

**भारतीय मानक ब्यूरो**  
**केंद्रीय मुहर विभाग –III**

हमारा संदर्भ : सी एम डी- III /16: 60079-1

12 02 2018

विषय : आई एस/ आई ई सी 60079-1: 2007 के प्रमाणीकरण के लिए संशोधित ड्राफ्ट एस टी आई

इसे उपरोक्त विषय का संदर्भ प्राप्त है।

आईएस/ आई ई सी 60079-1: 2007 के लिए संशोधित एस टी आई संलग्न हैं।

सक्षम प्राधिकारी ने उपरोक्त एस टी आई को अनुमोदित कर दिया है।

सभी शाखा कार्यालयों से अनुरोध है की उपरोक्त दिशानिर्देश का अनुपालन तत्काल प्रभाव से सुनिश्चित करें।

औरोस्मिता कबिराज  
वैज्ञानिक बी (सी एम डी-III)

प्रमुख (सी एम डी-III)

सभी क्षेत्रीय/शाखा कार्यालय

आई टी एस विभाग – बीआईएस इंटरनेट पर डालने हेतु

**BUREAU OF INDIAN STANDARDS**  
**CENTRAL MARKS DEPARTMENT – III**

Our Ref: CMD III/16: IS/IEC 60079-1

12 Feb 2018

**Subject: Revised STI for certification of Electrical equipment for use in explosive atmospheres Part 1 – equipment protection by Flameproof Enclosures “d” as per IS/IEC 60079-1:2007**

The STI for certification of Electrical equipment for use in explosive atmospheres Part 1 – equipment protection by Flameproof Enclosures “d” as per IS/IEC 60079-1:2007 has been revised based on representations and comments from the Industry. The finalized STI as approved by CA is enclosed.

In this regard, it is also highlighted that the Technical Committee has clarified that since IS/IEC 60079-0 is a referred standard in IS/IEC 60079-1:2007 and the edition cited is withdrawn, therefore IS/IEC 60079-0:2004 or later version can be followed for implementation purpose.

All ROs/BOs are requested to ensure the implementation of the above guidelines with immediate effect.

(Aurosmitta Kabiraj)  
Scientist-B

**Head (CMD-III)**  
**DDG(Certification)**

**Circulated to: All ROs/BOs**

**Copy to: ITS-for hosting on Intranet please**

**SCHEME OF TESTING AND INSPECTION  
FOR CERTIFICATION OF  
ELECTRICAL EQUIPMENT FOR USE IN EXPLOSIVE ATMOSPHERES  
PART 1 – EQUIPMENT PROTECTION BY FLAMEPROOF ENCLOSURES “d”  
ACCORDING TO IS/IEC 60079-1:2007**

**1. LABORATORY**

**1.1** A laboratory shall be maintained which shall be suitably equipped and staffed, where different tests given in the Specification shall be carried out in accordance with the methods given in the Indian Standard.

**1.2** All test equipment shall be periodically checked, verified and calibrated and records of such checks/verification/calibration shall be maintained.

**2. TEST RECORDS**

**2.1** All records of tests as per this Scheme of Testing and Inspection shall be kept in suitable forms.

**2.2** Copies of any such records that may be required by BIS shall be made available at any time on request.

**3. QUALITY CONTROL**

**3.1** It is recommended that, as far as possible, Statistical Quality Control (SQC) methods may be used for controlling the quality of the product during production as envisaged in this Scheme [see IS 397 (various parts)].

**3.2** In addition, effort should be made to gradually introduce a Quality Management System in accordance with IS/ISO 9001.

**4. STANDARD MARK**

The Standard Mark, as given in Column (1) of the First Schedule of the licence, shall be applied on the main part of each equipment provided always that the equipment to which the standard mark is so applied conforms to every requirement of the specification and is similar in every respect to the approved design.

**4.1** The Standard Mark may be incorporated in a name plate. The name plate is applied in a manner and at a place such that there is no possibility of its being removed from the equipment and applied on some other sub-standard equipment.

## 5 MARKING

In addition, the following shall be provided on the main part of the equipment either by 'Raised lettering cast integrally with the body of the equipment' or 'attaching a plate having the details riveted to or otherwise permanently attached to the apparatus in a manner, which will not impair the flameproof nature of the enclosure':

- a) Name of the manufacturer or his registered trade mark;
- b) Manufacturer's type identification;
- c) Serial no. of the equipment assigned (for traceability of records);
- d) BIS Certification Marks licence number "CM/L ....."
- e) Markings required by the statutory authorities.

**5.1** The information as given under clause 20 of IS/IEC 60079-1:2007 and clause 29 & Annex A.4 of IS/ IEC 60079-0:2004 shall also be provided on each equipment.

