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Aircraft — Fire-resisting electrical cables — Dimensions, conductor resistance and mass

Aéronefs — câbles électriques résistant au feu — Dimensions, résistance linéique et masse

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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.

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

Belgium	India	Spain
Brazil	Israel	Switzerland
Canada	Italy	Thailand
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The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

France
U.S.A.

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Aircraft — Fire-resisting electrical cables — Dimensions, conductor resistance and mass

1 SCOPE

This International Standard specifies the dimensions, conductor resistance and mass of cables with single copper conductors, for use at a nominal voltage of 600 V, a maximum frequency of 2 000 Hz and a continuous temperature not exceeding 280 °C (ambient temperature plus heating) but which may withstand 400 °C for a limited period. The cables will retain a certain amount of dielectric strength when subjected to a flame of 1 100 °C for 5 min.

2 FIELD OF APPLICATION

This International Standard is applicable to fire-resisting electrical cables intended mainly for the equipment of fire zones in aircraft. Their characteristics and methods of test are defined in ISO 2155, *Aircraft — Fire-resisting electrical cables — Performance requirements*, and ISO 2156, *Aircraft — Fire-resisting electrical cables — Methods of test.*

3 DIMENSIONS, CONDUCTOR RESISTANCE AND MASS

The dimensions, conductor resistance and mass of fire-resisting electrical cables shall be in accordance with the values given in the following table.

Nominal area of conductor		Size No.	Minimum number of wires	Maximum resistance per unit length of finished cable at 20 °C		at 400 °C*		Maximum diameter of conductor		Maximum outside diameter of finished cable		Maximum mass per unit length of finished cable	
mm^2	in^2			Ω/km	Ω/1 000 yd	Ω/km	Ω/1 000 yd	mm	in	mm	in	g/m	lb/1 000 ft
0,38	0.000 592	22	12 or 19**	77,90	71.10	196	179	0,84	0.033	2,95	0.116	14,90	10
0,60	0.000 95	20	19	48,03	43.80	121	110	1,04	0.041	3,18	0.125	17,85	12
0,95	0.001 49	18	19	30,07	27.42	75,5	69	1,32	0.052	3,43	0.135	22,35	15
1,22	0.001 91	16	19	22,54	20.55	56,6	51.7	1,55	0.061	3,73	0.147	28,20	19
1,94	0.003 01	14	19	14,26	12.96	35,7	32.6	1,88	0.074	4,32	0.170	37,15	25
3,08	0.004 78	12	37	8,82	8.04	22,1	20.2	2,36	0.093	4,70	0.185	52,0	35
5,29	0.008 15	10	37	5,26	4.77	13,1	12.0	3,25	0.128	5,84	0.230	81,7	55
8,55	0.013 3	8	120	3,08	2.81	7,74	7.08	4,47	0.176	7,11	0.280	142,5	85
13,6	0.021 1	6	133	1,94	1.77	4,89	4.47	5,54	0.218	8,69	0.342	188,5	127
21,6	0.033 5	4	159	1,23	1.13	3,10	2.83	6,91	0.272	10,34	0.407	285,5	192
33,9	0.052 2	2	203	0,79	0.72	1,99	1.82	8,76	0.345	12,29	0.484	433	291
41,5	0.064 2	1	248	0,64	0.59	1,62	1.48	9,75	0.384	13,54	0.533	515	347
52,8	0.082 1	0	323	0,50	0.46	1,26	1.16	10,97	0.432	14,55	0.573	616	415
68	0.105	00	416	0,39	0.36	0,99	0.91	12,45	0.490	16,13	0.635	772	520
85	0.131	000	513	0,31	0.29	0,79	0.73	13,92	0.548	17,78	0.700	965	648
107	0.166	0000	666	0,25	0.23	0,63	0.58	15,62	0.615	19,56	0.770	1 330	793

* For information.

** Preferred number.

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