

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 474

PERFORMANCE REQUIREMENTS FOR GENERAL PURPOSE ELECTRICAL CABLES WITH COPPER CONDUCTORS FOR AIRCRAFT

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BRIEF HISTORY

The ISO Recommendation R 474, *Performance Requirements for General Purpose Electrical Cables with Copper Conductors for Aircraft*, was drawn up by Technical Committee ISO/TC 20, *Aircraft*, the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question by the Technical Committee began in 1958 and led, in 1960, to the adoption of a Draft ISO Recommendation.

In March 1961, this Draft ISO Recommendation (No. 421) was circulated to all the ISO Member Bodies for enquiry. It was approved by the following Member Bodies:

Australia	France	Portugal
Belgium	Germany	Spain
Canada	Iran	Sweden
Chile	Israel	United Kingdom
Colombia	Italy	U.S.S.R.
Czechoslovakia	Netherlands	Yugoslavia
Finland	New Zealand	

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in February 1966, to accept it as an ISO RECOMMENDATION.

PERFORMANCE REQUIREMENTS FOR GENERAL PURPOSE ELECTRICAL CABLES WITH COPPER CONDUCTORS FOR AIRCRAFT

1. SCOPE

- 1.1 This ISO Recommendation states the requirements for cables for general purpose wiring of aircraft circuits in which the voltage between conductors, or between a conductor and metal braid or the aircraft structure, does not exceed 600 volts (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 105 °C. These cables are suitable for fixed wiring in aircraft at a temperature down to — 75 °C, but are not suitable for severe flexing at temperatures below — 30 °C. These cables do not support combustion, but they should not be regarded as complying with the requirements of ISO Recommendation R . . . * in regard to fire resistance.
- 1.2 This ISO Recommendation includes the requirements for cables with copper conductors or composite 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 stranded or bunched formation.
- 2.6 *Composite conductor*. Conductor composed of copper wires and/or wires of a metal of greater strength.
- 2.7 *Insulation*. Part of a cable which serves to insulate the conductor.
- 2.8 *Core*. Conductor and insulation of a cable, excluding all additional coverings.

* ISO Recommendation R . . . , *Environmental and operational conditions of aircraft electrical equipment. Part 5: Fire resistance*, at present Draft ISO Recommendation No. 766.