

STANDARD INFORMATION

Standard: UL 1203

Standard ID: Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations [UL 1203:2013 Ed.5+R:30Jan2020]

Previous Standard ID: Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for use in Hazardous (Classified) Locations [UL 1203:2013 Ed.5+R:16Apr2019]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **July 31, 2022**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard.

Overview of Changes: Explosion testing with test factors using precompression explosion testing equipment. Specific details of new/revise requirements are found in table below.

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		<i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined-out below.</i>
21	info	Explosion Tests For explosion-proof equipment specified and marked for use at ambient temperatures lower than minus 25°C (minus 13°F), the explosion tests shall be determined by one of the following methods: a) <u>For explosion-proof equipment specified and marked for use at ambient temperatures lower than minus 25° C (minus 13° F), the explosion tests shall be performed at the minimum ambient specified, ±5°C (±9°F) degrees.</u> When the ambient specified is such that common materials within the Group are not flammable, a test temperature shall be specified that represents the minimum temperature at which the test gasses shown in Table 21.3 remain gasses, or b) For equipment for use in Group C or D classified locations, rated not less than minus 60° C (minus 76°F), not subject to pressure piling, and determined to comply with the flame propagation requirements in 21.3(b), the equipment shall alternatively be subjected to the hydrostatic pressure test using the test factors for low ambient rated equipment found in Table 22.1, based upon room ambient explosion pressure tests, or c) <u>The reference pressure shall be determined at room ambient temperature using the defined test mixture (s), but at increased pressure. The absolute pressure of the test mixture (P) shall be calculated by the following formula, using Ta in °C:</u> $P = 100 \left[\frac{293}{T_{a'} \text{ min} + 273} \right] (kPa)$ Or $P = 14.6959 \left[\frac{293}{T_{a'} \text{ min} + 273} \right] (psi)$



CLAUSE	VERDICT	COMMENT
		<i>New clause added;</i>
		For explosion-proof equipment specified and marked for use at ambient temperatures greater than 60°C (140°F), in addition to the tests of 21.29, flame propagation tests shall be conducted under one of the following conditions:
21.29A		a) At a temperature not less than the specified maximum ambient temperature; or b) At normal ambient temperature using the defined test mixture at increased pressure according to the factors in Table 21.3A; or c) At normal atmospheric pressure and temperature, but with the test gap increased by the factors noted in Table 21.3A.
		These tests are in addition to the explosion tests required to determine compliance with 21.2 and 21.3(a).
		<i>New clause added;</i>
21.29B		All test sample joints are to be based upon the manufacturers maximum specified gap and tested with not less than 115% of the minimum specified joint length. Specially prepared test samples having modified joint lengths, gaps and engagements shall be employed. For Groups A, B, or A and B, test factors per 21.23 and 21.26 are also required to be introduced into the test pressure or test gap in addition to the test factors above by multiplying the test factor of 21.23 or 21.26, as applicable, by the test factor of Table 21.3A.
22A		<i>New section added;</i>
		Dynamic Pressure Test
22A.1		For explosionproof enclosures not subject to pressure piling and intended for routine testing during production, the Dynamic Pressure Test shall be permitted as an alternative to the Hydrostatic Pressure Test. The dynamic tests shall be carried out in such a way that the maximum pressure to which the enclosure is subjected is 1,5 times the reference pressure.
		The test shall be made once except for Group A or Group B, in which case the test shall be made three times with each gas mixture as follows:
22A.2		– Group D: 4,6 ± 0,3 % propane – Group C: 8 ± 0,5 % ethylene – Group B: 31 ± 1 % hydrogen – Group A: 14 ± 1 % acetylene
22A.3		Following the test, there shall be no permanent deformation or damage and joints shall not be permanently enlarged.



CLAUSE	VERDICT	COMMENT
Supplement SB	Info	ALTERNATIVE EXPLOSION TESTS
SB1	Info	Explosion Tests
		For explosion-proof equipment specified and marked for use at ambient temperatures lower than minus 25° C (minus 13° F), the explosion tests shall be performed determined by one of the following methods:
		a) <u>For explosion-proof equipment specified and marked for use at ambient temperatures lower than minus 25° C (minus 13° F), the explosion tests shall be performed at the minimum ambient specified, ±5°C (±9°F) degrees. When the ambient specified is such that common materials within the Group are not flammable, a test temperature shall be specified that represents the minimum temperature at which the test gasses shown in Table SB1.3 remain gasses; or</u>
SB1.29		<u>b) For equipment for use in Group C or D classified locations, rated not less than minus 60° C (minus 76°F), not subject to pressure piling, and determined to comply with the flame propagation requirements in SB1.3 (a), the equipment shall alternatively be subjected to the hydrostatic pressure test using the test factors for low ambient rated equipment found in Table 22.1, based upon room ambient explosion pressure tests; or</u>
		<u>c) The reference pressure shall be determined at normal ambient temperature using the defined test mixture(s), but at increased pressure. The absolute pressure of the test mixture (P) shall be calculated by the following formula, using Ta in °C:</u>
		$P = 100 \left[\frac{293}{T_{a'} \text{ min} + 273} \right] (kPa)$
		Or
		$P = 14.6959 \left[\frac{293}{T_{a'} \text{ min} + 273} \right] (psi)$
		<i>New clause added;</i>
		For explosion-proof equipment specified and marked for use at ambient temperatures greater than 60°C (140°F), flame propagation tests shall be conducted under one of the following conditions:
SB1.29A		1) At a temperature not less than the specified maximum ambient temperature; or 2) At normal ambient temperature using the defined test mixture at increased pressure according to the factors in Table SB1.6; or 3) At normal atmospheric pressure and temperature, but with the test gap increased by the factors noted in Table SB1.6.
		These tests are in addition to the explosion tests required to determine compliance with SB1.2 and SB1.3(a).



CLAUSE	VERDICT	COMMENT
SB1.29B		<p>All test sample are to be based upon the manufacturers maximum specified gap and tested with not less than 115% of the minimum specified joint length. Specially prepared test samples having modified joint lengths, gaps and engagements shall be employed.</p> <p>For Groups A, B, or A and B, test factors per SB1.23 and SB1.26 are also required to be introduced into the test pressure or test gap in addition to the test factors above by multiplying the test factor of 21.23 or 21.26, as applicable, by the test factor of Table SB1.6.</p>
