

Guide to **type examination services**

This document provides an overview of the Type Examination Services offered by SGS Baseefa Ltd in relation to both the ATEX Directive 2014/34/EU and its UK equivalent UKSI 2016:1107 (as amended), along with the IECEx International Product Certification Scheme. Note that, although not formally adopted in UK Law, the term UKEX is considered to be the UK equivalent of ATEX, and is used in this document, where appropriate.

Type Examination is the process of comparing the design specification of a product against the requirements of a standard specification, informed by physical examination of a sample and the performance of tests as may be necessary according to the particular standard.

A **Type Examination Certificate** makes a statement (without time limitation) that is true on the day of issue and refers to compliance of the design as specified by the certificate.

A **Certification Report** provides the details as to how compliance has been confirmed.

An **EU-Type Examination Certificate** is a specific form of Type Examination Certificate, given legal status within the framework of one or more EU Directives. Such a certificate does not necessarily provide evidence of compliance with all statutory requirements, but it does signify conformity with particular standards or requirements (the Essential Health and Safety Requirements of the ATEX Directive), and may be used as evidence towards the meeting of relevant legal requirements.

A **UK-Type Examination Certificate** fulfills the same purpose for the UK Regulations.

An **IECEx Test Report (ExTR)** fulfils the purpose of both the Type Examination Certificate and the Certification Report within the IECEx Scheme.

An **IECEx Certificate of Conformity (IECEx CoC)** relates to more than just the Type Examination phase as its issue status is also closely related to the production phase of the product through the Production Quality Assurance activity (identical to the ATEX module). Under specific circumstances, the Product

Verification module may be applied as an alternative, for example where only very few of a product will ever be made. (For more information see BAS-PS-006 and BAS-PS-005).

The **prime activity of type examination** is the collation of evidence confirming compliance with the specified standard(s). The evidence will often include the results of tests performed in our own laboratory or in another laboratory, which can, probably through accreditation, demonstrate equivalent traceability, along with data sheets for material and components. Drawings, often prepared specifically for the certification exercise, are a primary source of information.

The output is a report, confirming the evidence of compliance, and a certificate, defining what has been certified. The certificate will normally be a "public domain" document, but the report is a confidential document between our customer and us. There will, however, be the possibility that we are required to reveal the contents of the report, and the drawings, to appropriate legal bodies (such as the European Commission in connection with EU Directives) and to our accreditors.

A new edition of an existing Type Examination Certificate is issued, where appropriate, to accommodate subsequent variations in the specified design.

For IECEx, a supplementary ExTR will normally be issued (or in some cases an additional ExTR) and the relevant IECEx CoC will be amended and formally issued on the IECEx web site at the next issue level.

TYPE EXAMINATION AND THE ATEX DIRECTIVE

The process for EU-Type/UK-Type Examination is described in Annex III of the ATEX Directive and forms the procedural basis for all type examination work that we carry out. Type Examination, in combination with Product Verification form the basis for Unit Verification described in Annex IX of the ATEX Directive. For further information on Unit Verification, please see the Product Verification Guide (BAS-PS-005).

The ATEX/UKEX EU-Type/UK-Type Examination Certificate is issued against the Essential Health and Safety Requirements (EHSRs) given in Annex II of the directive. However, compliance with those EHSRs is normally assured by compliance with one or more standards that have been published by the European standards making bodies, CEN and CENELEC. Once such a standard has been listed in the *Official Journal of the European Union* (OJ) as a "Harmonised Standard", compliance with the standard may be presumed to give compliance with the EHSRs. The standards listing is also published by the UK Government as a list of Designated Standards.

As an alternative to the use of Harmonised Standards, the EU-Type/ UK-Type Examination Certificate may be issued directly against the EHSRs, but full justification must be given in the report. In practice, it is normal to follow the requirements of the harmonised standards so far as they are applicable, and to use a direct interpretation of the EHSRs only for those aspects of the design of the equipment where there are no relevant standards.

Current information on the harmonisation and designation status of particular standards and the relationship between the Cenelec Standard and the relevant IEC Standard is available from www.sgs.co.uk/sgsbasedef. (See BAS-PS-010).

THE CERTIFICATION PROCESS

An overview

The certification process is essentially an exercise in information gathering and confirming that the information demonstrates compliance with all the relevant clauses of the specified standard(s) or other form of specification.

The information may come from many sources and we, as a certifying body, are responsible for ensuring that any source used is reliable and, where necessary, has proven traceability to national standards of measurement.

