

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 1490

PERFORMANCE REQUIREMENTS
FOR HEAT-RESISTING (260 °C) ELECTRICAL CABLES
WITH COPPER CONDUCTORS FOR AIRCRAFT

1st EDITION

July 1970

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Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 1490, *Performance requirements 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. 1490, 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	Netherlands	Thailand
Canada	New Zealand	Turkey
Czechoslovakia	Peru	U.A.R.
France	Poland	United Kingdom
Iran	South Africa, Rep. of	Yugoslavia
Israel	Spain	
Italy	Switzerland	

The following Member Body opposed the approval of the Draft :

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.

**PERFORMANCE REQUIREMENTS
FOR HEAT-RESISTING (260 °C) ELECTRICAL CABLES
WITH COPPER CONDUCTORS FOR AIRCRAFT**

1. SCOPE

- 1.1 This ISO Recommendation states the requirements for cables for the wiring of aircraft circuits in which the voltage between conductors, or between a conductor and a metal braid or the aircraft structure, does not exceed 600 V (r.m.s.) and in which the frequency does not exceed 1600 Hz. The cables are suitable for use where, in continuous service, no combination of ambient temperature and conductor current produces a stabilized conductor temperature in excess of 260 °C. The cables remain flexible at temperatures down to - 70 °C.
- 1.2 This ISO Recommendation includes the requirements for cables with copper conductors, including those with an outer covering in the form of a metal braid.

2. TERMINOLOGY

- 2.1 *Conductor.* Conducting portion of a cable.
- 2.2 *Wire.* Cylindrical metallic wire of uniform cross-sectional area, used to form the conductor.
- 2.3 *Stranded conductor.* Conductor composed of a number of wires twisted together. When the conductor consists of more than one layer, alternate layers are twisted in opposite directions.
- 2.4 *Bunched conductor.* Conductor composed of a number of wires in which all wires are twisted together in the same direction.
- 2.5 *Rope lay conductor.* Conductor in which a number of groups of wires are assembled in concentric layers. Each group may consist of wires assembled in bunched formation.
- 2.6 *Insulation.* Part of a cable which serves to insulate the conductor.
- 2.7 *Core.* Conductor and insulation of a cable, excluding all additional coverings.
- 2.8 *Metal braid.* A number of wires applied spirally over the insulation and interwoven to form a uniform and substantially continuous covering.
- 2.9 *Cable.* Complete assembly of conductor, insulation and metal braid.
- 2.10 *Sample.* Amount of cable of one and the same dimension and type, taken from a batch.
- 2.11 *Test piece.* Continuous length of cable taken from a sample.