

Whitepaper

Forewarned is forearmed

”Explosion protection goes beyond a nice document”



Written by:



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Did you know that manufacturers can declare their own Ex products in safety category 3, such as control cabinets and portable devices, safe? And that they can subsequently market these products as CE marked products for zone 2 or 22? There is nothing wrong with that, but it brings to mind the proverb of the butcher inspecting his own meat. However, through ‘impressive stamps’ and other misleading tactics, it sometimes seems that the same product has been approved by a Notified Body. That is not the case, however – it is still the same butcher. For the buyer, it is important to watch out; forewarned is forearmed.

“A manufacturer who 'certifies' his own equipment is like the butcher who inspects his own meat. That calls for problems.”

The ATEX product directive (ATEX 114) has a conformity procedure for safety category 3 whereby manufacturers may independently, without input from a Notified Body, declare their produced Ex products (such as control boxes or portable devices) safe by means of a self-assessment and subsequently place them on the market as a CE marked Ex product for Zone 2 or 22.

So much for the wording dictated by the text, as the ATEX directive must be included in the National Legislation in each member state of the European Union due to the ratification of the Lisbon Treaty. This is how it is regulated in the Netherlands under the Explosion-safe Equipment Commodities Act Decree.

Self-certification

The category 3 conformity procedure is commonly referred to as ‘self-certification’. Some people will of course understand this is actually asking for trouble. This is because a manufacturer cannot formally certify at all (this is why independent certification bodies exist for this activity), which brings us back to the proverb of ‘the butcher who inspects his own meat’. The situation can lead to plenty of negative press and scandals – just think of horse meat being sold as beef!

Currently, we see an increasing amount of manufacturers in the market presenting themselves as Ex manufacturers. Healthy competition is welcomed in the Ex market, but only if everyone adheres to the applicable rules. And that is exactly where attention must be drawn. Does the end user realize that the safety of the product and the correctness of the accompanying documents may be essential in the event of an incident?

For the record, ATEX directive 2014/34/EU also defines safety category 1 and 2. In the conformity procedure for category 1, there is always mandatory involvement of a Notified Body; for category 2 this only applies to electrical equipment. But there is only a ‘certificate’ when a Notified Body is first involved. This may be a ‘Unit Verification Certificate’ (for one-off production), but it is usually an ‘EU Type Examination Certificate’ (for serial production).

Translation

1 **Type Examination Certificate**

2 Equipment intended for use in potentially explosive atmospheres
Directive 2014/34/EU

3 Type Examination Certificate Number: **BVS 20 ATEX E 061 X**

4 Product: **SPC – SILAS Pressurized Cabinet type *7-3704-****/******

5 Manufacturer: **BARTEC GmbH**

6 Address: **Max-Eyth-Str. 16, 97980 Bad Mergentheim, Germany**

7 This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential Report No. BVS PP 20 2084 EU

9 The Essential Health and Safety Requirements are assured in consideration of:

EN IEC 60079-0:2018	General requirements
EN 60079-2:2014	Pressurized enclosure "p"
EN 60079-11:2012	Intrinsic Safety "i"

10 If the sign 'X' is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

II 3G Ex pzc ** IIC T5-T3 Gc
II 3D Ex pzc ** IIIC/IIIB T95 °C-T130°C Dc
** General the marking can be amplified with the following types of protection dc, ec, bc, ic, mc, oc, lc, cc, (lc 's'), (lc 't') and/or (lc 'c') for using separately certified components.

DEKRA Testing and Certification GmbH
Bochum, 2020-08-03

Signed: Jörg-Timm Kilisch
Managing Director

Page 1 of 3 of BVS 20 ATEX E 061 X
This certificate may only be reproduced in its entirety and without any change.
DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
Certification body: Dinnendahlstr. 3, 44629 Bochum, Germany
Phone: +49 234 3098-400, Fax: +49 234 3098-401, e-mail: DTIC-Certification.body@dekra.com

↑ A voluntary certificate from a genuine recognized Notified Body, DEKRA GmbH.

Tips

- Take a serious look to see what is on offer.
- Cheap can be expensive, especially when it comes to the safety of the plant, but even more so when it comes to the safety of the employees.
- Be on the lookout for misleading sales pitches; 'A large oil company also uses it'.
- The larger reputable Ex manufacturers, many of whom have been in business for over 50 years, know how things should be done and do everything they can to apply the regulations correctly.
- Ask the inspection agencies whether they assess the documents supplied sufficiently in terms of content. Just receiving an impressive document does not mean that it is correct.

Voluntary

It is also worth mentioning that a certificate can also be issued for category 3, but this is done on a voluntary basis and is then called a 'Type Examination Certificate' (note: without the indication 'EU'). But again, 'certificates' should be seen as documents demonstrating independent examinations. Even major reputable Ex manufacturers make use of these to get their products more easily accepted by more demanding end users and inspection agencies. In all cases the manufacturer applies CE-marking and draws up an EU Declaration of Conformity which, together with the installation or user safety instructions, is mandatory with the equipment. Legally in Europe, an EU Declaration of Conformity is more important than a Type Examination Certificate. In fact, the latter certificate is proof only for the manufacturer that the prototype has been approved by an independent party. Nothing more, nothing less.

