**COLLECTION OF IECEx / ExTAG DECISIONS**

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| Standard:  IEC 60079-1:2014  IEC 60079-1:2007  IEC 60079-0:2017  IEC 60079-0:2011  IEC 60079-0:2007 | **Clauses:**  15.2.2  15.1.2  5.1.2  5.1.2  5.1.2 | **Draft Decision Sheet:**  ExTAG/670/CD |
| **Subject:**  Influence of a separate external source of cooling on reference pressure testing  **Status of document:**  Approved | **Key words:**   * External source of cooling * Reference pressure testing * Process temperature * Ambient temperature | Date: May 2022 **Originator of proposal:**  UL LLC  **TC/SC involved:**  IEC/TC 31 MT 60079-1, WG 22 |

**BACKGROUND:**

Consider flameproof “Ex d” equipment that is intended to be physically connected to a separate external source of cooling, such as a process temperature of -197 °C.

**QUESTION:**

Should reference pressure testing at low ambient, as required by IEC 60079-1, be solely determined based on the minimum ambient of the rated Ta range, or should the effect of the process temperature on the equipment be considered when determining reference pressure?

**ANSWER:**

IEC 60079-0 requires consideration of external sources of heat and cooling. Since IEC 60079-1 does not take exception to this requirement from IEC 60079-0, and since low temperatures can affect the reference pressure, therefore the effect of the process temperature on the equipment is to be considered when determining reference pressure in accordance with IEC 60079-1. This position is further supported by the guidance given in Table 7 of IEC 60079-1:2014 that reads, “Consideration should be given to applications in which the temperature inside the flameproof enclosure may be substantially lower than the rated ambient temperature.”

NOTE: When this minimum ambient temperature is such that the test gases are not flammable, a test temperature is used that represents the minimum temperature at which the test gases remain gaseous.