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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE 31 EQUIPMENT FOR EXPLOSIVE ATMOSPHERES

Routine dielectric strength test of circuits to environment according IEC 60079-18 clause 9.2

INTERPRETATION SHEET

IEC60079-18 Edition 4.0: Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
This **draft** for an interpretation sheet has been prepared by IEC technical committee 31: Equipment for explosive atmospheres in accordance with Administrative Circular AC/42/2004 new procedures for Interpretation of standards Annex 2: New text for ISO/IEC Directives (IEC Supplement).

There has been a request for formal interpretation for clarification of the Routine dielectric strength test of circuits to environment according IEC 60079-18 clause 9.2

Comments / proposals should be submitted using the IEC Electronic voting system by the National Committees. (See AC/3/2011).

Comments/ proposals to be returned by 2016-08-19

Yours sincerely

M Maghar
Secretary IEC/TC 31

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Routine dielectric strength test of circuits to environment according IEC 60079-18 clause 9.2

Questions:

Is it necessary to do in all cases a piece by piece routine dielectric strength test between accessible circuits (e.g. external connections) of m-equipment and the surface of the plastic enclosure or compound surface of the equipment?

Interpretation:

In IEC 60079-0 following statement is given covering tests required after or during production

> **“28 Manufacturer's responsibility**
> **28.1 Conformity with the documentation**
> The manufacturer shall carry out the verifications or tests necessary to ensure that the electrical equipment produced complies with the documentation.
>
> NOTE It is not the intent of this subclause to require 100 % inspection of parts. Statistical methods may be employed to verify compliance”

A piece by piece routine test for dielectric strength between accessible circuits (e.g. external connections) and the non-metallic surface of an m-equipment may be replaced by statistical methods as routine test, to verify compliance, if the plastic enclosure or compound material datasheet specifies a breakdown voltage for the material which is greater than the test voltage required by 8.2.4 of the standard IEC 60079-18 and the external enclosure is not conductive.

It is intended that this interpretation will be introduced in IEC 60079-18 Edition 5 and therefore an Interpretation Sheet will not be required future editions.