

# ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

## ISO RECOMMENDATION

### R 1468

METHODS OF TEST

FOR GENERAL PURPOSE ELECTRICAL CABLES  
WITH ALUMINIUM OR ALUMINIUM ALLOY CONDUCTORS  
FOR AIRCRAFT

1st EDITION

July 1970

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## BRIEF HISTORY

The ISO Recommendation R 1468, *Methods of test for general purpose electrical cables with aluminium or aluminium alloy 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. 1468 which was circulated to all the ISO Member Bodies for enquiry in December 1967. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium  
Canada  
Israel  
Italy  
Japan

Netherlands  
New Zealand  
Poland  
Spain  
Switzerland

Turkey  
U.A.R.  
United Kingdom

The following Member Bodies opposed the approval of the Draft :

France  
U.S.S.R.

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

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# **METHODS OF TEST** **FOR GENERAL PURPOSE ELECTRICAL CABLES** **WITH ALUMINIUM OR ALUMINIUM ALLOY CONDUCTORS** **FOR AIRCRAFT**

## **1. SCOPE**

- 1.1 This ISO Recommendation describes the methods of tests suitable for establishing the compliance of general purpose electrical cables with aluminium or aluminium alloy conductors for aircraft with the performance requirements stated in ISO Recommendation R 1076, *General purpose electrical cables with aluminium or aluminium alloy conductors for aircraft*. It is 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.

- 1.2 Requirements differing from those of ISO Recommendation R 634, *Methods of test for general purpose electrical cables with copper conductors for aircraft*, are marked ‡.

## **I. TYPE TESTS ONLY**

## **2. RESISTANCE TO TYPICAL AIRCRAFT FLUIDS**

- 2.1 The object of this test is to check that the cable will not be affected, in such a way as to cause failure in service or undue difficulties in servicing, by any of the fluids with which it is likely to come into contact on modern aircraft.
- 2.2 Separate cable samples should be bent into a loop of a diameter approximately fourteen times the overall diameter of the cable and immersed each in one of the following fluids, with the ends clear of the fluid, for not less than 20 hours, at a temperature such as is likely to be experienced in service for the particular fluid :
- (a) aviation fuels;
  - (b) lubricating oils (including ester-based oils);
  - (c) hydraulic fluids (including ester-based hydraulic fluids);
  - (d) de-icing fluids.
- 2.3 After immersion, the samples should be wiped, straightened and cooled to a temperature of  $20 \pm 5^{\circ}\text{C}$ , and then subjected to a bend of  $360^{\circ}$  round a mandrel having a diameter of not more than fourteen times the overall diameter of the cable. After this treatment, the diameter of the cable should not have increased by more than 5 %. There should be no cracking, splitting or other deterioration of the outer coverings and the samples should withstand a voltage test of 1500 V r.m.s. and a frequency of any value from 25 to 100 Hz inclusive, for at least 1 minute without breakdown in water. The potential should be applied between the conductor and the water, and should be increased at a uniform rate from 0 to 1500 V within a period of 30 seconds.
- It is also possible to rate the fluid resistance of insulation on the basis of the percentage of cable weight increase.