IECEx OD 010-1

Edition 3.0   2022-07

IECEx
OPERATIONAL DOCUMENT

IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres (IECEx System)

Guidance for the development, compilation, issuing and receipt of ExTRs – Part 1: Development and posting ofblank IECEx Test Report (ExTR) Documents

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**Guidance for the development, compilation, issuing and receipt of ExTRs –
Part 1: Development and posting ofblank IECEx Test Report (ExTR) Documents**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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IECEx Operational Document OD 010-1 –

Guidance for the development, compilation, issuing and receipt of ExTRs – Part 1: Development and posting ofblank IECEx Test Report (ExTR) Documents

FOREWORD

This Operational Document IECEx OD 010-1 has been prepared to detail a common procedure for the development and posting of blank ExTRs by IECEx Testing Laboratories (ExTLs) and IECEx Certification Bodies (ExCBs) operating within the IECEx System, under the IECEx Certified Equipment Scheme.

The maintenance of IECEx OD 010-1 is the responsibility of the ExTAG Working Group 01 (ExTAG WG01) for the preparation and maintenance of IECEx assessment and test report forms. This Working Group was convened to create, revise and update the Ex Test Reports (ExTRs) to be used within the IECEx System.

This IECEx OD 010-1 is complemented by IECEx OD 010-2, *Operational Document - Guidance for the development, compilation, issuing and receipt of ExTRs - Part 2: Procedures and guidance*.

Document history

Date	Summary
2003-06	Original issue as IECEx OD 010
2012-08	IECEx OD 010 revised and replaced by OD 010-1 and OD 010-2
2014-09	Edition 2.0 published to include multiple field additions, deletions, revisions of the ExTR Cover – refer to Document History table of Edition 2.0 for details
2022-07	Edition 3.0 to reflect current practices, including reference to ExTAG WG01, and the IECEx website for blank ExTRs (previously included as Annexes to this OD)

Guidance for the development, compilation, issuing and receipt of ExTRs – Part 1: Development and posting of blank IECEx Test Report (ExTR) Documents

1 Introduction

The purpose of this IECEx Operational Document (OD) establishes a common approach amongst all IECEx Testing Laboratories (ExTLs) and IECEx Certification Bodies (ExCBs) operating within the IECEx System under the Certified Equipment Scheme, regarding the following:

- ExTL/ExCB submission of requests for new or revised blank ExTR documents;
- ExTAG WG01 Convenor assignment of requests for new or revised blank ExTR documents;
- ExTL/ExCB development of new or revised blank ExTR documents;
- ExTAG WG01 review, or development, of new or revised blank ExTR documents; and
- IECEx Secretariat posting of new or revised blank ExTR documents.

The following terms are defined:

Blank ExTR: an ExTR document that is posted on the IECEx website at www.iecex.com/members-area/documents/extr-blanks for ExTL/ExCB use when evaluating and testing IEC Ex equipment and components.

ExTR document: any of the IECEx form documents that include the IECEx Test Report Cover (ExTR Cover), IECEx Test Report Addendum (ExTR Addendum), IECEx Test Report of National Differences (ExTR of National Differences) and IECEx Test Report of Partial Testing (ExTR of Partial Testing) documents, along with the individual IECEx Test Reports (Ex Test Reports) for each of the IEC Ex standards.

ExTR package: the overall record of the evaluation and testing performed on a given item or product. An ExTR package is always comprised of an ExTR Cover, and often also includes one or more associated ExTR documents (refer to Clause 2.1 of IECEx OD 009 for details).

New blank ExTR: the need for development and posting of the first blank ExTR document for a new IEC Ex standard, or the first blank ExTR document for a new edition of an existing IEC Ex standard.

Revised blank ExTR: the subsequent development and posting of a blank ExTR document for a given edition of an IEC Ex standard after an existing blank ExTR document has already been developed and posted for that same given edition. The need for a "revised" blank ExTR document can be due to a change or correction needed to improve accuracy, clarity or usage.

Regarding the compilation, issuance and receipt of ExTR packages by ExTLs/ExCBs, see IECEx OD 010-2, *Operational Document - Guidance for the development, compilation, issuing and receipt of ExTRs - Part 2: Procedures and guidance*.

Under the IECEx Certified Equipment Scheme, this Operational Document IECEx OD 010-1 together with IECEx OD 010-2 complement the IECEx Operational Document , IECEx OD 009, *Operational Document - Procedures for the Issuing of IECEx Certificates of Conformity, IECEx Test Reports and IECEx Quality Assessment Reports*. Terminology has been aligned to comply with IECEx 02, *IEC System for Certification to Standards relating to Equipment for use in Explosive Atmospheres (IECEx System), IECEx Certified Equipment Scheme covering equipment for use in explosive atmospheres – Rules of Procedure*.

