

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Amendment No. 1
to
AS/NZS 61241.0:2005
Electrical apparatus for use in the presence of combustible dust
Part 0: General requirements

CORRECTION

The 2005 edition of AS/NZS 61241.0 is amended as follows; the amendments should be inserted in the appropriate places.

SUMMARY: This Amendment applies to Clause 23.4.5.

Published on 25 July 2005.

Approved for publication in New Zealand on behalf of the Standards Council of New Zealand on 6 July 2005.

AMDT
No. 1
JUL
2005

Page 28 Clause 23

As the heading **23.4.5, Thermal tests**, was missing, *delete* the entire text of Clause 23 below Table 6 (from 23.4.4.1 to 23.4.6.8) and *replace* with the following:

23.4.5 Thermal tests**23.4.5.1 Measurement for maximum surface temperature**

The thermal tests shall be made at the rating of the electrical apparatus at an ambient temperature between 10 °C and 40 °C and with the most unfavourable voltage between 90 % and 110 % of the rated voltage of the electrical apparatus, unless other IEC publications prescribe other tolerances for equivalent industrial electrical apparatus.

The test shall be made under the most adverse conditions, including overloads and recognized abnormal conditions that may be specified in an IEC standard giving specific requirements for the electrical apparatus concerned. Adverse conditions may also arise from the use of electrical apparatus on inverter supplies, frequent starting, etc.

For Zone 20, the adverse conditions shall take into account two simultaneous faults or rare malfunctions; for Zone 21, foreseeable malfunctions; and for Zone 22, normal operation applies.

The measurement of the surface temperatures shall be made with the electrical apparatus mounted in its normal service position.

For electrical apparatus, which can be normally used in different positions, the temperature in each position shall be determined and the highest temperature considered. When the temperature is determined for certain positions, only this shall be specified in the test report and the electrical apparatus shall be marked accordingly.

The measuring devices (thermometers, thermocouple, etc.) and the connecting cables shall be selected and so arranged that they do not significantly affect the thermal behaviour of the electrical apparatus.

The final temperature is considered to have been reached when the rate of rise of temperature does not exceed 2 K/h.

23.4.5.2 Measurement for surface temperature under excess layer

If the requirements of 5.2 apply, then the electrical apparatus to be tested shall be mounted and surrounded by a layer depth L as stated by the manufacturer's specification. The measurement for the maximum surface temperature shall be made according to 23.4.4.1 using a dust having a thermal conductivity of no more than 0,003 kcal/m °C·h.

23.4.5.3 Temperature control

Some apparatus may require the provision of integral temperature sensitive devices, e.g. certain electric motors, fluorescent luminaires, etc. The effect of such devices shall be tested under simulated working conditions. This protection shall be subject to consideration of faults and malfunction according to 23.4.4.1 according to the intended zone of use.

23.4.6 Thermal shock test

Glass parts of luminaires and windows of electrical apparatus shall withstand, without breaking, a thermal shock caused by a jet of water about 1 mm in diameter at a temperature of $(10 \pm 5) ^\circ\text{C}$ sprayed on them when they are at maximum service temperature.

23.4.7 Tests of non-metallic enclosures or of non-metallic parts of apparatus for use in Zone 20 or 21

23.4.7.1 Ambient temperatures during tests

When, according to this standard, tests have to be made as a function of the permissible upper and lower ambient temperature values, these ambient temperatures shall be

- for the upper ambient temperature, the maximum ambient temperature in service increased by at least 10 K but at most 15 K;
- for the lower ambient temperature, the minimum ambient temperature in service reduced by at least 5 K but at most 10 K.

23.4.7.2 Tests of enclosures or parts of enclosures in plastic materials

These tests shall be made on two samples which shall be submitted to the tests of thermal endurance to heat (see 23.4.6.3), thermal endurance to cold (see 23.4.6.4) and mechanical tests (see 23.4.6.6) and finally to the tests specific to the type of protection concerned.

23.4.7.3 Thermal endurance to heat

Thermal endurance to heat is determined by submitting the enclosures or parts of enclosures in plastic materials on which the integrity of the type of protection depends to continuous storage for four weeks in an ambience of $(90 \pm 5) \%$ relative humidity and at a temperature of $(20 \pm 2) \text{ K}$ above the maximum service temperature, but at least $80 ^\circ\text{C}$.

In the case of a maximum service temperature above $75 ^\circ\text{C}$, the period of four weeks specified above shall be replaced by a period of two weeks at $(95 \pm 2) ^\circ\text{C}$ and $(90 \pm 5) \%$ relative humidity followed by a period of two weeks at a temperature of $(20 \pm 2) \text{ K}$ higher than the maximum service temperature.

* This value is incorrect in IEC 61241-0:2004; it should read : 0,03 kcal/m. °C.h