Essentially the information is of three types:

- The manufacturer's drawings – providing detailed dimensional information, material selection information and occasionally processing information.
- Material supplier's data sheets – providing information on the properties of the materials used in construction, where reference to a national or international standard is inappropriate or insufficient.
- Sample test data – providing direct evidence of compliance with certain testing clauses in the construction standards.

Also critical, in most cases, is the physical process of comparing the sample with the drawings, to ensure that the drawings and sample are identical where relevant for compliance with the standards or specification. On occasion, it may be possible for us to accept a sample that differs from the drawings, but you should establish this with us before such a sample is submitted.

MANUFACTURERS' DRAWINGS

Certification drawings are used principally by the certifying body and by the company responsible for the design of the product (referred to here as the manufacturer).

The manufacturer prepares and uses the drawings:

- To record the controlled details of the certified product;
- To provide a source of reference for the control of manufacturing drawings;
- If the drawings are manufacturing drawings, to make the product;
- To audit or inspect final product for compliance.

We use the drawings:

- During examination, including comparison with a prototype or sample;
- In conjunction with the certification report, to demonstrate conformity;
- As a record of what has been certified;
- For product surveillance activities;
- To be held available for authorised third parties including accreditors (e.g. UKAS), inspecting bodies (e.g. The Health and Safety Inspectorate) and legislative authorities (e.g. EU Commission).

The drawings used for certification should ideally contain only those details necessary for:

- Compliance with the standard or other normative document to be demonstrated;
- The conformity of subsequent production items with the certified type to be achieved.

We recommend that you consider preparing separate certification drawings that are specifically for the purpose of certification and do not necessarily give every detail required to manufacture the product. Once these drawings are listed in a certificate, they can only be modified by having a new edition of the certificate issued, to permit the alteration.

Manufacturing drawings, derived from the Certificate Schedule Drawings, are referred to as Certificate Related Drawings. These drawings may be originated and/or modified under the control of a defined procedure within your organisation, without the need for our prior consent, unless the change relates to information controlled by the Schedule Drawings. If detailed manufacturing drawings are submitted for the purposes of certification, they will become subject to the same control as any other Certificate Schedule Drawing and this is not usually necessary or desirable.

The certification drawings should provide a general outline of the equipment and also concentrate on those details which are relevant to compliance with the specified standard(s). The details to be included will vary according to the emphasis of each standard. IECEx Operational Document OD 017 (available at <https://www.iecex.com/publications/operational-od/>) provides useful information on the preparation of drawings and other documentation.

At the completion of the certification process, once we are satisfied that the drawings contain all the relevant information to ensure that subsequent production will remain in compliance with the specified standard, the drawings are frozen at a given issue. The drawings are listed on the certificate and in the Certification Report (for IECEx in the ExTR), along with their issue and date. We supply a stamped and signed copy of each drawing along with the certificate and report.

MATERIAL SUPPLIERS' DATA SHEETS

Where possible, we will rely on the veracity of information contained in material suppliers' data sheets, particularly where it is backed up by declarations in accordance with recognised standards. However, on occasion, the data can be critical in determining compliance with the specified standard, but the presented data is in a form that does not provide sufficient traceability. Under these circumstances, we have to reserve the right to separately verify the material characteristics.

In most cases it will be necessary to confirm that the data given relates to a clearly identifiable material type and that a change in data will result in a change in material type reference.

TEST DATA

We have facilities to perform the majority of tests required by the large range of standards covering equipment for use in potentially explosive atmospheres, together with many more generalised tests. These facilities are subject to accreditation by the United Kingdom Accreditation Service (UKAS), demonstrating the effectiveness of the methods employed and the traceability of the measurements to national standards through a comprehensive system of instrumentation calibration. We have also been subjected to the "peer review" process of the IECEx Scheme to ensure that other laboratories and certification bodies throughout the world can have confidence in accepting our reports.

For many of the tests, the work can only be carried out by a specialist laboratory such as ours at Buxton.

For other more general tests, we would normally expect to carry out the more critical ones at our own laboratory unless there was prior agreement between us. This is particularly important for the large number of tests where subjective judgement plays a part, either in selecting the input parameters or in assessing the outcome. (Even the simple impact test requires a deal of judgement in assessing the correct point of application of the impact.) Where we do accept results from other laboratories, we have to demonstrate the equivalent traceability of all measurements. Obviously, we have to reserve the right not to accept results where we are unsure that the methods employed would give the same results as tests performed in our own laboratories. A report from another IECEx Certification Body provides the highest degree of acceptability but we will always seek clarification from the report issuer if there is anything that is not clear to us.

