DRAFT INTERNATIONAL STANDARD

ISO/DIS 2100-218

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Aerospace elements of electrical and optical connection — Test methods —

Part 218:
Ageing of terminal lugs and in-line splices by temperature and current cycling

Connections électriques et optiques d'éléments aérospatiaux — Méthodes d'essai —

Partie 218: Vieillissement des cosses et des prolongateurs par cyclage en température et en courant

ICS: 49.060

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 2100 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 2100-218 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 1, *Aerospace electrical requirements*.

This second/third/... edition cancels and replaces the first/second/... edition (), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

ISO 2100 consists of the following parts, under the general title *Aerospace — Elements of electrical and optical connection - Test methods*:

— ***Part 218: Ageing of terminal lugs*** *and in-line splices by temperature and current cycling*

— *Part [n]:*

— *Part [n+1]:*

Aerospace elements of electrical and optical connection — Test methods —

Part 218: Ageing of terminal lugs and in-line splices by temperature and current cycling

1 Scope

This standard specifies a method for ageing terminal lugs and in-line splices by temperature and current cycling.

2 Normative references

ISO 2100-100, *Aerospace series — Elements of electrical and optical connection — Test methods — General*

ISO 2100-217[1)], *Aerospace series — Elements of electrical and optical connection — Test methods — Part 217: Voltage drop under specified current for terminal lugs and in-line splices*

3 Preparation of specimens

The specimens shall be fitted with their normal accessories, fitted and wired up in accordance with the technical specification.

The following details shall be specified in the technical specification:

— number of specimens;

— type of cable;

— installation and wiring of specimens;

— cycling current;

— types of accessories fitted to the specimens;

— requirement of initial measurements;

— requirement of final measurements.

4 Method

4.1 Severity

4.1.1 Crimped terminal lugs and in-line splices on copper cable

The temperature to be reached (see product standard) determines the number of cycles to which the specimens shall be subjected in accordance with the table 1:

1) Published as AECMA Prestandard at the date of publication of this standard

Table 1

Operating temperature	Number of cycles
≤ 135°C	750
> 135°C	1 500

4.1.2 Crimped terminal lugs and in-line splices on aluminium cable

All the specimens shall be subjected to 1 500 cycles.

5 Method

The specimens and the reference cable shall be subjected to the specified number of cycles comprising:

— increasing the voltage (d.c.) allowing the ageing temperature (maximum temperature sustained by the cable) to be reached in the conductor of the cable;

— maintaining the higher temperature for 15 min;

— lowering the voltage to revert to a temperature ≤ 30°C;

— maintaining the lower temperature for 5 min.

NOTE 1 : The cycling current shall be determined for each type of cable.

NOTE 2 : This test is hazardous for the operator on account of the intensities and voltages utilized.

6 Requirement

6.1 Crimped terminal lugs and in-line splices on copper cable

The voltage drop in each crimp measured in accordance with ISO 2100-217 shall not exceed the values specified in the technical specification. In addition, value *D* max. shall not exceed the value below.

D max. equals to 20% of the value measured at 500 cycles or 1 000 cycles according to the degree of severity (figure 1).

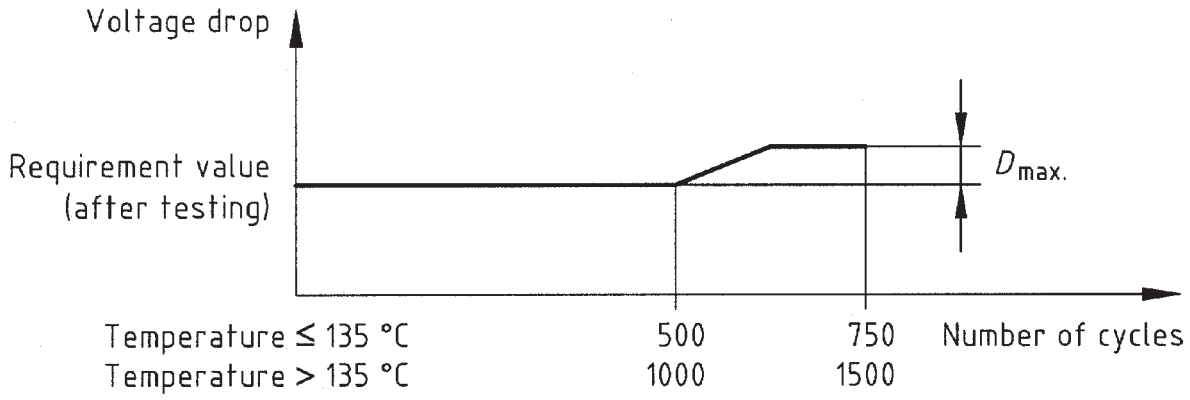

Figure 1

6.2 Crimped terminal lugs and in-line splices on aluminium cable

Measurements of the loss of voltage under nominal current (d.c.) are made on the following cycles : 1, 50, 100, 150, 300, 500, 750, 1 000,1 200, 1 300, 1 400 and 1 500.

The temperature of the terminal lug or in-line splice shall remain lower than that of the cable.