Detailed Implementation Rules for Compulsory Product Certification Ex Electric Equipment

No.: SITIIAS-C23-01:2023

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Shanghai Inspection and Testing Institute of Instruments and Automation Systems Co., Ltd.

Contents

0 Introduction

These detailed implementation rules are prepared in accordance with the requirements of CNCA-C23-01:2019 *Implementation Rules for Compulsory Product Certification- Explosion-proof Electrical Products* (hereinafter referred to as the implementation Rules).

These detailed implementation rules are supporting documents of the implementation rules, which shall relate and be used together with the implementation rules, CNCA-00C-001 *Implementation Rules for Suspension, Cancellation and Withdrawal of Compulsory Product Certification*, CNCA-00C-002 *Supplementary Provisions for ODM Model Involved in the Implementation Rules for Compulsory Product Certification*, CNCA-00C-003 *Implementation Rules for Compulsory Product Certification—Production Enterprise Classification Management, Certification Mode Selection and Determination*, CNCA-00C-004 *Implementation Rules for Compulsory Product Certification--Utilization of Testing Resources and Other Certification Results of Production Enterprises*, CNCA-00C-005 *Implementation Rules for Compulsory Product Certification-- Factory Quality Assurance Capability Requirements*, CNCA-00C-006 *Implementation Rules for Compulsory Product Certification-- General Requirements for Factory Auditing*, and CNCA-00C-007 *Implementation Rules for Compulsory Product Certification—Information Submission, Transmission and Disclosure*. The scope of products and standards applicable to the implementation rules shall be consistent with the implementation rules, and shall be adjusted timely in accordance with the announcement of catalog definition and catalog adjustment issued by the Certification and Accreditation Administration of the People's Republic of China (hereinafter referred to as CNCA).

1 Scope of Application

These implementation rules are applicable to Class I, Class II and Class III explosion-proof electrical products, which including: Ex motors; Ex electric pump; Ex power distribution units; Ex switch, control and protection products; Ex starter; Ex transformer; Ex electric actuator, solenoid valve; Ex plug-in device; Ex monitoring device; Ex communication and signaling equipment; Ex air conditioning and ventilation equipment; Ex electric heating

products; Ex accessories, Ex components; Ex instruments and meters; Ex sensor; Safety barrier; Ex instrument box.

The adjustment of the scope of application caused by changes in laws and regulations or related product standards, technologies, industrial policies, and any other factors, shall be subject to the announcement issued by CNCA.

2 Certification Criteria

Explosion-proof electrical products shall be certified according to applicable standards of explosion-proof type, which can be one of the following, can also be two or more than two kinds of combination.

Table 1: Certification Criteria

No.	Ex Type	Criteria	
		General Standard	Specialized Standard
1	Flameproof enclosures "d"	GB/T 3836.1	GB/T 3836.2
2	Increased safety "e"		GB/T 3836.3
3	Intrinsic safety "i"		GB/T 3836.4
4	Pressurized enclosure "p"		GB/T3836.5
5	Liquid immersion "o"		GB/T3836.6
6	Powder filling "q"		GB/T3836.7
7	"n" Type		GB/T 3836.8
8	Encapsulation "m"		GB/T 3836.9
9	Dust ignition protection by enclosure "t"		GB/T 3836.31

In principle, the above standards shall implement the currently valid version issued by the National Standardization Administration department. When the above standards are revised, they shall be implemented in accordance with the relevant documents issued by CNCA.

3 Related Requirements for the Certification Mode

Explosion-proof electrical products are high-risk products. The basic certification mode for implementing compulsory certification for explosion-proof electrical products is:

Type test & initial factory auditing & post-certification supervision. These three contents will be reflected in the certification.

The post-certification supervision in the above statement refers to: tracking auditing after obtaining certification, sample testing or auditing at production site.

Shanghai Auditing and Testing Institute of Instruments and Automation Systems Co., LTD. (hereinafter referred to as SITIIAS) , with the guidance of the requirements of CNCA-00C-003 *Implementation Rules for Compulsory Product Certification—Factory Classification Management, Certification Mode Selection and Determination*, carries out classification management of factory and combines the classification management results, decides the mode and frequency of post-certification supervision, Some class could be exempted from initial factory auditings of additional product certification units.

Please refer to Annex 1 of these Rules for the classification of factory. See Article 5.3 and Table 2 for details of post-certification supervision methods and frequency based on classified management results of factory.

Please refer to Article 4.5.7 for specific requirements for initial factory auditing of products exempted and expanded based on the results of enterprise classification management.

4 Certification Process and Related Requirements

4.1 Submission and Acceptance of Application for Certification

The applicant fills in the application through SITIIAS Certification Business System: www.sitiias.com.cn.The applicant shall fill in the necessary factory and product information accurately according to the application requirements. SITIIAS will review the

application according to the relevant requirements, and issue a notice of acceptance or rejection, or request the applicant to re-submit the certification application after rectification.

Certification applications under any of the following circumstances will not be accepted:

1) Products are not listed in the national compulsory certification catalogue;

2) In the registration certification materials of the certification client (Applicant), producer (Manufacturer), production enterprise (Factory), the business scope does not cover the certified products; Lack of legal proof materials;

3) If the certification is entrusted by ODM / OEM, the valid ODM agreement, OEM agreement, letter of authorization and relevant certificates copies are not provided.

4) The product belongs to the "eliminated category" in the Guidance Catalogue for Industrial Structure Adjustment;

5) The certification client(applicant), producer (manufacturer), production enterprises (factory) do not conform to national laws and regulations and other relevant industrial policies;

6) Certification client(applicant), producer (manufacturer), production enterprise (factory) are included in the serious trust-breaking subjects of national credit information;

7) Other circumstances that cannot be accepted by other laws and regulations.

4.2 Certification Implementation Arrangement

After SITIIAS accepts the application for certification, it will divide the applied products into units according to Schedule 2 of Annex 2, formulate the certification scheme and inform the applicant. The authentication scheme usually includes the following contents:

1) Unit division information;

2) List of application materials to be submitted;

3) Required certification process and deadline;

4) Laboratory information;

5) Contact information of SITIIAS staff;

6) Responsibilities of certification parties in each link of certification implementation;

7) Other matters that need to be explained.

4.3 Documents for the Application

After receiving the application, the applicant shall provide the application and technical materials of the certified products to SITIIAS and / or the designated laboratory in accordance with the requirements of the certification scheme.

When applying for the first time, it is necessary to provide company information and product information. And if necessary, the industrial and commercial registration certificate should be provided.

When applying for change, corresponding materials should be provided according to the change project (such as the original certificate, the change certificate provided by the superior competent department, the product change information, etc.).

4.4 Type Test

4.4.1 Type Test Plan

After the application materials are approved, SITIIAS will formulate the type test plan and inform the applicant. Type test plan includes sample requirements and quantity of type test, test criteria and test items, laboratory information, etc. (The applicant can choose the designated laboratory independently when submitting the certification commission)

If the certification client submits the type test report that meets the requirements when proposing the certification commission, it can be accepted after SITIIAS evaluates that it meets the certification requirements. （Admission）

4.4.2 Sample Requirements for Type Test

The applicant shall ensure the authenticity of the samples and the consistency with the actual products. The type test sample shall be produced and processed by the production enterprise (factory) applying for certification. Under normal circumstances, the applicant prepares samples according to the requirements of the type test plan and sent to the laboratory for testing; If necessary, for Class C and Class D factories, SITIIAS can take on-site samples and sealing according to the requirements of type test plan. The samples are sent

to the testing laboratory by the applicant.

Upon receipt of the sample, the laboratory shall verify the sample and report the verification information to SITIIAS.

If the key components and materials meet the following conditions, they can be exempted from separate testing. If necessary, samples and relevant materials should be provided for SITIIAS to verify

-- Have obtained the compulsory product certification; or

--Have obtained a voluntary certification recognized by the CNCA; or

-- Have obtained a type test report issued by designated laboratory.

See Annex 3 for detailed requirements which lists key components and materials used in the products.

4.4.3 Type Test Items

In principle, the type test items shall include all applicable items specified in the product certification standards. When some of the test items in the standard are adjusted, they should be implemented in accordance with the relevant provisions issued by the CNCA.

4.4.4 Implementation of Type Test

The laboratory shall arrange sample test after receiving the notification of the test task, The test period shall not exceed 50 working days (calculated from the time when the test task is issued, excluding the time spent by the applicant for rectification and re-examination due to unqualified testing items). When there are long-term test items, the test period can be extended appropriately. The laboratory will make a complete record of the whole testing process and archive it to ensure the traceability of the records of testing process and results.

