.1.4	Vernier caliper, protactor
9	Galvanising test, Cl. 8	Weighing scale, stop watch Chemicals, glassware, Arrangement for uniformity of coating and adhesion test
10	Thickness of polymer coating, Cl. 9	Micrometer
11	Properties of polymer coating, Cl. 17.2, 17.3	Test set up as per Cl. 17.3, Mandrel

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

ANNEX C

Scheme of Inspection and Testing

1. QUALITY ASSURANCE PLAN

1.1 It is expected that during operation of BIS licence, manufacturers will implement a Quality Assurance Plan (QAP) i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or subcontracting/sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with **para 2.1**.

1.3 **RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT**:

1.3.1 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.2 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.3.3 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- Manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred:

i) Shared testing resources like common facility,

ii) Cluster based testing facility,

iii) Sub-contracting to outside laboratories which may either be:

a) BIS recognised/empanelled laboratories, or

b) Any accredited laboratory as per ISO/IEC 17025

2.1 **TEST RECORDS**- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made available for inspection by BIS.

3. **PACKING, LABELLING AND MARKING** – As per the requirement of IS 2721:2025. The Standard Mark, as given in the Schedule of the licence, shall be marked on a tag attached to each Roll of fence fabric, provided always that the product thus marked conforms to all the requirement of the specification.

In addition, the licence no. CM/L-_____ and details of BIS website shall be marked at an appropriate place on product or package as follows: "For details of BIS certification please visit www.bis.gov.in".

4. **REJECTION - T**he production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. 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.

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TABLE 1 (Recommended levels of Control- *For guidance only*)

(1)				(3)		
Test Details				**Levels of Control**		
Cl.	**Requirement**	**Test Method**		**No. of Sample**	**Frequency**	**Remarks**
		Clause	**Reference**			
5	Material		IS 280	One	Each consignment	No further testing required in case material is ISI Marked or received with a test certificate
6	**Dimensions**				Each roll of one size and type	In case the mesh sizes are different from those mentioned in Table 1, and 3, the manufacturer shall declare the sizes and tolerances. Tolerances shall be compatible with those mentioned in Table 1, 3.
	Mesh Size	6.2 & Table1	IS 2721	One		
	Width	6.3 & Table1	IS 2721	One		
	Length	6.4 & Table1	IS 2721	One		
7	Diamond count	7 & Table 2	IS 2721	One	Each roll of one size and type	
8.1	Weight of Zinc, Aluminium or Zinc – 5 Percent Aluminium Coating	8.1	IS 2721	One	Once in a month	
9	Thickness of polymer coating	9	IS 2721	One	Once in a month	
13	**Tests on Wires**					
	Tensile Test	13.1.1	IS 2721 IS 1608	One	Once in a month	This test shall be carried out on mesh and line wires used

	Wrapping test	13.1.2	IS 2721 IS 1755	One	Once in a month	for manufacturing fabric	
	Twist test	13.1.3	IS 2721 IS 1717	One	Once in a month		
	Bend Test	13.1.4	IS 2721	One	Once in a month	This test is applicable for mesh and line wires of 5mm diameter and above	
	Properties of polymer coated wires						
	Adhesion test	17.2	IS 2721	One	Once in month		
	Accelarted ageing	17.3	IS 2721	One	Once in a year		
	Bend tEST	17.4	IS 2721	One	Once in month		
8	**Galvanising Test on Complete Fabric- as per IS 4826 or IS 12753**						
	Mass of Zinc Coating	8 4.1 7.1	IS 2721 IS 4826 IS 12753	R	One	Once in month	This test shall be carried out on wires taken from complete fabric
	Uniformity of coating	8 4.2	IS 2721 IS 4826	R	One	Once in month	
	Freedom from defects	8 4.3 7.2	IS 2721 IS 4826 IS 12753	R	One	Once in month	
	Adhesion of coating	8 5 8	IS 2721 IS 4826 IS 12753	R	One	Once in month	