



उत्पाद मैनुअल
भा. मा. 17435: 2020 के अनुसार
प्राक्षेपिकी कवच के लिए
दस्तावेज संख्या-पी एम/आई एस 17435/2/जून 2025

भारतीय मानक ब्यूरो की स्कीम-I (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिश्रिता की सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसी द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाणीकरण लाइसेंस/प्रमाणपत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज का उपयोग किया जा सकता है।

**PRODUCT MANUAL FOR
BALLISTIC SHIELDS
ACCORDING to IS 17435:2020**

Document No.-PM/IS 17435/2/ June 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.

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1.	Product	:	IS 17435: 2020
	Title	:	Ballistic Shields
	No. of Amendments	:	One
2.	Sampling Guidelines:		
a)	Raw material	:	-
b)	Grouping guidelines	:	Please refer ANNEX –A
c)	Sample Size	:	02 Nos. (04/06/08 Nos of Shields, in case of testing under optional operating conditions is required) along with Operational Aids, as provided
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	:	Construction and Workmanship (Cl.5), Single shot testing (Cl. 7), Multi shot testing- Optional (Cl. 8), Wet test for polymer material optional (Cl. 9), Extreme temperature test- optional (Cl. 10)
6.	Scope of the Licence:	:	Licence is granted to use Standard Mark as per IS 17435:2020 with the following scope:
	Name of product	:	Ballistic Shields
	Size	:	Small/Large
	Suitability for optional operating conditions	:	Suitability for optional operating conditions: • Suitable for/Not suitable for Multi shot operating condition • Suitable for/Not suitable for Wet operating condition • Suitable for/Not suitable for Extreme temperature operating condition

	Optional operational aids	:	• With/without High resolution camera with capability to function effectively during day and night • With/without Display screen on the rear side facing the user to get the real time frontal view • With/without Camera having the facility to record the real time video with minimum storage capacity for 45 min with the resolution of 5 mega pixels. • With/without Infrared illuminator • With/without Self-standing capability
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ANNEX B

Grouping Guidelines

1. Ballistic Shields as per IS 17435: 2020 are classified in to different varieties based on following:
 - **Size:** Small/Large
 - **Suitability for optional operating conditions:**
 - Suitable for/Not suitable for - Multi shot operating condition
 - Suitable for/Not suitable for - Wet operating condition
 - Suitable for/Not suitable for - Extreme temperature operating condition
2. Sample of ballistic Shields of any size may be tested to cover both sizes (Small and Large) , provided the material used is same. In case of change in material, separate sample shall be tested.
3. In case suitability for optional operating conditions (Multi shot, Wet , Extreme temperature) are desired to be covered, separate sample shall be tested for applicable operating condition.
4. The Firm shall declare the varieties of Ballistic Shields they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
5. During the operation of the Licence, BO shall ensure that all the material and capacities covered in the Licence are tested in rotation, to the extent possible.

ANNEX C**List of Test Equipment**

Guidance list of major test equipment required to test as per the Indian Standard

S.no.	Tests used in with Clause Reference		Test Equipment
	Cl. No.	Test	
1.	5.4	Dimensions and Weight	Measuring tape, Steel scale, Vernier Calipers Weighing Balance
2.	7	Ballistic evaluation	Test layout, Weapon systems, target stand, velocity measurement and other diagnostic systems, Backing material, rollers/striking devices, conditioning chamber, drop test calibration setup, apparatus for measuring depth of indentation and back face signature/digital depth gauge (LC 0.01 mm), Ballistic shield Mounting, Strapping arrangement, Witness plate of Aluminum alloy AA 2024 T3 (or T4) of specified thickness
3.	9	Wet test (optional)	Water bath
4.	10	Extreme temperature test (optional)	Heating arrangement for shield

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

ANNEX D**Scheme of Inspection and Testing****1. QUALITY ASSURANCE PLAN**

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan 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 defining the control unit i.e. Batch and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4 below.

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.

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

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in-house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer, and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in-house as “R” or other tests which can be sub-contracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) also is optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. LABELLING AND MARKING – As per the requirement of IS 17435:2020. The Standard Mark, as given in the Schedule of the licence, shall be marked on each shield 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”.

User Manual Shall be provided with each shield as mentioned in Cl. 14 of IS 17435: 2020.

4. REJECTION - All the production which conforms to the Indian Standard and covered under scope of the licence shall be marked with 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

TABLE 1

(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				
5	Construction and Workmanship	5	IS 17435	R	Manufacturer shall exercise adequate levels of control to ensure that entire production should conform to the Standard. Appropriate records of testing indicating conformity shall be maintained		
7	Ballistic Testing	7	IS 17435 IS 17501	S	Manufacturer shall exercise adequate levels of control to ensure that entire production should conform to the Standard. Appropriate records of testing indicating conformity shall be maintained		
Tests for optional operating conditions							
8	Multi-hit ballistic testing	8	IS 17435	S	Special inspection level S-4 as given in IS 2500 (Part 1) shall be used for ballistic evaluation. AQL of 2.5 percent shall be considered (see Annex B & C of IS 17435 for sampling plans, AQL and example) for ballistic evaluation. Decision on critical and major defect during lot testing shall be taken based on the criteria specified in 11.4. The firm shall declare that for each lot of shields, the materials used are the same		
9	Wet test applicable for polymer material	9	IS 17435	S			
10	Extreme temperature test	10	IS 17435	S			

Note 1: Being a product which is meant to ensure the safety of the user from bullet injuries, testing of shields for ballistic evaluation based on the lot sampling plan given in Cl 11.2 and Annex B of IS 17435: 2020 is specified.