When there is a failure in the test, the applicant is allowed to make rectification; The rectification shall be completed within 6 months, and the applicant will be deemed to have abandoned the application if the period is exceeded; the applicant can also terminate the application voluntarily.

See Annex 7 " Application of testing by using testing resources of factory " for relevant requirements of testing using factory testing resources.

4.4.5 Type Test Report

After the type test, the laboratory issues a type test report in accordance with the report format stipulated by SITIIAS, and submit it to SITIIAS together with the approval data, and disposes the test samples according to the sample management procedure.

The applicant / manufacturer / factory shall ensure that complete and valid type test reports can be provided to SITIIAS and enforcement agencies during post-certification supervision.

4.5 Initial Factory Auditing

Initial factory auditing is an on-site auditing and evaluation conducted by SITIIAS to determine whether a factory's quality assurance capabilities and product conformance control capabilities meet certification requirements.

Considering that Ex electrical equipment is high risk product which is closely related to personal safety and property safety, for 100% principally, the factories are subject to conduct initial factory auditing before being certified.

Initial factory auditing is conducted by notifying the factory in advance.

Initial factory auditing includes:

1) Initial factory auditing;

2) Factory auditing for adding certification unit;

3) Factory auditing of different production entrustment methods, such as OEM factory auditing;

4) Factory auditing for certification changes, such as factory auditing for relocation of factory, factory auditing due to the standard version update, etc.

4.5.1 Content of the Check

The content of initial factory auditing includes factory quality assurance capability auditing, product conformance auditing and compliance auditing with standards.

4.5.2 Auditing of Factory Quality Assurance Ability

The auditing of factory quality assurance capability shall be carried out in accordance with Annex 4 and 8 of these rules.

4.5.3 Auditing of Product Conformity and Compliance with Standards

During the factory auditing, the conformity auditing of the products applying for certification should be carried out at the production site, usually for the following content :

1) The identification and necessary instructions on the certification products are conformed with the type test report and other technical materials;

2) The structure and parameters of certification products (mainly related to explosion-proof safety) are conformed with the type test report, change approval, drawings and other technical materials;

3) The key components and materials used in the certification products that have an impact on explosion-proof safety performance are conformed with the type test report, SITIIAS approval or by the certification technical representative of the factory in accordance with the specified requirements.

4) Conduct specified tests where applicable.

4.5.4 Scope of Auditing

The site auditing shall at least include the site where the final assembly and/or testing of the certified product is carried out and where the certification mark is applied. If necessary, SITIIAS will conduct extended auditing on other relevant sites, applicants, and manufacturers.

4.5.5 Check Time

Normally, the initial factory auditing is carried out after the type test is approved. If necessary, the type test and factory auditing can be carried out at the same time. The Applicant shall bear the risk of invalidation of the initial factory auditing results due to the failure of the type test.

During the initial factory auditing, in principle, the factory should produce products within the scope of the application certification. The number of days required for factory auditing is determined according to the types of products and type of protection. Generally, it is 2 to 6 man-days considering factory scale and distribution.

After the type test, the factory auditing should be completed within one year in principle, otherwise the type test should be repeated.

4.5.6 Auditing Conclusion

The factory auditing results are divided into four categories: "Factory Auditing Passed", "Literally Passed", "On-site Auditing Passed" and "Factory Auditing Failed". Among them, "Literally Passed" refers to the existence of nonconformance items, and the factory shall take corrective measures within the specified time limit. After SITIIAS passes written verification, the factory auditing passes; "On-site Auditing Passed" means that there are non-conformities, and the factory takes corrective measures within the specified time limit to eliminate nonconformance items. After the on-site auditing is effective, the factory auditing is passed. If the factory auditing does not conform to the items, the factory shall complete the rectification within the specified time limit (generally not more than 40 working days), SITIIAS will verify the rectification results. Those who fail to complete the rectification on time will be denied as failing the factory auditing.

4.5.7 Initial Factory Auditing of Adding the Certification Unit

According to the classified management results of factory, it shall be implemented in accordance with Annex 5 and the following principles:

1) When the factory adds certification units involving the addition of factory definition codes, initial factory auditing should be arranged.

2) The addition of certification units for factories of Class C and Class D does not involve in the addition of factory definition codes but product categories, initial factory auditing shall be arranged.

3) In other cases, initial factory auditing can be exempted in principle.

4.6 Evaluation and Approval of Certification Results

After receiving the complete certification materials (including application materials, type test reports, factory auditing reports, etc.), SITIIAS will make a comprehensive evaluation and review to make the certification decision. If the evaluation is qualified, the certificate shall be approved and issued; If the evaluation fails, the certificate will not be issued and the certification shall be terminated.

4.7 Certification Time Limit

The certification time limit refers to the working days from the acceptance of the certification application to the issuance of the certification certificate, including the time between type test, factory auditing, evaluation approval of the certification result, and the time of making certification.

Under normal circumstances, the certificate will be issued to the applicant within 90 days from accepting the certification entrustment. The applicant shall actively cooperate with the certification activities. During the certification process, the extended time caused by the applicant due to non-conforming product inspection and factory auditing is not included in the certification time limit.

4.8 Certificate

4.8.1 Maintenance of Certificates

The term of validity of the product certificate shall be 5 years. Within the validity period, the validity of the certificate is maintained by the post-certification supervision of SITIIAS.

If the validity period of the certificate expires and it needs to be used continuously, the applicant shall submit a certification entrustment within 90 days before the validity expires. If the result of supervision after the last certification within the validity period of the certificate is qualified, SITIIAS will directly issue a new certificate after receiving the certification entrustment.

4.8.2 Change of Certificates

After the product is certified, if the content of 4.8.2.1 is changed, the applicant shall apply to SITIIAS for a change and obtain approval before implementing the change.

4.8.2.1 Application for Change

When changing the entrustment and requirements of the followings, the applicant shall submit a change application to SITIIAS.

1) The key components and materials used in the product and the structure and parameters related to explosion-proof safety are changed;

2) The name and model of the licensed product are changed due to the way naming change of the product.

3) Adding other models of the same product on the certificate (provide relevant technical information to determine whether the difference has an impact on explosion-proof safety performance; if so, supplementary tests shall be carried out before the change);

4) Reduce other models of the same product on the certificate;

5) The name and address of the factory have been changed and the factory has not moved;

6) The name of the factory is changed, the address name is changed, and the factory is not moved;

7) The name of the factory remains unchanged, the address name is changed, and the factory has not moved;

8) Relocation of factory;

9) Change of name and/or address of the original applicant;

10) Change of name and/or address of original manufacturer;

11) The national standards, technical rules or certification rules on which the product certification is based have changed;

12) Changes affecting product design and specifications;

13) Manufacturer change of key components and materials;

14) Major changes occur in the quality system of the factory;

15) Other changes affecting the scope of certified products.

Please refer to Chapter 4 of these Rules for the application process of change.

For the change of the same product and the same content of multiple factories belonging to the same manufacturer, the applicant can submit a change request only once, and the certificates involved in the change can be used in association.

The ODM certification product change application must be submitted by the initial certificate applicant. After being approved by SITIIAS, other ODM certificate applicants must submit the application for certification change within 1 month. However, it does not involve explosion-proof safety performance (such as the change of applicant's name, product model naming method, certificate validity period, etc.).

4.8.2.2 Change Evaluation and Approval

According to the content of the change, SITIIAS evaluates the information provided to determine whether the change can be approved. If sample testing or factory auditing is required, changes can be approved only after passing the test or auditing. In principle, the representative model sample for which the entire type test was initially conducted should be used as the basis for the evaluation of changes.

Changes can only be implemented after approval by SITIIAS.

4.8.2.3 Record of Change

Changes to Class B key components and materials used in the products, as well as other structural and parameter changes that do not involve explosion-proof safety, can be confirmed, and approved by the SITIIAS-approved technical representative of manufacturer / factory without the need to provide sample tests. Keep appropriate records, SITIIAS will conduct inspections during supervision after obtaining the certificate, and conduct verification tests if necessary.

See Annex 3 for the change requirements of key components and materials.

4.8.3 Extension of Products Covered by the Certificates

When the applicant needs to expand the product scope covered by the certificate which has obtained, it should submit a change application to SITIIAS.