2 Requests for new or revised blank ExTR documents

2.1 Initial request

Requests for a new or revised blank ExTR document shall be addressed to the Convenor of ExTAG WG01 in writing, with the IECEx Secretariat copied.

2.2 Request confirmation

Upon receipt of an initial request, the ExTAG WG01 Convenor confirms one of the following regarding the requested new or revised blank ExTR as being:

- already developed and available on the IECEx System website;

- in process of being developed; or

- not developed yet and not in process of being developed.

If a requested new or revised blank ExTR document is already developed and available, this information is conveyed to the requestor.

If a requested new or revised blank ExTR document is in process of being developed, this information is conveyed to the requesting ExTL/ExCB with an indication of when the new or revised blank ExTR document will be made available on the IECEx System website.

If a requested new or revised blank ExTR document does not already exist, nor is in process of being developed, the development of a new or revised blank ExTR document is assigned according to Clause 3 following.

3 Assignment of requests for new or revised blank ExTR documents

The ExTAG WG01 Convenor formally assigns a development request for a new or revised blank ExTR document to an ExTL/ExCB as follows:

a) The requesting ExTL/ExCB will be asked if they are prepared to develop the new blank ExTR document within a determined timeframe.

b) If the requesting ExTL/ExCB is not prepared to develop the new blank or revised ExTR document, the ExTAG WG01 Convenor immediately seek a member body willing to develop the new blank ExTR document.

c) If the consultation by the ExTAG WG01 Convenor with other member bodies does not lead to an offer the new blank ExTR document will be developed by ExTAG WG01.

4 Development of new or revised blank ExTR documents

4.1 General rules and formatting requirements

The following rules shall be applied when developing new or revised blank ExTR documents:

File format	MS Word format
Font	Arial font, Normal font style, 10 size, Automatic font color, No effects *Exception*: Bold font style is to be used for ExTR document main headings and sub-headings.
Paper size	A4 (210 x 297 mm)
Margins	1.3 cm (0.53 in) Top; 2.2 cm (0.86 in) Bottom; Left 2.2 cm (0.88 in); Right 2.2 cm (0.88 in), 0.0 cm (0.0 in) Gutter, 1.3 cm (0.5 in) Header, 1.3 cm (0.5 in) Footer

Table properties	Center alignment, No text wrapping, Rows not allowed to break across pages, Vertical cell alignment, Single solid 1-1/2 pt border lines with 3/4 pt. inner lines
Cell properties	Left for Horizontal alignment, Center for Vertical alignment
Language	English (US)
Header text	"ExTR Reference No." is the only form header text, and shall have a right alignment. This header text is to appear on all pages of the involved blank ExTR document, except for the first page which already has the "ExTR Reference No." indicated.
Footer text	"TRF No." and "Page X of Y" are the only form footer text, with the "TRF No." having a left alignment and "Page X of Y" having a center alignment. The "Page X of Y" footer text is to appear on all pages of the involved blank ExTR document. The "TRF No." footer text is to appear on all pages of the involved blank ExTR document, except for the first page which already has the "TRF No." indicated.
TRF Number	The naming convention for Test Report Form (TRF) numbers for Ex Test Reports is as follows: – "ExTR"; followed by – IEC standard number (without the "IEC" prefix); followed by – 'Underscore' character; followed by – Arabic number reflecting the edition of the IEC standard; followed by – Uppercase letter indicating the version of the ExTR document; followed by the letters "DS" indicating that Decision Sheet hyperlinks have been imbedded in the ExTR document. If Decision Sheet hyperlinks have not been imbedded, the letters "DS" will not appear. The example below would be the TRF number for a new blank ExTR document for IEC 60079-6, 3rd edition, with embedded Decision Sheet hyperlinks. ExTR60079-6_3A_DS Subsequent revised blank ExTR documents of this new blank ExTR document for the 3rd edition of IEC 60079-6 would replace the "A" with sequentially increasing letters in the alphabet. NOTE TO ENTRY The naming convention of the TRF numbers for the ExTR Cover, ExTR Addendum, ExTR of National Differences and ExTR of Partial Testing is similar to the above criteria, and is reflected in the respective blank forms.