**5.2** For small equipment & small Ex-components, where marking space is limited, marking shall be as per clause 29.6 of IS/IEC 60079-0:2004.

**5.3** Manufacturer shall issue certificate of conformity as per clause 28 of IS/IEC 60079-0: 2004.

## 6. LEVELS OF CONTROL

**6.1** The tests as indicated in Table 1, and at the levels of control specified therein, shall be carried out on the whole production of the factory covered by this scheme and appropriate records maintained in accordance with clause 2 above and charts may be maintained as per clause 3 above. All the production which conforms to the Indian Standard and covered by this licence shall be marked with Standard Mark.

**6.2** Each of the samples taken for the tests shall satisfy the requirements of the specification.

**6.3** On the basis of the test results, decision regarding conformity or otherwise of the production shall be made.

**6.4** In respect of all other clauses of the Specification and at all stages of manufacture, the factory shall maintain appropriate control and checks to ensure that the product conforms to various requirements of the Specification.

## 7. REJECTIONS

**7.1** A separate record shall be maintained giving information relating to the rejection of the production not conforming to the requirements of the Specification and the method of disposal. Such material shall in no case be stored together with that conforming to the Specification. The Standard Mark (if already applied) on rejected material shall be defaced.

## **8. SAMPLES**

**8.1** The licensee shall supply, free of charge, the samples required in accordance with the Bureau of Indian Standards (Certification) Regulations, 1988, as amended from time to time, from the factory or godown. BIS may draw samples from the open market, if available.

## **9. REPLACEMENT**

**9.1** Whenever a complaint is received soon after the goods with Standard Mark have been purchased and used, and if there is adequate evidence that the goods have not been misused, defective goods shall be replaced free of cost by the licensee in case the complaint is found to be genuine and the warranty period (where applicable) has not expired. The final authority to judge the conformity of the product to the Indian Standard shall be with BIS.

**9.2** In the event of any damage caused by the goods bearing the Standard Mark, or any claim being filed by the consumers against BIS Standard Mark and not “conforming to” the relevant Indian Standard, entire liability arising out of such non-conforming product shall be of the licensee and BIS shall not in any way be responsible in such cases.

## **10 STOP MARKING**

**10.1** The marking of the product shall be stopped under intimation to BIS if, at any time, there is some difficulty in maintaining the conformity of their product to the Specification, or the testing equipment goes out of order or due to any other reason. The marking may be resumed as soon as the defects are removed under intimation to BIS.

**10.2** The marking of the product shall be stopped immediately if directed to do so by BIS for any reason. The marking may then be resumed only after permission by BIS. The information regarding resumption of marking shall also be sent to BIS.

## **11 PRODUCTION DATA**

The licensee shall send to BIS a statement of quantity produced, marked and exported by him and the value thereof at the end of each operative year of the licence as per the enclosed proforma which has to be authenticated by a Chartered Accountant.

**IS/IEC 60079-0:2004**  
**ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES**  
**PART 0 – GENERAL REQUIREMENTS**  
**TABLE 1 LEVELS OF CONTROL**  
**(Para 6 of the Scheme of Testing and Inspection)**

TEST DETAILS			LEVELS OF CONTROL		
Cl.	Requirement	Test Methods Clause Reference	No. of samples	Frequency	Remarks
7	Enclosure-Non metallic	7 of IS/IEC 60079-0	One	Sample from each lot of material received as one batch to be selected	Only the materials as per details listed in the Type Test Certificate shall be used.  Testing is not necessary if each lot received is accompanied with the Material Test Certificate of the manufacturer of the incoming material.  If any bought out Ex Components are used, the suitability of the same shall be checked with reference to its Type Test Certificate.
8	Enclosure-Metallic	8 of IS/IEC 60079-0	One		
12	Cement and Sealing material	12 of IS/IEC 60079-0	One		
21.1	Light Transmitting Parts - Glass	21.1, 26.4.2 & 26.5.2 of IS/IEC 60079-0	One		
21.1	Light Transmitting Parts - Non metallic other than glass	7, 21.1, 26.4.2, 26.8, 26.9 & 26.11 of IS/IEC 60079-0	One		
9	Fasteners	9 of IS/IEC 60079-0	One		
23	Cells & Batteries	23 of IS/IEC 60079-0	One		
4 to 23 & 27	Construction & workmanship	4 to 23 and 27 of IS/IEC 60079-0	Each equipment	--	Based on the approved/ certified drawings, detailed manufacturing drawings shall be prepared which shall contain all the applicable checks and requirements as per Clauses <b>27 and 4 to 23 of IS/IEC 60079-0</b>
28.1 & 28.2	Certificate of Conformity	28.1, 28.2 of IS/IEC 60079-0	-do-	--	Please also see Clause 5.3 of STI
26	Type tests	26 of IS/IEC 60079-0	One sample to be selected from each product group [Please see Note under *]	See remarks column on right	Type test to be carried out after 5 years of last type approval for any type/size/variety in that product group [Please see Note under **]