If you wish to submit results from your own laboratory on a regular basis, you may elect to have the facility audited by us specifically for that purpose. For further information, please contact us.

For the purpose of IECEx Certification, the use of such results from a manufacturer or other third party is very rigorously controlled. More information is provided in IECEx OD 24 which can be accessed at www.iecex.com.

CERTIFICATION REPORT

At the end of the certification process, we assemble evidence in the form of a report confirming how the information demonstrates compliance. Unlike some other European certification bodies, we routinely make this report available to our customers, since this represents the culmination of the work done leading to the issue of a certificate.

Other than for IECEx, we will not always create a Certification Report in association with new editions of a certificate, particularly where the changes are minor and do not affect compliance with the standards.

ATEX/UKEX CERTIFICATE AND SCHEDULE

The complete certificate comprises a front sheet and a schedule.

The front sheet gives the relevant summary information: Certificate Number; Manufacturers Name and Address; Equipment Title; Directive, Standards or Specifications complied with; Hazardous Area Marking (in accordance with the directive and standards) if relevant; along with the date of issue and a signature on behalf of SGS Fimko Ltd (our partner EU Notified Body in Finland) for ATEX, or SGS Baseefa Ltd. for UKEX.

Many manufacturers elect to have both forms of certificate issued at the same time.

The Schedule includes a brief description of the equipment, a list of the definitive drawings, any specific parameters relevant for use, and, where appropriate, a section on "Specific Conditions of Use." This is relevant if there are conditions for use over and above those found in normal industry codes of practice for installation. Often such specific conditions are directly mandated by the appropriate standard, for example if the equipment will only withstand the lower level of impact test.

A Type Examination Certificate is regarded as being a statement of fact on the day on which it was issued and, as such, the only reason for withdrawal would normally be if that statement were subsequently found to be incorrect.

IECEX TEST REPORT (EXTR) AND CERTIFICATE OF CONFORMITY (COC)

The IECEx ExTR provides all the information that is in the ATEX/UKEX Certificate, Schedule and Report.

The IECEx CoC provides abbreviated information similar to the ATEX Certificate and Schedule (but without a list of drawings and documents), in addition to the current status relating to production of equipment. Because the IECEx CoC also relates to production, it can be considered a time limited statement and its status (Current, Suspended or Cancelled) can be checked from the on-line certificate database at www.iecex.com.

PROGRESSION OF CERTIFICATION WORK

Ideally, the documentation package you supply will contain all the information to enable us to proceed straight through the certification process in one go and issue the certificate. Inevitably, this will not always be the case. Information may be missing, or some details may need to be changed to obtain compliance with the standard.

For complex projects, it may be necessary for there to be a number of interactions between us before all the evidence has been collected to justify certification. When this happens, the final delivery date for the certification documentation is as much a function of your reactivity as our own workload. If you are not sure where we have got to in the certification process, please contact us and we will give you an update.

TEST AND ASSESSMENT REPORTS

Where certification is not required, the results of tests or assessments can be reported as a separate function.

TECHNICAL ADVICE SERVICE

We have developed a wealth of knowledge of the standards, both from applying them and from taking a lead role in the British, European and International committees responsible for creating them.

We can make this knowledge available to you, to help you design your products to meet the requirements of those standards. We do this within carefully laid out guidelines that prevent us breaking the commercial confidence of our other customers, or stepping over the dividing line into design consultancy that would then prevent us acting as a certification body.

Proper targeted advice at an early stage of a project can usually save time and costs at a later stage.

If you want specific technical advice, or if you want more general training in aspects relating to our services, please contact us.

If you are unable to meet us face to face (for example because of distance) we can provide the advice service by telephone or one of the video conferencing packages, typically Microsoft Teams. In some circumstances, you may wish to commission a "Gap Report" where we can produce a summary of initial findings from a document review, prior to instigating a full certification project including supply of samples and the performance of tests.

CONFIDENTIALITY OF REPORTS AND CERTIFICATES

Reports (including IECEx ExTRs) are normally regarded as being confidential between you and us, although, when we provide a report in a publishable form, you are entitled to make use of it, so long as it is reproduced in its entirety and not used out of context. If you are requiring certification from overseas test houses, whether covered by a mutual recognition agreement or not, you will usually find an SGS Baseefa Report, particularly an ExTR, to be a good starting point.