SITIIAS will check the difference between the expanded product and the original certified product based on the technical information of the expanded product provided by the applicant, confirm the validity of the original certified product and make supplementary tests and/or auditing on the production site for the difference. If the verification passes, SITIIAS will issue or renew the certificate separately according to the requirements of the applicant.

In principle, the representative model sample for which the entire type test was initially conducted should be used as the basis for the extended evaluation.

4.8.4 Cancellation, Suspension and Revocation of Certificates

The cancellation, suspension and revocation of certificate shall be implemented in accordance with the Provisions on the

Administration of Compulsory Product Certification issued by CNCA and the Implementation Rules on cancellation, Suspension and Revocation of Compulsory Product Certification Certificate and the relevant regulations of SITIIAS.

4.8.5 Use of Certificate

The use of the certificates shall comply with the requirements of the Provisions on the Management of Compulsory Product Certification.

4.9 Certification logo

The administration and use of certification logo shall conform to the provisions of the "Requirements for the Administration of The Addition of Compulsory Product Certification Marks" issued by the CNCA.

4.9.1 Logo Style

The pattern of certification logo for products covered by this Regulation is shown as follows:

4.9.2 Logo Position

The uniformly printed CCC logo of standard specifications shall be placed on the obvious position of the certified product. If the CCC logo is printed/mould pressed, the CCC logo shall be printed and mould pressed on a prominent position on the nameplate or the product body. If CCC logo cannot be added to the body, the CCC logo must be applied to the minimum package of the product and the attached documents.

4.10 Technical Disputes and Appeals

Appeals, complaints and disputes raised by the applicant shall be handled in accordance with the relevant regulations of SITIIAS.

4.11 Other

Certification process and time limit this detailed rules does not specify shall comply with the relevant regulations of SITIIAS and the operation instructions.

Applicant, Manufacturer and Factory shall cooperate during certification process actively.

5 Requirements of Post-Certification Surveillance

Post-certification supervision refers to one or a combination of the following two methods: post-certification follow-up auditing, on-site sample testing or auditing. According to their own conditions, the factory can choose the laboratory listed to test the samples.

The methods of post-certification supervision and auditing include:

1) Routine supervision and auditing.

For the purpose of maintaining a valid status of the certification, auditing of a factory and/or supervised sampling of products for a relatively fixed period of time.

2) Special supervision and auditing (unconventional supervision and auditing)

In addition to routine surveillance auditing, unscheduled and usually unannounced auditing of a factory and/or supervised sampling of a product for the purpose of disposing of certificate for product or factory quality information.

3) Certificate restoration factory auditing

Auditing of the factory and/or surveillance sampling to restore the status of a certificate from suspension to validity. Certificate restoration factory auditing can be carried out in accordance with the contents and requirements of the initial factory auditing.

5.1 Post-certification Supervision and Auditing

5.1.1 Principles of Supervision and Auditing after Certification

Based on the classification management of applicant, SITIIAS implements effective follow-up auditing on the certified products and their applicant to verify that the quality assurance capabilities of production applicant continues to meet the certification requirements,

ensure that the certified products continue to meet the standard requirements and maintain consistency with the type test samples.

5.1.2 Contents of Supervision and Auditing after Certification

The contents of supervision and auditing are: By admitting the results of enterprise quality management system certification, simplify the inspection of factory quality assurance ability and strengthen the inspection/testing of product consistency.

The auditing of factory quality assurance capability shall be all or part of this Regulation 4.5.2.

The product used for the product consistency check may be on-site production and/or qualified product in stock. The specific requirements are the same as those in Article 4.5.3 of these rules, as well to check the use of the "CCC" logo and certificate.

For ODM factories, it is also necessary to check the implementation of ODM cooperation agreement, “CCC” logo management, customer product management, production and sales management, and the actual situation of ODM factories producing certified products for each other different producers (manufacturers). Special attention should be paid to the consistency of ODM products when conducting conformance checks.

5.2 Sampling for Testing or Auditing on Production Site

5.2.1 Principles of Sampling for Testing or Auditing at Production Site

SITIIAS conducts on-site sampling testing/auditing of certified products according to the quality risk of certified products and the classification management requirements of the factory. In principle, routine supervised sampling tests or auditing should generally cover the identification code of certified products, and the sampling frequency is shown in Table 2.

If the production site samples are taken for testing/auditing to implement the post-certification supervision, the applicant, the manufacturer, and the factory shall cooperate.

5.2.2 Sampling on Production Site for Testing or Auditing

The items specified in the standard on which the certification test is based can be used as sampling test items. For sampling auditing, testing resources of applicant can be used for testing. See Annex 7

application of Testing Resources of Production Factories for relevant requirements.

5.3 Frequency and duration of post-certification supervision

After obtaining a certificate, SITIIAS determines the frequency of routine supervision according to the classification of factory (see Table 2), and increases the frequency of supervision if necessary according to the continued conclusion of post-certification supervision and quality information such as national quality supervision spot check. According to the product type and explosion-proof type of the certified product, the supervision and auditing time is usually 1-3 persons per day. For ODM factories, the number of person-days for each of them shall be increased by 0.25 person-days, up to a maximum of 1 person-day.

Table 2: Factory Classification and Frequency of Supervision

Factory Classification	Supervision Frequency	Supervision Way
A	Once /24 months	Supervision, or increase production site sample testing/inspection.
B	Once /12 or 18 months Note: Based on the risk assessment principle （Fully considering the certification results of IECEx and ISO 9001, etc.）, the certification body determines the frequency of supervision over 12 or 18 months	Supervise and/or increase production site sampling for testing/inspection Note: sample once per certification cycle according to the factory code coverage principle.
C	Once /12 months	Supervise and inspect production site samples for testing/inspection. Note: Sampling shall be conducted once per supervision cycle according

		to the factory code coverage principle.
D	2 times /12 months	Supervise and inspect production site samples for testing/inspection. Note: Sampling shall be conducted once per supervision cycle according to the factory code coverage principle.

5.4 Records of Post-Certification Supervision

SITIIAS shall record and archive the whole process of post-certification supervision for a period of 2 years from the date of expiration/cancellation/revocation of the certificate to ensure the traceability of the certification process and results.

5.5 Evaluation of Post-Certification Surveillance Results

SITIIAS conducts a comprehensive evaluation of the post-certificate supervision conclusions, the sample testing/auditing conclusions drawn from the production site, and relevant data and information. Those who pass the evaluation may continue to maintain the certificate and use the “CCC” logo; If the evaluation fails, SITIIAS will suspend or revoke the certificate according to the corresponding situation, and publish it.

6 Charge Basis and Related Requirements

Charge will be collected by SITIIAS and designated laboratories in accordance with relevant regulations and publicized charging standards. The applicant shall pay the certification fee on time and in full.

Annex 1: Classification Principles of Factory

1 Purpose

For the factory of explosion-proof electrical products, SITIIAS classifies them according to the comprehensive evaluation of quality related information such as their quality assurance ability, integrity and compliance status, and the quality status of their products. So that differentiated management shall be carried out, such as different methods and frequencies of post-certification surveillance and different expanding inspection. In order to achieve the control of certification risk, improve the quality and efficiency of certification activities, to ensure that certified products continue to meet the certification requirements. The classification of factories is only used as the basis for SITIIAS to manage factories. Factories shall not use SITIIAS classification management results in marketing, publicity and other activities, so as not to mislead consumers.

2 Classification Principles

Ex electrical products factories can be divided into four class: A, B, C and D. SITIIAS collects, analyzes, evaluates and saves information related to the quality of factories and certificated products, classifies factories according to the following basic principles, and reclassifies factories periodically or irregularly according to various kinds of information to achieve dynamic management.

The initial classification of factories is CLASS B; The classification results of factories shall be promoted step by step according to the order of D-C-B-A, and the time interval of promotion shall be at least one year.

