



PRODUCT MANUAL FOR NON-METAL HELMET FOR POLICE FORCE ACCORDING TO IS 9562 : 1980

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 9562 : 1980
	Title	:	NON METAL HELMET FOR POLICE FORCE
	No. of Amendments	:	5
2.	Sampling Guidelines		
a)	Raw material	:	As per clause 3 of IS 9562 : 1980
b)	Grouping guidelines	:	Each variety of helmet shall be tested to cover that variety in the licence
c)	Sample Size	:	8 Helmets - for all tests
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 :		
	(i) Sizes (Clause 4)	(vi) Penetration resistance (Clause 9.2)	
	(ii) Constructional requirement (Clause 5)	(vii) Strength of Retention System (Clause 9.3)	
	(iii) Workmanship and finish (Clause 6)	(viii) Rigidity Test (Clause 9.4)	
	(iv) Mass (Clause 7)	(ix) Flammability resistance (Clause 9.6)	
	(v) Shock absorption test (Clause 9.1)	(x) Firing Test (Clause 9.7)	
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 9562 : 1980 with the following scope:		
	Name of the product	NON METAL HELMET FOR POLICE FORCE	
	Type	- With or without neck protection - With or without Visor - With or without Fire test	
	Sizes	--- mm	

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.	Sizes (Clause 4)	<ul style="list-style-type: none"> - Head form - Fixed plug gauge / expanding gauge
2.	Shell (Clause 5.2)	<ul style="list-style-type: none"> - Vernier Caliper - Radius Gauge - Rod of diameter 10 mm
3.	Mass (Clause 7)	<ul style="list-style-type: none"> - Weighing balance
4.	Shock absorption resistance (Clause 9.1)	<ul style="list-style-type: none"> - As per A-1 of IS 9562 : 1980 - Conditioning chamber to maintain temperature of $65 \pm 2^\circ \text{C}$ and $-10 \pm 2^\circ \text{C}$ - Continuous water flowing arrangement over helmet
5.	Penetration resistance (Clause 9.2)	<ul style="list-style-type: none"> - Conditioning chamber to maintain temperature of $65 \pm 2^\circ \text{C}$ and $-10 \pm 2^\circ \text{C}$ - Continuous water flowing arrangement over helmet - Wooden headform as per IS 7692 - Steel Plate (300 mm square and 6 mm thickness) - Steel tape / scale - Cylindrical steel striker of 2 kg mass, diameter 32 mm & lower end a conical point with included angle 36° and tip radius 0.5 mm - Depth gauge
6.	Strength of Retention System (Clause 9.3)	<ul style="list-style-type: none"> - Wooden headform as per IS 7692 - Testing arrangement as per clause C-1.1 of IS 9562 : 1980 - Loads of 0.25 kN - Stop watch - Vernier caliper / Steel scale
7.	Rigidity Test (Clause 9.4)	<ul style="list-style-type: none"> - Press with two parallel metal plates - Load of 30 N, 100 N (6) - Stop watch - Vernier caliper / Steel scale

8.	Water Absorption (Clause 9.5)	<ul style="list-style-type: none"> - Weighing balance - Water bath with temperature control (27 ± 2 °C)
9.	Flammability resistance (Clause 9.6)	<ul style="list-style-type: none"> - Copper wire 0.71 mm diameter - Burner - Stop watch - Arrangement for rotating at steadily speed at 2 rev/min
10.	Firing Test (Clause 9.7)	<ul style="list-style-type: none"> - Wooden headform as per IS 7692 - Gun and cartridge (As per G-1.1.1 of IS 9562 : 1980) - Measuring Tape

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

ANNEX B

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. LABELLING AND MARKING – As per the requirements of IS 9562 : 1980.

4. CONTROL UNIT – All helmets of the same size manufactured from same material in one 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 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				
3	Material	3.1 to 3.3	IS 9562	-	-	Each consignment	Conformity shall be ensured.
4	Sizes	4.1	IS 9562	R	Two	Every hour	In case of failure, all helmets manufactured during that hour shall be tested and helmets conforming shall be accepted.
5	Constructional requirement	5.1, 5.2, 5.3.1 to 5.3.3	IS 9562	R	Two	Every hour	-
5.3.4	Neck protector (where required)	5.3.4	IS 9562	R	Two	Every hour	-
5.3.5	Visor (where required)						
	Visor – Fixing arrangement	5.3.5	IS 9562	R	Two	Every hour	-
	Visor - Requirements	5.3.5	IS 9562 IS 9995	S	One	Each consignment	No further testing is required, if material received with test certificate or ISI Marked.
6	Workmanship and finish	6.1, 6.2	IS 9562	-	Each helmet	-	-
7	Mass	7.1	IS 9562	R	Two	Every hour	-
9	Performance requirements						
9.1	Shock absorption resistance	9.1 , Appendix-A	IS 9562	S	Three	Once in three months	#

9.2	Penetration resistance	9.2, Appendix-B	IS 9562	R	One	Once a month	In case of failure of any sample, twice the number of samples from the same lot shall be tested. The lot shall be accepted only if retested samples pass
9.3	Strength of Retention System	9.3, Appendix-C	IS 9562	R	One	Once a month	
9.4	Rigidity Test	9.4, Appendix-D	IS 9562	R	Two	Once a month	
9.5	Water Absorption	9.5, Appendix-E	IS 9562	R	Two	Once a month	
9.6	Flammability resistance	9.6, Appendix-F	IS 9562	R	Two	Once a month	
9.7	Firing Test (where required)	9.7, Appendix-G	IS 9562	S	Two	Once in three months	#

In case of failure, marking shall be stopped and corrective actions shall be taken. Improved samples (Three/Two each as the case may be) from three days production shall be tested and original frequency may be resumed if all tested samples are passing.

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