NOTE   Regarding the addition of **IECEx Decision Sheet hyperlinks**, ExTAG WG01 is responsible for creating new ExTRs and for the maintenance of ExTR blanks including the insertion of ExTAG DS hyperlinks. The Secretariat will notify the ExTAG WG01 Convener when new or revised ExTAG DS are published.

4.2   Blank ExTR document structure

4.2.1   General

A blank ExTR document must be easy to compile (fill in) and should include no macros, except for the ExTR Reference Number field, the Page X of Y field, and the Date of issue/review fields. Protected fields should NOT be included.

An ExTR package is comprises an ExTR Cover and one or more associated ExTR documents (which may include Ex Test Reports, ExTR Addendums, ExTRs of National Differences and ExTRs of Partial Testing).

All ExTR package documents are compiled and reviewed by the ExTL. The Issuing ExCB indicates final approval of the overall ExTR package on the ExTR Cover.

4.2.2   Blank ExTR Cover

An ExTR Cover is the sole top-level document to associate together all other parts of an ExTR package.

An ExTR package is comprised of an ExTR Cover and often also includes one or more associated ExTR documents (which may include Ex Test Reports, ExTR Addendums, ExTRs of National Differences and ExTRs of Partial Testing). All ExTR package documents are compiled and reviewed by the ExTL. The Issuing ExCB indicates final approval of the overall ExTR package on the ExTR Cover.

The purpose of the ExTR Cover for an ExTR package is to contain key information that is common across all other parts of the ExTR package. This eliminates the need to repeat such common information across multiple ExTR documents and highlights this key information in a standardized fashion in one location for ready access.

NOTE   As part of the blank ExTR Cover, many of the fields include embedded Comments that provide explanatory details regarding the content that is intended to be entered in the field.

The blank ExTR Cover can be found on the IECEx website at
www.iecex.com/members-area/documents/extr-blanks

4.2.3   Blank Ex Test Report

4.2.3.1   General

Each Ex Test Report is to be part of an ExTR package that may also include ExTR Addendums, ExTRs of National Differences, ExTRs of Partial Testing and other Ex Test Report documents, along with a single ExTR Cover.

The ExTR Cover is the sole top-level document to associate together all other parts of an ExTR package. All ExTR package documents are compiled and reviewed by the ExTL. The Issuing ExCB indicates final approval of the overall ExTR package on the ExTR Cover.

The purpose of an Ex Test Report is to provide a standardized clause-by-clause documentation of the evaluation and testing that initially verified compliance of an item or product with an IEC Ex standard. This standardized format consists of one or more checklist tables and additional narrative content as applicable.

NOTE   As part of the blank Ex Test Report, some of the fields may include embedded Comments that provide explanatory details regarding the content that is intended to be entered in the field.

The blank Ex Test Report can be found on the IECEx website at
www.iecex.com/members-area/documents/extr-blanks

4.2.3.2   Checklist table(s)

The checklist table portion of a blank Ex Test Report is formatted into four columns of a single table beneath an overall heading indicating the involved IEC Ex standard. The four column headings that comprise the "test case" section of the checklist table are as follows: 1) "Clause", 2) "Requirement – Test"', 3) "Result – Remark" and 4) "Verdict".

IEC _____-__			
Clause	Requirement – Test	Result – Remark	Verdict

As the table extends from one page to the next, the table headings should repeat at the beginning of each new page. If this is not practical for some reason, the table may be split into several separate tables provided that the headers are repeated on each page.

To best utilize the available space on each page in a balanced fashion, the width of each column in the "test case" section should be approximately as follows: 2.54 cm (1.00 in), 5.08 cm (2.00 in), 7.62 cm (3.00 in) and 2.54 cm (1.00 in).

➢ **Clause**

The "Clause" column is for a reference to each IEC Ex standard numbered heading. Within a given IEC Ex standard, there are different styles of numbered headings based on how many digits are in the heading number as follows:

- Heading Style 1: One digit in the heading number. For example, "**5 Temperatures**"

- Heading Style 2: Two digits in the heading number. For example, "**5.3 Maximum surface temperatures**"

- Heading Style 3: Three digits in the heading number. For example, "**5.3.2 Limitation of maximum surface temperature**"

- Heading Style 4: Four digits in the heading number. For example, "**5.3.2.3 Group III electrical equipment**"

- Heading Style 5: Five digits in the heading number. For example, "**26.4.1.2.1 Group I electrical equipment**"

When developing the checklist table, all numbered clauses involving Heading Style 1 are to be followed by a 'separating row' involving no text or borders.