Please see Attached Table 1 for specific basic principles of classification:

Table 1: Classification Principles of Production Factory

Class	Classification principles	Note
A	1. Initial factory inspection and follow-up inspection after certification in recent 2 years, and the inspection conclusion is "factory inspection passed" or "written verification passed"; 2. No nonconformance was found in the post-certification supervision and testing in the past 2 years, and all kinds of national and provincial quality supervision results were "qualified"; 3. The factory has good independent design ability, and owns testing resources to obtain standard accreditation qualification accordance with GB/T27025 (ISO/IEC17025) by the accreditation body admitted by CNAS/ILAC; 4. National Public Trust Network has no bad credit records 5. The enterprise has a high level of management, and the quality management system operates stably. 6. Other information related to the factory and the quality of the certified products.	This class is determined by a comprehensive risk assessment conducted by SITIIAS on the quality information collection and relevant information provided by the factory.
B	Other factories except class A, C and D.	
C	1. Non-conformance items that need "on-site verification" exist in initial factory inspection and post-certification inspection; 2 There is any media exposure of product quality problems (does not involve safety) and due to the factory‘s responsibility, but does not involve suspension, revocation of certification; 3. According to the comprehensive evaluation results of the quality information	

	related to the factory and the certified products, SITIIAS considers that it needs to be adjusted to class C.	
D	1. The initial factory inspection and the follow-up inspection conclusion after obtaining the certificate are classified to be "not passed"; 2. The result of supervised testing/surveillance inspection after obtaining the certificate is unqualified; 3. Refusal to inspect or supervised sampling without appropriate reasons; 4 Media exposure due to factory‘s responsibility, impact on product safety, can be directly suspended, revoked certification; 5. "Unqualified" items exist in national, provincial and other kinds of product quality supervision and spot check of mandatory product certification testing; 6. Unable to meet other mandatory product certification requirements, the certification has been suspended or revoked; 7. According to the comprehensive evaluation results of the quality information related to the factory and the certified products, SITIIAS considers that it needs to be adjusted to class D.	

Annex 2: Division Principle of Explosion-proof Electrical Product Unit

According to the requirements of CNCA-C23-01:2019 " Compulsory Product Certification Implementation Rules for explosion-proof Electrical", combined with the characteristics of explosion-proof electrical products, according to the type of protection, equipment classification, type of product, explosion-proof structure and safety parameters, etc., the application unit is divided. For the same product produced by the same manufacturer and different factories, or for the same product produced by different manufacturers and the same factory, the type test can only be carried out on the sample of one unit. For the products of other manufacturer/ factory, the documentation shall be provided for consistency verification.

1 Range of Compulsory Certification for Explosion-proof Electrical Products

See Table 3 Range of compulsory certification for explosion-proof electrical products.

2 Principle of Unit Division

In principle, the certification product unit is divided according to the device classification, type of protection, product type, explosion-proof structure and safety parameters of explosion-proof electrical products.

2.1 Product Types

Ex motors; Ex electric pump; Ex power distribution units; Ex switch, control and protection products; Ex starter; Ex transformer; Ex electric actuator, solenoid valve; Ex plug-in device; Ex monitoring device; Ex communication and signaling equipment; Ex air conditioning and ventilation equipment; Ex electric heating products; Ex accessories, Ex components; Ex instruments and meters; Ex sensor; Safety barrier; Ex instrument box.

2.2 Device Classification

Class I, II and III.

2.3 Type of Protection

Flameproof enclosures "d", increased safety "e", intrinsic safety "i", pressurized enclosure "p", liquid immersion "o", powder filling

"q", "n" type, encapsulation "m", and dust ignition protection by enclosure "t", and the combination of two or more of the above types of protection.

2.4 Explosion-proof Structure

See attached Table 2 for description of unit division elements.

2.5 Safety Parameters

See attached Table 2 for description of unit division elements.

Table 2: Description of Unit Division Elements

No.	Equipment Classification	Ex Type	Product Categories	Ex Structure	Safety Parameters *
1	Class I	Flameproof enclosures "d"	Ex motors; Ex electric pump; Ex power distribution units; Ex switch, control and protection products; Ex starter; Ex transformer; Ex electric actuator, solenoid valve; Ex plug-in device; Ex monitoring device; Ex communication and signaling equipment; Ex air conditioning	1) enclosure material 2) flameproof structure	1) Voltage, etc. 2) Current norm Circumference, power or capacity 3) Equipment protection level
	Class II				1) Voltage level 2) current range, power or capacity

			and ventilation equipment; Ex electric heating products; Ex accessories, Ex components; Ex instruments and meters; Ex sensor; Safety barrier; Ex instrument box.		
2	Class I	Increased safety "e"		1) enclosure material	1) Voltage, etc. 2) current range, power or capacity
	Class II			1) enclosure material	1) Voltage level 2) current range, power or capacity
3	Class I	Intrinsic safety "i"		1) enclosure material 2) power supply mode	1) Equipment protection level
	Class II				
	Class III			1) enclosure material 2) power	1) Equipment protection level

				supply mode	
4	Class I	Pressurized enclosure "p"		1) Built-in system	1) Voltage level 2) Current norm Circumference, power or capacity 3) Equipment protection level
	Class II				
	Class III			1) Built-in system	1) Voltage level 2) Current norm Circumference, power or capacity 3) Equipment protection level
5	Class I	Liquid immersion "o"		1) enclosure material 2) device type	1) Equipment protection level 2) Voltage level 3) Current norm Circumference, power or capacity
	Class II				
6	Class I	Powder		1)	1) Voltage

	Class II	filling "q"		enclosure material	level 2) current range, power or capacity
7	Class II	"n" type		1) enclosure material 2) protection type	1) Voltage level 2) current range, power or capacity
8	Class I	Encapsulation "m"		1) enclosure material	1) Equipment protection level 2) Voltage level 3) Current norm Circumference, power or capacity
	Class II				
	Class III			1) enclosure material	1) Equipment protection level 2) Voltage level 3) Current norm Circumference, power or capacity
9	Class III	Dust ignition protection by		1) enclosure material	1) Voltage level 2) Current norm

		enclosure "t"			Circumference, power or capacity 3) Equipment protection level 100 kw Rated power or less 500 kw rated Power is greater than the 500 kw, According to different work Rate level.
10	Class I/II	Composite types of protection		1) See corresponding Ex type	1) See corresponding Ex type
	Class I/III				
	Class II/III				
	Class I/II/III				

Description:

1. The products with the same device classification, type of protection, product type, explosion-proof structure and similar safety parameters or can be covered with the other should be divided into the same unit.

2. Explosion-proof structure and safety parameters should be selected appropriately according to the corresponding product type.

Table 3: Range of Compulsory Certification for Explosion-proof Electrical Products

No.	Product categories	Product range
1	Ex motors	1. All kinds of motor with center height ≤160mm or rated power ≤15kW;
		2.160mm < center height ≤280mm or 15kW < rated power ≤100kW of all kinds of motors;
		3.280mm < center height ≤500mm or 100kW < rated power rate ≤500kW of all kinds of motors;
		4. All kinds of motors with center height > 500mm or rated power > 500kW
2	Ex electric pump	1. All kinds of electric pumps with rated power ≤15kW;
		2.15KW < rated power ≤100kW of all kinds of electric pumps;
		3. All kinds of electric pumps with rated power > 100kW;
3	Ex power distribution units	1. Distribution box (cabinet);2. Power overhaul box;3. Junction box;4. Junction box; Power supply (box);6. Filter (box);7. Power compensation device;8. Rectifier (box);9. Power converter (switching device)
4	Ex switch, control and protection products	1. Switch (box, cabinet);2. Button (box);3. Circuit breaker;4. Control cabinet (box, machine, table);5. Relay;6. Operation(box, table, column);7. Protector (box);8. Protective equipment;9. Driller's floor;10. Trip device;11. Driver

No.	Product categories	Product range
		controller;12. Speed control device;13. Breaker (instrument);14. Remote control Transmitter (receiver);15. The chopper
5	Ex starter	1. Starter;2. Soft starter;3. Inverter (box);4. Electrical resistance
6	Ex transformer	1. Mobile substation;2. Transformer (box);3. Voltage regulator;4. The transformer
7	Ex electric actuator, solenoid valve	1. Electric actuator;2. Valve electric device;3. Electrical valve positioner;4. Electric valve;5. Solenoid valve;6. Electromagnet;7. Magnetic head;8. Electromagnetic coil;9. Electric stop valve;10. Electric cut-off valve;11. Control valve;12. Electric/gas converter; 13. Brake; 14. The driver
8	Ex plug-in device	1. Electric coupling;2. Plugs (including plugs and sockets);3. The latch switch
9	Ex monitoring device	1. Camera (instrument);2. Yuntai;3. Monitor;4. Monitoring (sub-) station;5. Repeater;6. Transmission interface;7. Video server;8. Display (instrument, screen, box);9. Computer, industrial control machine (including accessories);Sound and light (language, signal, static electricity) alarm device (device)
10	Ex communication and signaling equipment	1. Walkie-talkie;2. Loudspeaker (electric speaker);3. Telephone;4.Player;5. The words stand;Base station (base station);7. Exchange Machine;8. Optical end machine;9. Tandem machine;10.

