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Heat-resisting equipment wires for aircraft — Methods of test

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FOREWORD

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Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2436 was drawn up by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, and circulated to the Member Bodies in June 1971.

It has been approved by the Member Bodies of the following countries :

Austria	India	Spain
Belgium	Italy	Thailand
Brazil	Japan	Turkey
Canada	Netherlands	United Kingdom
Czechoslovakia	New Zealand	U.S.A.
Egypt, Arab Rep. of	Romania	U.S.S.R.
France	South Africa, Rep. of	

No Member Body expressed disapproval of the document.

Heat-resisting equipment wires for aircraft – Methods of test

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the test methods suitable for establishing the compliance of heat-resisting equipment wires for aircraft with the performance requirements stated in ISO 2032, *Heat-resisting equipment wires for aircraft*. They are intended for use as a basis for specifying tests in the relevant national specifications where the national type approving authorities consider that existing tests are inadequate.

The test methods are classified as follows :

- I Type tests only
- II Type and production routine tests
- III Type and production quality tests

I TYPE TESTS ONLY

2 AGEING IN AIR AT HIGH TEMPERATURE, FOLLOWED BY AN INSULATION TEST WHILE IMMERSSED IN WATER

2.1 The object of this test is to confirm that there is no cracking of the constituent parts of the equipment wire after heating and that the equipment wire will not break down electrically due to displacement of the conductor resulting from deformation of the insulation at high temperature.

2.2 Two specimens of equipment wire shall be bent into U-loops, each with an internal diameter ten times the maximum specified diameter of the equipment wire. The specimens shall then be placed in an air oven at a temperature of 275 ± 5 °C for 168 h. At the conclusion of this period, the specimens shall be removed from the oven and shall show no signs of splitting or cracking when examined by normal vision. Discoloration of the equipment wire or of the printed legend shall not be deemed a failure but any printed identification on the wire shall remain legible.

2.3 The specimens of equipment wire shall then be immersed in water at 20 ± 5 °C for 5 min with the ends protruding 100 mm (4 in) above the surface and, while so immersed, they shall withstand without breakdown the appropriate voltage shown in the table below, applied gradually and maintained for 1 min between the conductor and the water.

Type of equipment wire	Voltage test V r.m.s.
A	750
B	1 000
C	2 000

3 AGEING IN AIR AT HIGH TEMPERATURE, FOLLOWED BY AN INSULATION TEST AT THE AGEING TEMPERATURE

3.1 The purpose of this test is to confirm that the equipment wire is able to withstand voltages expected in service even when at a high temperature and the insulation is in a mechanically strained condition.

3.2 Five turns of equipment wire shall be wound on, and retained in close contact with, a metal mandrel, the diameter of which is ten times the maximum specified diameter of the equipment wire.

3.3 The assembly shall then be placed in an air oven at 275 ± 5 °C. After 168 h and while still at this temperature, the appropriate voltage shown in the table in 2.3 shall be applied between the conductor and the mandrel for equipment wires that are not metal braided, and between the conductor and the metal braid where a metal braid is incorporated. The equipment wire shall withstand the voltage for 30 min without electrical failure.