

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 1491

METHODS OF TEST
FOR HEAT-RESISTING (260 °C) ELECTRICAL CABLES
WITH COPPER CONDUCTORS FOR AIRCRAFT

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 1491, *Methods of test for heat-resisting (260 °C) electrical cables with copper conductors for aircraft*, was drawn up by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1491 which was circulated to all the ISO Member Bodies for enquiry in June 1968. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium	Italy	Switzerland
Canada	Netherlands	Thailand
Czechoslovakia	New Zealand	Turkey
France	Peru	U.A.R.
Iran	South Africa, Rep. of	United Kingdom
Israel	Spain	Yugoslavia

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council which decided to accept it as an ISO RECOMMENDATION.

METHODS OF TEST
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1. SCOPE

This ISO Recommendation describes the tests suitable for establishing the compliance of heat-resisting (260 °C) electrical cables with copper conductors for aircraft with the performance requirements stated in ISO Recommendation R 1490, *Performance requirements for heat-resisting (260 °C) electrical cables with copper conductors 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 tests 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. VOLTAGE TEST AT HIGH TEMPERATURE**

- 2.1 The object of this test is to check that the cable is able to withstand voltages expected in service, even when at a high temperature and the insulation is in a mechanically strained condition.
- 2.2 Five turns of cable should 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 cable for sizes 22 to 10 and fifteen times the diameter of the cable for sizes 8 to 0000.
- 2.3 The assembly should be placed in an air oven, the temperature of which should be raised slowly to a temperature within the range 311 to 316 °C. After 120 hours at this temperature, a voltage of 1500 V (r.m.s.) should be applied between the conductor and the mandrel for cables that are not metal braided, and between the conductor and the metal braid where a metal braid is incorporated. The cable should withstand this voltage for 30 minutes without signs of electrical failure.