No.	Product categories	Product range
		Signal coupler;11. Amplifier;12. Distributor;13. Extender;14. Network Road) terminal;15. Isolator;16. The speakers;17. Rbi (puller);18. Signal device;19. Electric bell (electric Flute);20. Communication interface;21. Signal device (instrument, box);22. Indicator;23. Network access device;24. Bridge);25. Drive;26. The gateway;27. Transmitter and receiver Machine (machine);28. Signal (photoelectric, data) converter
11	Ex air conditioning and ventilation equipment	1. Refrigeration (heat) air conditioning or unit; 2. Dehumidifier; 3. Fan coil unit; Fan; 4. 5. Heater; 6. Electric fan
12	Ex electric heating products	1. Electric heater;2. Electric heater;3. Electric heating belt;4. Electric tracing belt;5. Electric heating rod;Electric heating plate 7. Electric heating tube
13	Ex accessories, Ex components	1. Cable box;2. Distribution box;3. Sealing box;4. Flameproof shell; 5. Flexible connecting pipe;6. Cable introduction device; 7.Stuffing box; 8. Plastic fan (blade);9. Wiring terminal;10. Terminal sleeve;11. Pipe joint;12. Insulator
14	Ex instruments and meters	1. Collector (box);2. Counter;3. Encoder;4. Decoder;5. Card reader;6. Recognizer;7. Identification card;8. Identification card

No.	Product categories	Product range
15	Ex sensor	1. Photoelectric sensor;2. Speed sensor;3. Temperature (humidity) sensor;4. Status sensor;5. Sound (light) control sensor;6.Pyroelectric(infrared) sensor;7. Tension sensor;8.Smoke sensor;9. Pile coal (coal level) sensor;10. Touch sensor;11. Tear sensor;12. Off-track sensor;13.Throttle sensor;14.Voltage (current) sensor; 15. Angle sensor;16. Magnetic (Hall) sensor;17. Feed The sensor;18 proximity switch (sensor);19. The time delay spread Sensor;20. Start and stop (emergency stop) sensor;21. Material sensing; Position (displacement, stroke) sensor
16	Safety barrier	1. Zener safety gate;2. Isolation safety grating;3. Safety limiter (module);4. Safety coupler;5. Intrinsically safe power supply
17	Ex instrument box	1. Instrument box;2. Instrument panel;3. Instrument cabinet;4. Electricity meter box

Description:

1. If the product variety name is inconsistent with the product variety listed in this table but has the same function, it shall be classified into the corresponding product unit according to its function.

2 Unit division should also be in accordance with the " Compulsory Product Certification Catalogue Description and Setting table" CNCA issued and the the relevant resolutions of TC28 technical group.

3. For the company producing a certain explosion-proof electrical product also producing the Ex electrical product components, Ex fittings or Ex elements (such as Ex enclosures, Ex wiring terminals,

Ex junction boxes installed inside Ex air conditioners, Ex control box),if these Ex accessories are not sold separately, there is no need to obtain a separate compulsory certification certificate. If they are sold separately, they must be classified into the corresponding product unit to carry out application according to the attached table 2.

Annex 3: Control Requirements for Key Components and Materials

1 Control Requirements for Key Components and Materials

For each type of Ex electrical product, its key components and materials are divided into class A and class B.

According to the requirements of explosion-proof standards, the list of key components and materials of class A and class B for explosion-proof electrical mandatory products is listed according to different explosion-proof types (see Attached Table 4). The laboratory can add or reduce the components appropriately according to specific products. When applying for certification, the applicant shall describe the material, model, specification, drawing number, parameters, trademark, manufacturer, factory and other information of the corresponding key components according to the protection type of the product applied.

For the key components within the scope of compulsory product certification purchased in China, there shall be information of mandatory product certification. For key components within the scope of non-mandatory product certification, it should be verified whether they meet the requirements of the corresponding standards.

All components and Ex components (excluding Ex enclosures) within the SCOPE of CCC catalog that have obtained CCC certificate are key components of CLASS B (such as cable leading-in device).

Table 4: List of Key Components and Materials

Ex Type	Name of Key Components and Materials	Controlled Category
Flameproof Enclosures "d"	Enclosures, including but not limited to transparent parts, bonded parts and encapsulation components, undetectable channel elements, lead-in mounting seals, etc	A
	Fan and fan protection cover	B
	The battery	B

Increased Safety Type "e"	Enclosures and parts related to IP class, including but not limited to transparent parts, bonded parts and encapsulation components, undetectable channels, seals, etc	A
	Fan and fan protection cover	B
	The battery	B
	Electrical connector	A
	Protective component	B
	Insulation materials	A
	Heating wire for resistance heater	A
Intrinsic Safety "i"	Intrinsic safety-related components, such as piezoelectric devices, power transformers, intrinsic safety-related protective devices, batteries, etc.	A
	Enclosures and parts related to IP class, including but not limited to transparent parts, bonded parts and encapsulation components, undetectable channel elements, seals, etc.	B
	Insulation materials	B
	Adhesive or pouring compound	B
	Printed circuit board assembly	A
Pressurized Enclosure "p"/	Enclosures and parts related to IP class, including but not limited to transparent parts, bonded parts and encapsulation components, fire retardant elements, seals, etc	A
	The battery	B

	Safety device	A
	Built-in system	A
Liquid Immersion "o"	Enclosures and parts related to IP class, including but not limited to transparent parts, bonded parts and encapsulation components, undetectable channel elements, seals, etc	A
	Protection of the liquid	A
	Devices related to protection functions	A
Powder Filling "q"	Enclosures and parts related to IP class, including but not limited to transparent parts, bonded parts and encapsulation components, undetectable channel elements, seals, etc.	A
	Filler material	A
	Devices related to protection functions	A
	The battery	B
"n" Type	Enclosures and parts related to IP class, including but not limited to transparent parts, bonded parts and encapsulation components, undetectable channel elements, seals, etc.	A
	Battery (nR)	A
	Fan and fan protection cover	B
	Insulation material for stator winding	A
Encapsulation "m"	Housing and parts associated with IP class	A
	Encapsulation materials	A

	Protection device	A
	The battery	B
	Printed circuit board assembly	B
Dust ignition protection by enclosure "t"	Enclosures and parts related to IP class, including but not limited to transparent parts, bonded parts and encapsulation components, undetectable channel elements, seals, etc	A

2 Control Requirements for Key Components and Materials Validation Inspection

In order to verify the quality characteristics of key components and materials, the factory shall select appropriate control methods to ensure that the technical requirements of key components are continuously met and the final product meets the certification requirements. Appropriate control methods may include:

1) Key components within the compulsory product certification catalog, must obtain the CCC certificate, as long as these certificates are valid, during factory inspection, it’s ok that factory do not show the inspection report of key components and materials.

2) Key components that have obtained the voluntary certification recognized by compulsory certification of final product, as long as these certificates are valid, during factory inspection, it’s ok that factory do not show the inspection report of key components and materials.

3) If the key components are out of the scope of CCC certification and do not have obtained the voluntary certification recognized by compulsory certification of final product, they shall be confirmed and inspected regularly in order to meet the requirements in the following table:

Table 5: Inspection requirements of key components

Key Components and Materials	Check Items/Assessment Requirements	Frequency/Period
The Enclosures	Material composition/process document	1 time/year
	Static pressure test (flameproof enclosure)	
Fan and Fan Cover	Material composition/process document	1 time/year
Glass Transparent Part	Impact resistance /GB/T 3836.1	1 time/year
	Material composition/process document	1 time/year
Adhesive or Encapsulation	Material composition、performance index	1 time/year
The Seals	Material composition、performance index	1 time/year
Insulation Materials	Material composition/process document	1 time/year
Liquid for Protection	Material composition/process document	1 time/year
Filler Material	Material composition/process document	1 time/year

For other components/materials not mentioned in the above table, the factory shall develop its own control methods to ensure that the whole product complies with the requirements of certification standards. The inspection items in the list can be completed by the factory, the supplier or a competent third party. When key components are inspected by the supplier, the factory shall set clear requirements for the supplier, such as inspection frequency (period), items, standards, methods, acceptance criteria, etc. If factory's incoming inspection or supplier's outgoing inspection has covered periodic inspection items, these incoming inspection or supplier's

outgoing inspection may be regarded as periodic inspection.