Similarly, all numbered clauses involving Heading Style 2 are to be followed by a 'separating row' unless the Heading Style 2 clause is followed by a related Heading Style 3 clause (that may be further followed by related Heading Style 4 and 5 clauses). For such situations, no 'separating row' is to be inserted again until immediately before the next Heading Style 2 clause (or Heading Style 1 clause).

NOTE   The only exception to the above is for Normative Annexes. For these Annexes, 'separating rows' are only used immediately before the row stating the Annex heading. 'Separating rows' are not used between any Heading Style clauses within a given Annex.

➢ **Requirement – Test**

The "Requirement – Test" column is for the text of the numbered heading. Any summary wording that may be additionally used in the "Requirement – Test" column needs to be simple and prompts for a clear 'Pass' or 'N/A' verdict. The full text of a paragraph from the IEC Ex standard is not to be repeated.

As noted above, there are different 'types' of Numbered Headings (or Clauses) in each Ex Test Report, with differing actions being required of the ExTL when completing the ExTR package based on the 'type' of Numbered Heading involved.

The following are examples of the different 'types' of Numbered Headings that may be presented in an Ex Test Report as outlined below:

a) **Numbered Heading – No text associated with the heading:** No "Result – Remark" or "Verdict" is applicable since no requirements are associated with the numbered heading in the IEC Ex standard.

IEC _____-__			
Clause	Requirement – Test	Result – Remark	Verdict
5	Flameproof joints		

b) **Numbered Heading – Normative text associated with the heading:** Both "Result – Remark" and "Verdict" are applicable since Normative requirements are associated with the numbered heading in the IEC Ex standard.

IEC _____-__			
Clause	Requirement – Test	Result – Remark	Verdict
9	Light-transmitting parts		

c) **Numbered Heading – Informative text associated with the heading:** No "Result – Remark" or "Verdict" is applicable since associated text is only informative and not normative.

IEC _____-__			
Clause	Requirement – Test	Result – Remark	Verdict
Annex F (Informative)	Mechanical properties for screws and nuts		

Some numbered headings involving Normative requirements make it mandatory that specific details be entered under the "Result – Remark" heading in support of the "Verdict". A dotted leader as shown in the example below may be used to identify such instances.

IEC _____-__			
Clause	Requirement – Test	Result – Remark	Verdict
5.2.1	Width of joints (L)..............		

➢ **Result – Remark**

The "Result – Remark" column is for explanatory details resulting from the related "Requirement – Test" column, and supportive of the ultimate "Verdict" column. Examples of such details include a measured value, a test result or an explanatory remark.

It is not mandatory to always include "Result – Remark" text when a "Verdict" is indicated. However, to facilitate acceptance by Receiving ExCBs such that re-testing will not be required, Ex Test Reports shall provide clear, concise and sufficient information that supports the Issuing ExCBs evaluation and testing.

➢ **Verdict**

The "Verdict" column is for stating the judgment resulting from analysis based on the "Requirements – Test" column, and reflective of the explanatory details under the "Result – Remark" column. Allowed verdict choices are: 'Pass' or 'N/A'. The verdict choice 'N/A' indicates that the requirement was determined to be 'Not applicable'.

4.2.3.3 Measurement section

In addition to the checklist portion of an Ex Test Report, there is often a need to detail measured values and test results that do not easily fit in the fields under the "Result – Remark" column.

To address such situations, an area for additional narrative remarks and tables of measured values, specific test conditions and test results is provided after the Checklist section of each blank Ex Test Report.

4.2.4 Blank ExTR of National Differences

Each ExTR of National Differences is to be part of an ExTR package that may include Ex Test Reports, ExTR Addendums, ExTRs of Partial Testing, and other ExTRs of National Differences documents, along with a single ExTR Cover.

The ExTR Cover is the sole top-level document to associate together all other parts of an ExTR package. All ExTR package documents are compiled and reviewed by the ExTL. The Issuing ExCB indicates final approval of the overall ExTR package on the ExTR Cover.

The purpose of an ExTR of National Differences is to document compliance with National differences to an IEC Ex standard for a given country or region. Such ExTR documents supplement an Ex Test Report or ExTR Addendum, with a separate such ExTR of National Differences document issued for each intended country or region. All National Differences of the intended country or region are to be tabulated and remarked upon as part of this document, even those that are not applicable.

NOTE   As part of the blank ExTR of National Differences, some of the above fields may include embedded Comments that provide explanatory details regarding the content that is intended to be entered in the field.

The structure of the Checklist table(s) and Measurement section portions of a blank ExTR of National Differences are similar to the Checklist table(s) and Measurement section structure of a blank Ex Test Report described above.

