

## **IS 17051 : 2018 TEXTILES — BULLET RESISTANT JACKETS — PERFORMANCE REQUIREMENTS**

The Indian military and security forces face a number of small arms threats. It is important to set minimum performance requirements of bullet resistant jackets and also screen their supply so that only acceptable quality reaches the user which eventually leads to reduction in fatal casualties to the security forces wearing such bullet resistant jackets.

A good bullet resistant jacket should provide adequate protection, be made from high-quality materials, offer comfort and fit, feature a discreet design, ensure breathability, demonstrate durability, be versatile, and allow for easy maintenance. These factors collectively contribute to the effectiveness and usability of the jacket in real-world scenarios.

This standard IS 17051 : 2018 'TEXTILES — BULLET RESISTANT JACKETS — PERFORMANCE REQUIREMENTS' prescribes the minimum performance requirements of bullet resistant jackets for protection against small arms and ammunition and provides procedures for their evaluation. The scope of the standard is limited to physical and ballistic evaluation of bullet resistant jackets against in-service small arms ammunition used by the Indian armed forces, paramilitary, state police forces and other law enforcement agencies.

This standard does not cover the threats from knives, sharply pointed instruments and shards, splinters and fragments from the hand grenades. This standard covers only the basic design of bullet resistant jackets and provides guidelines with respect to their evaluation.

This Indian Standards specifies the requirements of the Shape and Construction, labelling, marking, sampling plan for testing of the Bullet Resistant Jackets. This Indian Standards also prescribes the physical requirements of non-ballistic components which includes the following requirements of Outer Carrier Fabric:

1. Mass;
2. Tensile strength;
3. Tear strength;
4. Flame resistance;
5. Resistance to water penetrations; and
6. Colour fastness;

This Indian Standards also prescribes the following requirements of Hook and Loop Fasteners:

1. Sheer strength;
2. Peel strength; and
3. Endurance test of 5 000 cycles of closing and opening operations.

Additionally, this Indian Standard prescribes the following requirements for physical requirements of ballistic components:

1. Protection Area of Soft Armour Panel (SAP);
2. Protection Area of Hard Armour Panel (HAP);

3. Areal Densities of Bullet Resistant Panels;
4. Weight of Bullet Resistant Jacket;
5. Evenness of Ballistic layer of HAP

The Performance Requirements prescribed in the Indian Standard are as follows:

1. Classification of Threat levels;
2. Test for Behind Armour Blunt Trauma;
3. Test for Back Face Signature (BFS);
4. Test for Upper prediction limit of BFS;
5. Ballistic Limit;
6. Shelf Life of SAP and HAP ballistic panels.

The test procedures for carrying out the above tests and format for compilation of various tests are also prescribed in the Indian Standards.

This Indian Standard facilitates the following stakeholders:

1. Manufacturer/supplier — Design and develop bullet resistant jackets according to the requirements of the user.
2. User — Selection of bullet resistant jackets based on threat perception. Evaluating effect of operating conditions on performance and evaluation of service life, positioning samples for testing etc.
3. Testing agency — Evaluation of minimum performance and lot certification for bullet resistant jackets along with test methodologies and equipment to be used for evaluation.

In short, the Indian Standards prescribes the basic desirable requirements for safety and performance bullet resistant jackets.