3 Changes to Key Components and Materials

3.1 Changes to Class A key components and materials (see Attached Table 4)

When Class A key components and materials are changed (e.g. Change of the key components and materials for certified products, the manufacturers and factories of the key components and materials or the parameters of the key components and materials, etc.), the application for change should be submitted to SITIIAS, and the sample submission requirements determined by SITIIAS and/or the laboratory should be followed. Samples are sent to the laboratory by the applicant for testing.

3.2 Changes to Class B key components and materials (see Attached Table 4)

1) After technical parameters and materials/performance of Class B key components has changed, if technical parameters and performance is not lower than those the type test report confirmed, and does not change the structure of the product, factory may not provide samples to test, and certificate technical representative is responsible for confirming the changes, the factory shall maintain appropriate records; SITIIAS will conducts verification during post-certification supervision and validation test is needed if necessary.

2) For the change of the name of the manufacturer of key components/materials, the certificate technical representative of the factory can confirm and approve the key components within the scope of compulsory product certification based on the corresponding effective CCC certificate; For other key components, the business license and valid industrial and commercial change certificate shall be verified before and after the change. The factory shall keep corresponding records.

Annex 4: Quality Assurance Capability Requirements of the Factory for Compulsory Certification of Explosion-proof Electrical Products

0 Introduction

In accordance with the requirements of " Compulsory Product Certification Management Provisions", this document is formulated to guide the establishment of quality assurance capability of explosion-proof electrical products compulsory certification to ensure that products continue to meet the requirements of CCC certification. This document is one of the basis for establishing quality assurance capability and assigning SITIIAS to carry out on-site inspection.

The factory should combine the characteristics of product explosion-proof type, explosion-proof structure and production and processing, in order to ensure the consistency of the production of certified products and certified documents, establish and maintain the quality assurance ability in line with the requirements of this document. For the purpose of this document, "factory" means the applicant, manufacturer or factory who undertakes the corresponding responsibilities.

1 Responsibilities and Resources

1.1 Responsibilities

The factory shall specify the responsibilities, permissions and interrelationships of various personnel related to certification requirements, and shall designate the responsible person for explosion-proof quality in the organization's management level, regardless of this person’s other responsibilities, with the following responsibilities and permissions:

A) Ensure that the requirements of this document are effectively established, implemented and maintained at the factory;

B) To ensure consistency and conformity of product to the standards;

C) Use CCC certificate and mark correctly to ensure that the certificate status of products with CCC mark is continuously valid.

D) Responsible for keeping contact with SITIIAS, tracking the

changes of certification requirements and communicating them to relevant internal personnel or departments for implementation.

The person in charge of explosion-proof quality should be fully competent for their own work, and the person in charge of explosion-proof quality can also serve as the certification technical representative.

1.2 Resources

The factory shall be equipped with the necessary production equipment, inspection and test equipment to meet the needs of stable production in accordance with the requirements of certification standards; Should be equipped with the corresponding human resources, to ensure that the staff engaged in the product certification quality has the necessary ability; The necessary environment and facilities for production, inspection, testing and storage should be established and maintained.

For external resources to be leased, the factory shall ensure the continuous availability and correct use of external resources; The factory shall maintain records relating to external resources, such as contractual agreements, usage records, etc.

When major changes occur in production and inspection instruments and equipment, the factory shall carry out corresponding applicability assessment, calibration and testing to ensure that the changes do not affect the production requirements of certified products or are not lower than the capacity level of the original equipment, and keep corresponding records, and timely submit relevant materials to SITIIAS for filing.

2. Documents and Records

The factory shall establish and maintain documented procedures to ensure effective control of documents required for this document, necessary foreign documents, certification documents, production technical documents and records. Production documents such as drawings, samples, process documents and operation instructions used to guide production shall ensure the consistency of explosion-proof structure and safety parameters, and ensure the continuous validity of the documents. Product design standards or specifications shall not be lower than the requirements of the certification basis of the product.

Documentation procedures shall ensure that:

A) The Factory shall ensure the adequacy and suitability of the documents and use valid versions of the documents.

B) An implementation system shall be established to ensure that all drawings related to the production of explosion-proof products are consistent with the certification drawings.

C) The quality system shall ensure that the elements (explosion-proof key parameters) specified in the certification documents are not modified.

D) Documented procedures shall ensure that when a common certification pattern associated with multiple certificates is changed, all related products are changed simultaneously.

E) If the factory also produces non-explosion-proof equipment, the system shall have technical documents that clearly identify and distinguish different products.

F) The correctness of technical documents or factory's related documents to be transferred to a third party shall be ensured.

G) Manufacturers shall have documented procedures to verify the validity of all CCC certificates, standards, applicable laws and regulations and other external specifications on an annual basis.

The factory shall ensure clear, complete and traceable records as evidence of product compliance with specified requirements.

Records relating to the quality and traceability of explosion-proof products shall be kept for no less than the product life cycle (usually 10 years), and records of at least 3 inspection cycles shall be obtained during this inspection. Factories should identify and save important documents related to product certification and quality information, such as certification documents (drawings and specifications), type test report, factory inspection results, CCC certificate status information (effective, suspension, revocation, cancellation, etc.), authentication information change approval, supervision and sampling inspection report, product quality complaints and processing results, etc.

3. Procurement and quality control of key component

3.1 Procurement Control

The factory shall establish, evaluate and maintain a list of qualified

manufacturers /factories of purchased parts and purchase from them. The factory shall keep records of purchase and use of key component, such as purchase list, inbound and outbound warehouse list, standing account, etc.

For critical purchase parts (see list of key components for Compulsory Certification of Explosion-proof Products), the factory shall identify and specify its technical requirements in the purchase documents, which shall also ensure that the final product meets the certification requirements.

The manufacturer shall evaluate the supplier's ability to ensure compliance with specified requirements before selecting suppliers that provide purchased parts (products, processes or services) related to key certification parameters. One or more of the following methods can be used to evaluate the supplier's ability to provide products, processes and services that meet the requirements:

-- The supplier has the quality assurance ability of compulsory explosion-proof product certification

-- Use appropriate control methods to conduct on-site evaluation of suppliers, and form documents to keep effective on-site evaluation records.

The assessment should consider the following elements:

-- The criticality of a product, process, or service

-- Degree of difficulty or uncertainty in the manufacturing process

-- Location of supplier, effectiveness of follow-up communication

-- Whether the supplier subcontracts the products, processes or services

-- Assess whether the service capability of the calibration / verification metrology service provider can meet the requirements;

-- Suppliers shall be reviewed on a regular basis, and the period shall not exceed one year.

-- Suppliers that have not been purchased from for more than one year shall be re-evaluated as new suppliers before selection. External purchases that may affect the explosion-proof type of protection and cannot be verified by inspection (e.g., casted intrinsic safety circuits) shall be periodically inspected by SITIIAS or controlled by the factory to demonstrate product conformity. When SITIIAS needs to

audit suppliers that affect key parameters of certification, the factory shall arrange this.

The procurement document shall clearly describe what is required in detail in the technical document (e.g., process control, test or exam).

For parts whose conformity cannot be tested after manufacture (e.g., casted intrinsic safety circuits), specific quality control procedures, raw materials and process related to the parts shall be indicated in the purchasing information. The factory defines the scheme in the form of documentation, e.g., technical specifications specified in special purchase orders, to ensure that the documentation can be traced back to the order. If the factory does not provide the above documents in subsequent orders, the factory shall have procedures to ensure that the supplier has a copy of the current documents and that they are complete.

3.2 Quality Control of Purchased Parts

The factory shall establish and maintain documented procedures to complete verification or inspection of technical requirements for purchased parts at the time of purchase and maintain records. For the quality characteristics of purchased parts, the factory shall select appropriate control methods to ensure that the requirements specified in the technical documents are continuously met, and the final products meet the certification requirements, and keep relevant records. Appropriate controls may include:

A) The factory shall obtain CCC certificate or ensure the validity of the status of voluntary product certification recognized as compulsory certification for final products.

B) For purchased parts that do not have the relevant certificates, the periodic confirmation inspection shall comply with the requirements of Annex 3 to these Rules.

C) The factory shall formulate its own control plan, and the control effect shall not be lower than the requirements of (a) or (b) above. When purchasing key components from distributors and traders, the factory shall take appropriate measures to ensure the consistency of purchased parts and continue to meet their technical requirements.

