**INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC) SYSTEM FOR CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT FOR USE IN EXPLOSIVE ATMOSPHERES (IECEx SYSTEM)**

**Title: Compilation of Comments and observations on** **ExTAG/670/CD – Draft ExTAG Decision Sheet – Influence of a separate external source of cooling on reference pressure testing**

**Circulated to: ExTAG – IECEx Testing and Assessment Group**

**INTRODUCTION**

This document contains the Compilation of Comments and Observations from the originators, UL LLC, US on *EXTAG/670/CD Draft ExTAG Decision Sheet – Influence of a separate external source of cooling on reference pressure testing*

As a result of comments received, and considered, Decision Sheet ExTAG DS 2022/002 has now been published

***Please inform the Secretariat immediately of any omissions or errors at***

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| **ExCB/**  **ExTL** | **Clause/ Sub-clause** | **Paragraph Figure/**  **Table** | **Type of**  **comment**  **General/**  **technical/**  **editorial** | **COMMENTS** | **Proposed change** | **Observation**  **(to be completed by the originator)** |
| --- | --- | --- | --- | --- | --- | --- |
| **CMD**  **IN**  In consultation with Intertek India Private Limited, Karandikar Laboratories Pvt. Ltd., and KL Certification Services |  |  |  | **we have 'no comments' on draft ExTAG/670/CD** |  | **Noted** |
| **CNEX-Global BV** | **-** | **-** | **g** | **we agree with the draft DS**  **Anticipated internal and external temperature cooling effects should be taken into account for reference pressure tests** | **None** | **Noted** |
| **CQM**  **CN** | **60079-0:2017 cl3.1 Note 1 to entry**  **60079-0:2017 cl5.1.2 Note 3** |  | **Technical** | **According to the Note 1 of cl 3.1 IEC 60079-0:2017, the ambient temperature does not refer to the temperature of any process media, unless the equipment or component is totally immersed in the process media.**  **The situation described in the background normally has a thermal insulation material out of the process vessel or pipeline, and if the equipment is only connected to the process, the ambient temperature cannot be easily estimated from the process temperature. The actual ambient temperature shall be verified basing on the installation condition.** | **“ANSWER: The test required by IEC 60079-1 shall be based on the minimum ambient of the rated Ta range. During the installation, the actual ambient temperature onsite shall be observed and evaluated to fulfill the rated Ta range specified in the certificate.”** | **Not Accepted. MT 60079-1 is drafting revised text as part of the next edition effort, and this revision is supported. However, this revision is a clarification to the existing text of “minimum ambient”, not a technical change.** |
| **DEKRA BVS DE** |  |  |  | **We are in favour with the answer given in the proposed DS.** |  | **Noted** |
| **DEKRA NL** |  |  |  | **We think the standard is clear and see no added value of issuing this sheet. Therefore, we prefer to withdraw this sheet to reduce the amount of meaningless documents.** |  | **Accepted in Principle. While it is agreed that we consider the text of the standard as being clear, there is at least one other ExCB that may be applying the text differently. Therefore, the DS is needed for consistency across ExCBs** |
| **FME**  **GB** |  |  | **te** | **As currently written, the reference pressure section of IEC 60079-1 only mentions testing to allow for the minimum ambient temperature when possibly this should be service temperature. This would involve a technical change to the standard which would need to be addressed by the maintenance team for 60079-1.** | **MT 60079-1 to address.** | **Accepted in Principle. MT 60079-1 is drafting revised text as part of the next edition effort, and this revision is supported. However, this revision is a clarification to the existing text of “minimum ambient”, not a technical change to another term like “service temperature”.** |
| **FMG**  **US** |  |  | **ge** | **In general, support that the lower ambient be addressed, but this is complicated by the situation where most of our test “gases” are no longer a “gas” at these temperatures so the tests described by the standard would not be possible. However, the hazardous area may not even exist at these temperatures.** | **MT60079-1 to discuss** | **Accepted in Principle. MT 60079-1 is drafting revised text as part of the next edition effort, including regarding the issue of low temperatures at which our test gases are no longer a gas, and these revisions are supported. However, the issue of how to address low temperatures at which our test gases are no longer a gas is outside the scope of the DS. Once this DS is published, a subsequent revision or separate DS could be pursued.** |
| **FTZU**  **CZ** |  |  | **G** | **We agree with this draft ExTAG Decision Sheet.** |  | **Noted** |
| **IBExU** |  |  |  | **There are no comments from our side on these two decision sheets.** |  | **Noted** |
| **IMQ**  **IT** | **Answer** |  |  | **IEC 60079-0 electrical and general rules, as well as ISO 80079-36 in definition 3.1 service temperature, requires consideration an if any measurement of external sources of heat and cooling effect on service temperature of Equipment.**  **Equipment may reach different service temperatures in different parts.**  **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** | **Agree on the answer.** | **Noted** |