Additional information can be found in the published IECEx Bulletin, *Section 3 – National Differences.*

The blank ExTR of National Differences can be found on the IECEx website at
www.iecex.com/members-area/documents/extr-blanks

4.2.5   Blank ExTR Addendum

Each ExTR Addendum is to be part of an ExTR package that may include Ex Test Reports, ExTRs of National Differences, ExTRs of Partial Testing and other ExTR Addendum documents, along with a single ExTR Cover.

The ExTR Cover is the sole top-level document to associate together all other parts of an ExTR package. All ExTR package documents are compiled and reviewed by the ExTL. The Issuing ExCB indicates final approval of the overall ExTR package on the ExTR Cover.

The purpose of an ExTR Addendum is to document compliance of a change in construction to a product already covered by an existing ExTR package. Such ExTR documents supplement a previously issued ExTR package. Only those clauses applicable to the supplemental issue being addressed are to be tabulated and remarked upon as part of this document. An ExTR of National Differences may also supplement this document.

NOTE   As part of the blank ExTR Addendum, some of the above fields may include embedded Comments that provide explanatory details regarding the content that is intended to be entered in the field.

The structure of the Checklist table(s) and Measurement section portions of a blank ExTR Addendum are similar to the Checklist table(s) and Measurement section structure of a blank Ex Test Report described above.

The blank ExTR Addendum can be found on the IECEx website at
www.iecex.com/members-area/documents/extr-blanks

4.2.6   Blank ExTR of Partial Testing

Each ExTR of Partial Testing is to be part of an ExTR package that may include Ex Test Reports, ExTR Addendums, ExTRs of National Differences and other ExTR of Partial Testing documents, along with a single ExTR Cover.

The ExTR Cover is the sole top-level document to associate together all other parts of an ExTR package. All ExTR package documents are compiled and reviewed by the ExTL. The Issuing ExCB indicates final approval of the overall ExTR package on the ExTR Cover.

The purpose of an ExTR of Partial Testing is to document compliance of an item or product with only select requirements from an IEC Ex standard. Such ExTR documents provide a clause-by-clause documentation of the evaluation and testing that verified compliance with the select requirements.

NOTE   As part of the blank ExTR of Partial Testing, some of the above fields may include embedded Comments that provide explanatory details regarding the content that is intended to be entered in the field.

The structure of the Checklist table(s) and Measurement section portions of a blank ExTR of Partial Testing are similar to the Checklist table(s) and Measurement section structure of a blank Ex Test Report described above.

The blank ExTR of Partial Testing can be found on the IECEx website at
www.iecex.com/members-area/documents/extr-blanks

4.2.7   Special instructions for ExTR developers

Developers of ExTR documents shall use the agreed upon ExTR document format and templates detailed in this Operational Document. The only "free-form" section open for developer-specific variance is the Measurement section of the blank Ex Test Report.

The Measurement section of an Ex Test Report may be tailored as deemed necessary by the ExTR developer to address the specifics of the involved IEC Ex standard and the products commonly covered by the involved standard.

Issues such as selection of test items, particulars or layout of tables can be addressed as needed in the Measurement section. Tables of larger size in the Measurement section can be displayed and printed in "landscape" orientation.

5   Review of new or revised blank ExTR documents

When the assigned ExTR developer completes development of the new or revised ExTR document, the resulting ExTR document is forwarded to the ExTAG WG01 Convenor in Word format via email.

Upon receipt of the new or revised ExTR document from the assigned ExTR developer, the ExTAG WG01 Convenor will verify the format and content is in accordance with this Operational Document and then circulate to ExTAG WG01 members for comment.

NOTE   With the agreement of ExTAG WG01 and the Secretariat, other formats can be used to develop blank ExTR documents to accommodate special needs. For example, most blank Ex Test Reports for IEC 60079-11 have a version that reflects the above checklist-based structure, while also having a version that reflects a narrative-based structure. Also, there are blank Ex Test Reports for some IEC Ex standards that combine the specific protection method checklist together with the general requirements checklist.

Any comments received from ExTAG WG01 members shall be addressed by the ExTAG WG01 Convenor working together with the ExTAG WG01 and the assigned ExTR developer.

6   Posting of new or revised blank ExTR documents

New or revised blank ExTR documents that have been reviewed by ExTAG WG01 are then forwarded by the ExTAG WG01 Convenor to the IECEx Secretariat for posting on the IECEx website.

Once posted, the IECEx Secretariat informs all member ExCBs/ExTLs as appropriate.

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