Certificates are not regarded as confidential documents, but copies required by third parties should normally be requested from the certificate holder rather than us. However, we will produce further copies when circumstances dictate it to be appropriate. You have an obligation to provide copies of certificates with supplied equipment, when requested, and an obligation to inform your customers of any "Specific Conditions of Use" given in a certificate with a number having a suffix "X".

The various directives make specific provision for certain documentation to be held available for member states and the European Commission, and require that abstracted information from issued certificates is circulated on a routine basis.

We reserve the right to make that abstracted information publicly available.

Under certain circumstances we may also make the full text of certificates directly available to the public.

As the full text of every IECEx CoC is available directly on the IECEx web site, this is truly in the public domain and can be downloaded by any interested party. Note, however, that the certificate on the web site is considered the master and that any printed copy has secondary status.

TRADE AGENTS

It is a common commercial practice for a manufacturer to supply "badged" product; i.e. the product bears the name of the company to whom it has been sold by the manufacturer and who will, subsequently act as a supplier to the market. This supplier will also normally provide the market with all relevant documentation in his own name. We have procedures under both IECEx and ATEX to assist this process.

APPLICATIONS FOR TYPE EXAMINATION

Contacting us

We welcome applications for Type Examination from all customers who have registered with us. If you have not already registered, we will be happy to accept your request for registration along with your application for type examination. (Please see our Publication BAS-PS-003 General Information and Guide to Services.)

We provide an application form, for the use of those seeking type examination, but we will also be pleased to proceed on the basis of any written application (letter, fax, e-mail) provided that we have the information that would be obtained by the use of the form. We will supply quotations to anyone who makes the request.

QUOTATIONS

For brand new products, we normally recommend that you ask us for a quotation. This will be supplied entirely free. We will recommend the best way to proceed with certification, including the use of our Technical Advice Service if you appear to need guidance on the way that the available standards can be applied to your product. Where the steps to completion of the certification process are reasonably clear, we will provide a fixed price quotation. Where there is still work to be done before we are ready to proceed towards certification, we will provide a firm quotation for the first phase of the work and a budget quotation for completion. Our quotation will normally offer staged payments where appropriate. Work can commence following receipt of your order confirming the acceptance of our quotation.

DIRECT ORDERS

For certain routine certification projects, where we have an agreed protocol with our customer, we will normally avoid the quotation process and accept a direct order on the basis of the agreed protocol. Our staff will discuss this with you if it

appears likely to be of interest. (On this basis, we hope to maintain certification times of less than two weeks for those routine projects that do not require the provision of a testing facility.)

Other projects, such as simple new editions of certificates, are also suitable for the direct order route. Should it become apparent that we cannot complete the project within a reasonable cost, we will provide an appropriate quotation, or otherwise obtain your agreement to the cost in writing before proceeding.

PROVISION OF DRAWINGS, DATA AND SAMPLES

The more information that we have when we provide a quotation, the more accurate it will be, so we encourage you to send drawings and data with the enquiry. Unless we ask for a sample at an earlier stage, we prefer that you wait until we have provided you with our quotation (which will specify the samples we require, together with details of any special preparation). We would not normally expect to receive samples until after you have confirmed an order with us.

We are happy to receive documentation by e-mail and can handle anything in Adobe Acrobat (.pdf) format. We also have other software packages available to us (particularly for dealing with PCB artwork) so please ask if we can accommodate your native format.

PAYMENT OF FEES AND CHARGES

We operate different payment schemes according to the amount of work placed with us by a particular customer and their payment record history.

For new customers, and for those with a poor payment history, we require most payments in advance and certainly before release of final documentation. Such customers will normally receive invoices based on the progress of individual projects.

For customers with an established good payment record, we will act as expeditiously as possible to get projects moving as soon as possible and shorter projects will often be invoiced on completion.

Customers may also elect to run a "reserve account" whereby the need for individual project payments is avoided and the rate at which invoices are sent depends on the rate of turnover of certification projects. We will supply a receipted invoice for each project that has been charged to the reserve account.

CONTACT INFORMATION

To learn how SGS Baseefa can help you exceed customer expectations, visit www.sgs.co.uk/sgsbaseefa or contact baseefa@sgs.com for more information.

WWW.SGS.COM

WHEN YOU NEED TO BE SURE