For the products produced by the subcontractor, the factory shall control them as purchased parts to ensure that the subcontracted

products continue to meet the specified requirements.

For self-produced key component, control it according to 4 Below.

4 Production Process Control

A) The factory shall identify the processes that affect the quality of certified products (referred as key processes), and the identified key processes shall meet the specified requirements. Key process operators should have the corresponding ability; Control of key processes should ensure conformity of certified products with standards and product consistency; If the key process without documentation can not ensure the quality of certified products, the corresponding work instructions should be formulated to make the production process under control.

B) If environmental conditions are required during production, the factory shall ensure that the working environment meets the specified requirements.

C) When necessary, the factory shall monitor and measure appropriate process parameters.

D) The factory shall establish and maintain a maintenance system for the production equipment to ensure that the capacity of the equipment continues to meet the production requirements.

E) If necessary, the factory shall inspect, monitor and measure the products and their characteristics at the appropriate stage of production as required by regulations to ensure the conformity of the products with the standards and product consistency.

5 Routine Inspection and/or Validation Inspection

The factory shall establish and maintain documented procedures to control routine inspection and/or qualification inspection of final products; The documented procedures shall comply with the requirements of certification standards, type test reports or/and Annex 8 of these Rules, and the procedures shall include items, contents, methods, judgments, etc.

The factory shall conduct and maintain relevant inspection records. The factory shall ensure that the capabilities of external organizations meet the inspection requirements and keep the evaluation results of relevant capabilities, such as laboratory accreditation certificates.

6 Test Instruments and Equipment

6.1 Basic Requirements

The factory shall be equipped with sufficient inspection and test equipment to ensure that the equipment capacity used in the procurement, production and manufacturing, and final inspection and testing can meet the inspection and test requirements for the mass production of certified products.

The inspection and test personnel should be able to use the equipment correctly, master the inspection and test requirements and implement them effectively.

6.2 Calibration and Verification

The inspection and test instruments and equipment used to determine that the certified products produced meet the specified requirements shall be calibrated or verified according to the specified cycle, The calibration or verification cycle can be set according to the use frequency of instruments and equipment, previous calibration, etc; For internal calibration, the factory shall specify the calibration method, acceptance criteria and calibration period, etc. Calibration or verification shall be traceable to national or international benchmarks .The calibration or verification condition of the instrument should be able to be used and identified easily by the management personnel. The factory shall keep records of calibration and verification of instruments and equipment.

For calibration or verification activities entrusted to external organizations, the factory shall ensure that the capabilities of external organizations meet the requirements of calibration or verification, and keep the relevant capability evaluation results.

Note: For key monitoring and measuring devices in production process control, the factory shall manage them according to the product certification implementation rules.

6.3 Checking Functions

When necessary, the factory shall carry out functional inspection of the routine inspection equipment according to the regulations.

When it is found that the functional inspection results cannot meet the requirements, it should be able to be traced back to the tested products; If necessary, these products shall be re-tested. The factory shall specify the actions to be taken by the operator in the event of functional failure of equipment.

The factory shall keep records of the results of functional inspection and the actions taken when the equipment fails to function.

7 Control of Nonconforming Products

A) For nonconforming products found in procurement, manufacturing, inspection and other links, the factory shall take measures such as identification, isolation and disposal to avoid the unexpected use or delivery of the nonconforming products. Reworked or repaired products should be reinspected.

B) The factory shall analyze the causes and take appropriate corrective measures for the non-conformance information from external sources such as national and provincial supervision and random inspection, product recall, customer complaints and complaints. The factory shall keep records of nonconformance information, cause analysis, disposal and corrective action of certified products.

C) When the factory learns that its certified products have major quality problems (such as unqualified national and provincial supervision and random inspection, etc.), it shall timely inform SITIIAS.

8 Internal Quality Audit

The factory shall establish documented internal quality audit procedures to ensure ongoing compliance with the factory's quality assurance capabilities, product consistency, and product compliance with standards. The factory shall take appropriate corrective and preventive measures for the problems found in the audit. The factory shall keep the results of internal quality audit.

9 Change and Consistency of Certified Product

The control plant shall establish and maintain documented procedures to control changes (such as process, production conditions, key components, and product structure) that may affect product consistency and conformity to standards. The procedures shall comply with specified requirements. Changes should be approved by SITIIAS or Ex certification representative before implementation, the factory should keep relevant records.

The factory shall control product consistency from applicable quality links such as product design (design change), process and resources, procurement, production and manufacturing, inspection,

product protection and delivery to ensure that products continue to meet the requirements of certification standards.

10 Product Protection and Delivery

The product protection, such as marking, handling, packaging, storage and protection, carried out by the factory in the process of purchasing, manufacturing and inspection, shall meet the requirements. When necessary, the factory shall control the delivery process of the products according to the specified requirements.

11 CCC Certificate and Logo

The factory's management and use of CCC certificate and logo should comply with the "Compulsory Product Certification Management Provisions", "Compulsory Product Certification logo application management Requirements" and other provisions. For uniformly printed standard CCC logos or CCC logos added by means of printing, molding, etc., the factory shall keep use records. CCC logo or release shall not be applied to the following products:

A) products in the compulsory product certification catalogue that have not been certified;

B) the change after being certified shall be confirmed by SITIIAS, but the product is not confirmed;

C) products beyond the validity period of certification;

D) products listed in certificates that have been suspended, revoked or cancelled;

E) nonconforming products.

Annex 5: Factory Demarcation Code and Covering Principle of Explosion-proof Electrical Products

The factory definition code and coverage principle are shown in Table 6.

Table 6: Factory Demarcation Code of Explosion-proof Electrical Products

Factory Demarcation Code	The Meaning of Representative	Covering Principle
01	Exd	/
02	Exp	/
03	Exe	/
04	Exi	/
05	Exn	/
06	Exo	/
07	Exq	/
08	Exm	/
10	Ext	/
13	Compound	It can cover the single or combined explosion-proof type of products contained therein

Annex 6: Requirements of the Certification Technical Representative of the Factory

1 Responsibilities and Relevant Requirements of Certification Technical Representative of Explosion-proof Electrical Product Factory

1.1 No matter what other duties the certification technical representative performs in the organization, he/she shall have the following responsibilities:

1) Understand the laws, regulations, standards and requirements of products to be certified and their key components and materials;

2) Familiar with the principle, structure, key components and materials, parameters and performance requirements of the products to be certified, as well as the correlation between the parts;

3) Familiar with product consistency management and product change management requirements;

4) Organize the review and determine the needs of change and implement change activities;

5) Maintain records of the implementation of their duties.

1.2 The certification technical representative shall be a formal employee, engaged in technical work, or engaged in production, quality and other work and have the corresponding technical ability, competent for the responsibility requirements of the certification technical representative.

1.3 The certification technical representative shall be appointed by the organization and have relevant authority, so that he/she can be motivated to perform his/her duties.

1.4 When using OEM to apply for certification, the certification technical representative of the factory shall be authorized by the manufacturer or selected by the manufacturer organization.

1.5 In principle, the certification technical representative shall only hold the post of the organization and shall not concurrently hold the post of the certification technical representative of other organizations.

1.6 The certification technical representative establishes documented simplified procedures to identify applicable key

components and materials and determine change control methods.

1.7 The certification technical representative controls the timing of changes, approves and implements changes.

1.8 The certification technical representative shall maintain records of changes to key components and materials and communicate change information within the organization for compliance control.

1.9 The certification technical representative shall be recognized base on ability, and shall be re-recognized when the change occurs and recorded in SITIIAS.

2 SITIIAS Management of Certification Technical Representative

2.1 SITIIAS is responsible for the assessment, identification and approval of the certification technical representative, and keeping records.

2.2 SITIIAS is responsible of issuing certificates for certification technical representative qualified, and publicity of qualified personnel list.

2.3 When the laws, regulations, rules, standards and requirements related to the certificated products are materially changed, the certification technical representative needs to be re-certified according to the notice from SITIIAS.

2.4 SITIIAS reserves the right to disqualify certification technical representatives who are unable to perform their duties or failure to perform duties in good faith.

Annex 7: Application of Testing by Using Testing Resources of Factory

1 Scope of Application

On the premise that the factory has equipment resources and human resources that meet the requirements of relevant standards, according to the relevant provisions of SITIIAS, the testing resources of the factory can be used to carry out relevant activities of on-site designated testing items under the following circumstances.