Impressive stamps

Back to category 3. What do we see on the market today? Many products that are subjected to the conformity procedure by manufacturers, without the intervention of a Notified Body, where the manufacturer draws up a 'certificate' in almost exactly the same style and context as when it comes from a real Notified Body. Finally, the certificate is also signed with impressive stamps as if it came from a recognized Notified Body... Is this misleading?

Keep in mind that you, as a purchaser or user of such a product, is actually being sent up the garden path by the manufacturer. The Ex manufacturer should provide an EU Declaration of Conformity with which it declares and legally signs a 'Presumption of Conformity with the Essential Health and Safety Requirements (EHSRs) of the directive'. But what do you get? A 'certificate' which looks like an independent Type Examination Certificate but is in fact drawn up by the manufacturer itself.

It is to be hoped that the user will detect this. For someone who knows the standards well, this kind of manufacturer will quickly be found out; types of protection are mentioned, which are not always found in the list of applied standards or, even worse, may not apply to the product at all. Furthermore, we often see that the edition of the standard is old or not mentioned at all; apparently they don't even know the 'State of the Art'.

What also happens is that IECEx terms and ATEX terms are confused. This is unfortunate because IECEx, as a voluntarily applicable system, deviates very strongly from ATEX here;

Ex

DHZ Doe Het Zelf BV

(1) **UNIT ASSESSMENT CERTIFICATE**
Issued by a qualified body in explosion safety

(2) European Union Declaration of Conformity for Group II Category 3G equipment in accordance with Directive 2014/34/EU Annex VIII

(3) Document Number : **DHZ 20ATEX1234X**

(4) We, Doe Het Zelf BV, Montagelaan 11, 1313 AZ Klussendam, The Netherlands, herewith declare that :

(5) The apparatus ATEX Zone 2 ...
Converted to II 3G IIC T4 / II 3D IIC T135°C
Type ...
Quantity 2 pieces
File TCF...
Serial numbers DH-20...-01 /-02

(6) Is in conformity with the provisions of the following European Union directive, including the latest amendments, and with national legislation implementing these directives:
2014/34/EU (ATEX); concerning equipment and protective systems intended for use in potentially explosive atmospheres

(7) And that the following harmonized standards have been applied in design and construction:
EN 60079-0 EN 60079-11 EN 60079-15

(8) The marking of the apparatus includes the following:
Ex II 3G Ex I c nAC h IIC T3 Gc / II 3D Ex tc IIC T135°C Dc

(9) The apparatus in its basic version is originally manufactured by : OEM

(10) Assessment and conversion to explosion safe is carried out by:
Doe Het Zelf BV, Montagelaan 11, 1313 AZ Klussendam, The Netherlands.

(11) On behalf of: Client Name

(12) This declaration does not imply that the apparatus meets all the statutory requirements in any particular industry and/or circumstance.

Doe Het Zelf BV, Klussendam, 01-09-2020

Prof. Dr. Van der Kneei
IECEx Competent Person

**IECEx Certificate
Personnel Competence**

(X) Special conditions for safe use are specified in the accompanying user manual of the equipment.

↑ A so-called 'certificate' from a manufacturer posing as a qualified body with an IECEx Competent Person in service.

whatever level of protection you wish to apply under IECEx, from 'a' to 'c', in all three cases an independent IECEx Certification Body shall perform an assessment and certify conformity to ISO or IEC standards. An ATEX related 'certificate' (which should be an EU Declaration of Conformity) is therefore indeed misleading if it is signed with titles such as Competent Person according to the Personnel Competency Scheme IECEx 05. Marking with IECEx logos is in fact a violation of the IECEx Rules of Procedure and therefore punishable as 'misuse'. One could even openly question the competence of such persons.

An explanation

But what if there is an accident or calamity with the product in question. Who is responsible then? In fact, the answer is simple: the plant owner always remains responsible for what they do or do not allow in their factory.

Whether the purchaser or user of the product is insured if it turns out to be a dubious product will have to be made clear. Should it go wrong, it can go so wrong that there is practically no evidence left. If the cause can be found, the manufacturer will have some explaining to do in court. It would probably mean the end of the company.



↑ An Ex certified mobile computer – but always remember: is this device suitable for the relevant zone?

The author of this article, Karel Neleman, is Ex authorized person at BARTEC Group.

And besides:

- Member of the Dutch National standardization committee Explosion Safety and Chairman of the Installations Subcommittee
- Delegated Ex manufacturer in the Dutch ATEX Comitology Committee
- Delegated Ex manufacturer in the international IECEx Management Committee
- Member of several TC31 Maintenance Teams that bring standards to the desired State of the Art
- Member of the ATEX 153 platform; a repository of knowledge about Ex applications

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