| **KOSHA**  **KR** |  |  | **G** | **We agree with this draft. Since it is in physical contact with the source of cooling that has a process temperature lower than the minimum ambient temperature, We consider that the reference pressure should be determined considering the process temperature lower than the minimum ambient temperature.** |  | **Noted** |
| **KR Hellas**  **GR** | **5.1.2**  **15.2.2** |  | **Technical** | **Noted**  **We do not have any comments for those Draft ExTAG DS.** |  | **Noted** |
| **LCIE**  **FR** |  |  | General | We agree with this Draft ExTAG Decision Sheet. |  | **Noted** |
| **NANIO CCVE (RU)** |  |  | **General** | **We support DS ExTAG/670/CD without any comments.** |  | **Noted** |
| **NCC**  **BR** | **15.2.2**  **(IEC 60079-1:2014)**  **15.1.2**  **(IEC 60079-1:2007)**  **5.1.2**  **(IEC 60079-0:2017)**  **5.1.2**  **(IEC 60079-0:2011)**  **5.1.2**  **(IEC 60079-0:2007)** | **-** | **-** | **We agree.** | **-** | **Noted-** |
| **NEPSI**  **CN** |  |  | **G** | **We support the draft decision sheet ExTAG/670/CD.** |  | **Noted** |
| **PTB**  **DE** | **IEC 60079-1:2014 15.2.2**  **IEC 60079-1:2007 15.1.2**  **IEC 60079-0:2017 IEC 60079-0:2011 IEC 60079-0:2007 5.1.2** |  | **Technical** | **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 to question:**  **From a technical point of view, the PTB would agree with this DS. Nevertheless, we don’t see the possibility to perform the test at such extreme temperatures. Furthermore, we are not sure if the ideal gas equation can be applied even for those extreme temperatures to calculate a pre-compression. For acetylene this will never work, due of the autoignition point of acetylene.**  **Remember the discussions concerning the overpressure tests and the required low ambient temperature. It was decided to omit the requirement of testing at the low temperature because the tests would become too complex (using of alcohol or special oil).**  **The same thoughts should be taken in account here. If it would be required to determine the reference pressure at those extreme temperatures nearly nobody will be able to carry out the test.**  **Also, the tests for non-metallic materials or others shall be taken for such extreme temperatures into consideration according to the standard IEC 60079-0. This can be a big challenge for many laboratories to achieve.** | **Accepted in Principle. MT 60079-1 is drafting revised text as part of the next edition effort, including regarding the issue of low temperatures at which our test gases are no longer a gas, and these revisions are supported. However, the issue of how to address low temperatures at which our test gases are no longer a gas is outside the scope of the DS. Once this DS is published, a subsequent revision or separate DS could be pursued. A NOTE has been added to provide guidance to the reader.** |
|  |  |  |  |  |  |  |
| **QPS CA** |  |  |  | **QPS supports both proposed DS’s as is and has no further comments.** |  | **Noted** |
| **RISE SE** |  |  |  | **We agree with the draft Decision Sheet** |  | **Noted** |
| **SGS**  **BASEEFA**  **GB** |  |  |  | **SGS Baseefa accepts the document as written** |  | **Noted** |
| **Simtars**  **AU** |  |  |  | **Simtars has no comments.** |  | **Noted** |
| **SIQ SI** |  |  |  | **We agree with prepared proposal.** |  | **Noted** |
| **TC 31**  **WG 22** |  |  |  | In general, it was considered that the current text of the standard was adequate and does not need further interpretation.  However, if a Decision Sheet is indeed issued, it should be noted based on the low temperature example given, most of our test "gases" at that temperature are liquids and would not form an explosive atmosphere, so there would be no reference pressure at that low temperature, and temperatures above that could result in higher reference pressures. This would need to be part of the “considerations”. | Do not issue the DS | **Not Accepted. MT 60079-1 is drafting revised text as part of the next edition effort, including regarding the issue of low temperatures at which our test gases are no longer a gas, and these revisions are supported. However, the issue of how to address low temperatures at which our test gases are no longer a gas is outside the scope of the DS. Once this DS is published, a subsequent revision or separate DS could be pursued.** |
| **MT 60079-1** | **ExTAG/670/CD** |  |  | It is the position of MT 60079-1 that the current text of the standard is clear and does not need an interpretation.  However, if there are differing opinions on this issue amongst ExCBs, and since low temperatures can significantly affect the reference pressure, the effect of the process temperature on the equipment is to be considered when determining reference pressure. | Proposed Decision Sheet can be issued as written. | **Noted** |
| **TIIS**  **JP** |  |  | **ge** | We agree with the idea in the draft DS. However, Answer is different from the current statement of the second paragraph of 15.2.2.1 in IEC 60079-1: 2014.  We think Interpretation sheet is more appropriate approach to treat this topic. | Submit this topic to TC31 (MT) instead of DS. | **Accepted in Principle. MT 60079-1 is drafting revised text as part of the next edition effort, and this revision is supported. However, this revision is a clarification to the existing text of “minimum ambient”, not a technical change.** |
| **TUR TÜV Rheinland**  **DE** |  |  |  | **Fully support** | **None** | **Noted** |
| **ULD DK** |  |  | **General** | **We support this draft ExTAG DS without comments.** |  | **Noted** |
| **UL do BR**  **BR** |  |  | **General** | **We support this draft ExTAG DS without comments** |  | **Noted** |