-- Type tests are limited to:

A) The samples are large in volume and mass, with high transportation cost and difficult transportation;

B) A product that is only one batch and will not be produced in the future;

C) Other special circumstances.

-- Supervised sampling testing after obtain the certificate

-- Supplementary difference test for certificate extension and change by the same factory of the same project using factory resources to test continuously for five years, samples should be sent to the designated laboratory for testing to avoid systemic risk in principle.

2 Implementation

According to the comprehensive situation of the equipment resources, human resources and soft resources in the laboratory of the factory, combined with the characteristic of the product, the sample testing can be divided into TMP and WMT by using the factory testing resources.

2.1 TMP Method

Qualified laboratory engineers sent by SITIIAS shall use the testing equipment of the factory’s laboratory for testing, and the factory shall arrange testing personnel to assist. The test report shall be issued by laboratory audit and approval.

2.2 WMT Method

Qualified laboratory engineers sent by SITIIAS witnessed the completion of all or part of the type test by the factory 's laboratories using their own equipment. Factory 's laboratory testing personnel

are responsible for issuing original records and drafting test reports in a specified format together with the witness laboratory engineer. The test report shall be issued by laboratory's audit and approval.

3 Conditions for Testing Using Testing Resources of the Factory

3.1 Factories Classified as A and B

Where the classification result of the factory is A or B, and the testing resources of the factory or manufacturer applying for certification are 100% self-owned and approved by CNAS/ILAC.

3.2 Using Testing Resources of Factory

Only the laboratory of the factory which has been audited and assessed by SITIIAS (organize laboratory to participate) to meet the following conditions can use the testing resources of the factory for testing.

3.2.1 TMP Method

A) The classification results of factory should be A or B, whose design, manufacturing, risk control and quality management are in the advanced level of the industry;

B) The quality manual of the factory shall have provisions about the use of factory testing resources and consistent with the requirements of CCC certification procedures;

C) The laboratory of the factory shall meet the requirements of GB/T27025 (ISO/IEC17025).

D) The laboratory of the factory shall have the instruments and equipment with the accuracy required by the standards of relevant testing items and shall be well controlled. (Comply with GB/T27025 (IEC17025) part of the technical requirements for all the testing equipment requirements).

3.2.2 WMT Method

A) The classification results of factory should be A or B, whose design, manufacturing, risk control and quality management are in the advanced level of the industry;

B) The quality manual of the factory shall have provisions about the use of factory testing resources and consistent with the requirements of CCC certification procedures;

C) The laboratory of the factory meets the GB/T27025 (ISO/IEC17025) capacity requirements and has been approved; The scope of approval shall include the test standards to be performed (see Chapter 2, "Certification Criteria ").

D) The laboratory of the factory shall have the precision instruments and equipment required by the relevant testing project standards and be well controlled. (Comply with all requirements of GB/T27025 (ISO/IEC17025) for testing equipment);

E) Inspectors of factory's laboratory shall be familiar with product structure and testing standards and have certain testing experience;

F) The test record format of factory's laboratory can meet the laboratory's requirements of test information for on-site work.

4. Evaluation of Testing Resources of Factory

1) The laboratory of the factory shall submit an application for capacity assessment to SITIIAS, together with the results of the self-examination conducted by the factory in accordance with Clause 3 above.

2) SITIIAS will review the application materials

SITIIAS will make acceptance decisions for application meeting the requirements in 2 working days, and arrange on-site audit for laboratory of the factory; Otherwise, SITIIAS will makes a rejection decision with reasons.

3) After receiving the application, SITIIAS will organize the audit team to conduct on-site audit on the laboratory of the factory and keep the corresponding audit records. If the audit is qualified, the laboratory resources of the factory can be used for testing.

4) SITIIAS shall conduct regular supervision (at least once a year, or in combination with the annual supervision of the factory) on the approved laboratories of factories, and organize the laboratories of the factories to participate in comparative tests, to ensure the accuracy and effectiveness of test results, and maintain the qualification.

For TMP mode, there should be at least one tester of factory working with laboratory engineer to conduct on-site test. After the on-site test, the laboratory shall issue the original testing record sealed by the laboratory of the factory. The test report shall be issued

by the laboratory, in which it shall be noted that the test was carried out using the laboratory of the factory.

For WMT mode, after the on-site test, the tester of factory shall issue the original test record and the laboratory engineer shall sign for confirmation. The test report shall be issued by the laboratory, in which it shall be noted that the test was carried out using the laboratory of the factory.

On-site tests performed or witnessed by laboratory engineers shall be conducted in accordance with standard requirements.

Technical disputes in on-site tests shall be settled by the engineers of factory and laboratory through consultation. If necessary, report to SITIIAS. The laboratory shall ensure the authenticity, correctness and traceability of test results.

5) Using testing resources of factory for sample testing does not exempt, reduce or transfer the responsibility of designated laboratories stipulated in the *Regulations on Management of Compulsory Product Certification* and SITIIAS for testing results and certification results.

Annex 8: Testing Requirements for Quality Control of Explosion-proof Electrical Factory

Routine inspection is 100% inspection of certified products, usually at the final stage of production, in order to eliminate non-conforming products caused by contingency factors in the production process. Routine inspection allows the equivalent and rapid method to be used after confirmation. For special products, sample inspection may be carried out for routine inspection in accordance with the requirements of product certification standards.

The designated test is to evaluate the consistency of certified products and the conformity of products and standards. The audit team extracts certified products at the factory site and selects items according to the certification standards. The test is carried out by the staff of the factory.

Validation inspection is a sampling inspection conducted to verify that a certified product continues to conform to the certification standards. When confirming the inspection, if the factory does not have the testing ability, it can entrust an external laboratory with the ability to carry out the inspection. At this time, the factory shall maintain evidence of the ability of external laboratories to perform the corresponding tests. In principle, the inspection should be carried out in batches or at least once a year.

Table 7: Testing Requirements for Quality Control of Explosion-proof Electrical Factory

Ex type	Standard	Tests	Routine test (When applicable)	Verification Test (When applicable)	Designated Test (When applicable)
Flameproof Enclosures "d"	GB/T 3836.1 GB/T 3836.2	Structural inspection (marking, grounding installation, etc.)		√	
		Overpressure test	√		√
		Measurement of flameproof surface parameters		√	√
Increased Safety "e"	GB/T 3836.1 GB/T 3836.3	Structural inspection (identification, grounding installation, creepage distance and electrical clearance measurement, etc.)		√	

		Dielectric test	√		√
		Turn to turn over voltage test	√		√
		Battery insulation dielectric strength test	√	√	√
Intrinsic Safety "i"	GB/T 3836.1 GB/T 3836.4	Structural inspection (sign, structure, etc.)		√	
		Routine test of diode safety gate	√		√
		Routine test of reliable transformers	√		√
Pressurized Enclosures "p"	GB/T 3836.1 GB/T 3836.5	Structural inspection (identification, grounding installation		√	
		Pressure and flow test		√	
		Function test	√		√
		Leakage test	√		√
		Tests for an	√		√

		infallible containment system			
		Test for a containment system with a limited release	√		√
Liquid Immersion "o"	GB3836.1 GB/T3836.6 GB/T 3836.1 GB/T 3836.6	Structural inspection (identification, grounding installation		√	
		Overpressure test for sealed enclosures	√		√
		Pressure relief test for sealed enclosures	√		√
		Overpressure test for unsealed enclosures	√		√
Powder Filling "q"	GB/T 3836.1 GB/T 3836.7	Structural inspection (marking, grounding installation, etc.)		√	
		Box body	√		√

		routine pressure test			
		Dielectric strength test of filling material	√		√
"n" Type	GB/T 3836.1 GB/T 3836.8	Structural inspection (identification, grounding installation, etc.)		√	
		Dielectric strength test	√		√
		Routine test of restricted breathing enclosure	√		√
		Routine test of temperature rise	√		√
		Temperature calculation	√		√
Encapsulation "m"	GB/T 3836.1 GB/T 3836.9	Structural inspection (identification, grounding installation,		√	

		isolation spacing, clean space, pouring seal thickness, etc.)			
		Visual inspection	√		√
		Battery insulation dielectric strength test	√		√
		Dielectric strength test	√		√
Dust ignition protection by enclosure "t"	GB/T 3836.1 GB/T 3836.31	Structural inspection (marking, grounding installation, joint surface, etc.)		√	