## IS/IEC 60079-1:2007

**ELECTRICAL EQUIPMENT FOR USE IN EXPLOSIVE ATMOSPHERES  
PART 1 – EQUIPMENT PROTECTION BY FLAMEPROOF ENLCOSURES “d”**

**TABLE 1 LEVELS OF CONTROL**

**(Para 6 of the Scheme of Testing and Inspection)**

TEST DETAILS			LEVELS OF CONTROL		
Cl.	Requirement	Test Methods Clause Reference	No. of samples	Frequency	Remarks
9	Light-transmitting parts – other than glass	19 of IS/IEC 60079-1	One	Sample from each lot of material received as one batch to be selected	Only the materials as per details listed in the Type Test Certificate shall be used. Testing is not necessary if each lot received is accompanied with the Material Test Certificate of the manufacturer of the incoming material. If any bought out Ex Components are used, the suitability of the same shall be checked with reference to its Type Test Certificate.
10	Crimped Ribbon & Multiple Screen Elements	Annex A of IS/IEC 60079-1	One		
10	Sintered Metal, Pressed Wire & Metal Foam Element	Annex B of IS/IEC 60079-1	One		
11	Fasteners	11 & Annex F of IS/IEC 60079-1	One		
4 to 13 & 17 to 19	Construction & workmanship	4 to 13 & 17 to 19 of IS/IEC 60079-1	Each equipment	--	Based on the approved/ certified drawings, detailed manufacturing drawings shall be prepared which shall contain all the applicable checks and requirements as per Clauses <b>4 to 13 &amp; 17 to 19 of IS/IEC 60079-1</b>
15.1.3 & 16	Routine Tests/ Overpressure Test	15.1.3 & 16 IS/IEC 60079-1	-do-	--	--
20	Marking	20 & 29, A4 of IS/IEC 60079-0	-do-	--	Please also see Clause 5.3 of STI
15	Type tests	15 of IS/IEC 60079-1	One sample to be selected from each product group [Please see Note under *]	See remarks Column on right	Type test to be carried out after 5 years of last type approval for any type/size/variety in that product group [Please see Note under **]

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FLPs can be classified into the following product groups :

- i. Luminaires (all types of lighting fittings including fittings with well glass, flat glass, tubular glass; bulk head; flood light; hand lamp; etc.)
- ii. Rotating Electric Machines (all types of rotating machines including motors, generators, etc.)
- iii. General purpose enclosures (all types of control stations; control panels; control gears; switchgears; junction boxes; terminal boxes; transformers; empty flameproof enclosures; etc.)
- iv. Others (not covered in the above groups like instruments; telephones; heaters)

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- i. For a given product group, the period of 5 years for that product group may be counted from the date of grant/ the last inclusion which involves type-testing of that type/size/variety .
- ii. Over-pressure test in accordance with Cl. 15.1.3 of IS/IEC 60079-1 is to be carried out considering the explosion pressure determined at the time of prototype approval, hence, Explosion pressure or reference pressure need not be determined again. Over-pressure test need not be carried out for cases where it is done in the factory as a routine test.
- iii. Tests for Non-transmission of internal ignition shall be carried out on samples subjected to the Tests of enclosures in accordance with IS/IEC 60079-0.

## PERFORMA - 1

### PROFORMA FOR OBTAINING PRODUCTION DETAILS

Period covered

Name of Licensee

CM/L No.

Name of Articles (s) IS No.  
Grade/Type/Size/Variety/Class/Rating

- 1.1 Brand/Trade/Name(s) of BIS Certification Marked Products
- 2.0 Total production of the articles(s) licensed for certification marking
- 2.1 Total production of the article(s) conforming to Indian Standard
- 3.0 Production covered with BIS Certification Mark and its value
  - a) Quantity
  - b) Value (Rs.)
- 3.1 Brand Name used on production covered under BIS Certification Mark
- 3.2 Calculation of marking fee on unit-rate basis; Marking Fee per unit
  - a) Unit
  - b) Quantity covered with BIS Certification Mark
  - c) Marking fee rounded off in whole rupees as obtained by applying unit rates given in (a) on quantity given in (b)

Note: In case a clause is not applicable, suitable remarks may be given against it.

- 4.0 Quantity not covered with BIS Certification Mark. If any, and the reasons for such non-coverage
  - 4.1 Brand Name under which non certified goods were sold
- 5.0 Quantity Exported with BIS Standard Mark and its value
  - 5.1 Brand Name under which BIS Certified goods are exported
- 6.0 Authentication by Chartered Accountant