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**Dry, solid insulating materials—Resistance
test to high-voltage low-current arc
discharges**

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by the Institute of Electrical Engineers of Japan (IEEJ)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently, **JIS C 2135** : 2004 is replaced with this Standard.

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Dry, solid insulating materials—Resistance test to high-voltage low-current arc discharges

Introduction

This Japanese Industrial Standard has been prepared based on the first edition of IEC 61621 published in 1997 with some modifications of the technical contents.

The portions given dotted underlines are the matters in which the contents of the corresponding International Standard have been modified. A list of modifications with the explanations is given in Annex JA.

1 Scope

This Standard describes a test method which can provide preliminary differentiation between similar insulating materials (hereafter referred to as “materials”), with respect to their resistance to damage when exposed to high-voltage, low-current arc discharges, occurring close to their surface.

The discharges cause localized thermal and chemical decomposition and erosion and eventually a conductive path forms across the insulating material. The severity of the test conditions is gradually increased: in the early stages a low-current arc discharge is repeatedly interrupted, whereas in the later stages, the arc current is raised in successive steps.

Because of its convenience and because of the short time required for testing, the test method is applicable for preliminary screening of materials, for detecting of effects of changes in formulation and for quality control testing.

Previous experience with this test showed acceptable reproducibility with thermoset materials. Using thermoplastics, some testing laboratories report unacceptably large variation in test results which lead to the recommendation not to use the test for thermoplastics.

NOTE 1 Attempts are being made to reduce the variability of the results of tests on thermoplastics by controlling the electrode pressure and depth of penetration into the material during the test. Without such electrode control, tests on many thermoplastics may not be sufficiently meaningful to be performed.

This test method will not, in general, permit conclusions to be drawn concerning the relative arc resistance rankings of materials which may be subjected to other types of arcs.

The ranking of material may differ from that found in wet tracking tests (for example, JIS C 2134, JIS C 2136 and JIS C 2137) and from their performance in service, where the intensity, recurrence frequency and time of exposure to arc discharges are very different.