

## PRODUCT MANUAL FOR MULTIPURPOSE DRY BATTERIES ACCORDING TO IS 8144:2018

*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.	<b>Product</b>	:	IS 8144:2018
	<b>Title</b>	:	Multipurpose Dry Batteries
	<b>No. of Amendments</b>	:	Nil
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	—
b)	<b>Grouping guidelines</b>	:	Multipurpose Dry Batteries are classified into R03, R6, R14 and R20 based on designation and ‘Standard (S)’ or ‘High Power (P)’ based on category. Accordingly, each variety of Multipurpose Dry Batteries [R03, R6S, R6P, R14S, R14P, R20S, R20P] shall be tested for GOL and Inclusion.
c)	<b>Sample Size</b>	:	20 nos. of batteries
3.	<b>List of Test Equipment</b>	:	Please refer <a href="#">ANNEX – A</a> .
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer <a href="#">ANNEX – B</a> .
5.	<b>Possible tests in a day :</b>		
	(i)	Checking of Dimensions, Terminals and Markings	
6.	<b>Scope of the Licence :</b>		
	“Licence is granted to use Standard Mark as per IS 8144:2018 with the following scope:		
	Name of the product : Multipurpose Dry Batteries		
	Variety : R03, R6S, R6P, R14S, R14P, R20S, R20P		

**ANNEX A****List Of Test Equipment***Major test equipment required to test as per the Indian Standard*

<b>Sl. No</b>	<b>Test Equipment</b>	<b>Tests Used in with Clause reference</b>
1	Vernier Caliper	Cl. 5
2	Megger	Cl. 9.4, Cl. 9.5, Cl. 9.6, Cl. 9.7
3	Dimmerstat	Cl. 9.4, Cl. 9.5, Cl. 9.6, Cl. 9.7
4	Wheatstone Bridge	Cl. 9.4, Cl. 9.5, Cl. 9.6, Cl. 9.7
5	Ammeter	Cl. 9.4, Cl. 9.5, Cl. 9.6, Cl. 9.7
6	Voltmeter	Cl. 9.4, Cl. 9.5, Cl. 9.6, Cl. 9.7
7	Timer	Cl. 9.4, Cl. 9.5, Cl. 9.6, Cl. 9.7
8	Humidity Chamber	Cl. 9.7
9	Life Test Equipment	Cl. 9.4, Cl. 9.5, Cl. 9.6, Cl. 9.7

*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 8144:2018.

**4. 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.

**4.1** All the production which conforms to the Indian Standard and covered by the licence should be marked with Standard Mark.

**5. 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				
5	Dimensions	5		R	One	2 hrs	In case of failure the marking of the batteries of that designation & application shall be suspended and after a thorough investigation the defect shall be rectified. The marking shall be resumed when batteries of that designation & application taken from the improved lot show conformity to the requirements
6	Terminals	6	IS 8144	R	One	2 hrs	
		4.1.3.2	IS 6306				
8	Marking	4.1.6	IS 6303	R	One	2 hrs	
		8.2	IS 8144				
9.4	Initial Life Test	5.3, 6	IS 6303	R	Nine	Once a month for each variety	
		9.4	IS 8144				
9.5	Delayed Life Test	5.3, 6	IS 6303	R	Nine	Once in three months for each variety	
		9.4, 9.5	IS 8144				
9.6	Leakage Test	5.7	IS 6303	R	Nine	Once a month for each variety	
		9.6	IS 8144				
9.7	Delayed life test under dry heat conditions	Table 4	IS 6303	R	Nine	Once in six months for each variety	
		9.7	IS 8144				

Note- 1: 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.