

Country 国家	Greater China 大中华区
Safety Mark: 安全标志:	TÜV Rheinland China Mark TÜV 莱茵中国标志
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Revision date: 修订日期:	2023-03-23



德国莱茵TÜV
关键词 1
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1 Purpose 目的

This document describes the procedure for preparation, submittal, evaluation, and certification of products as defined in the scope for China Mark Approval of TÜV Rheinland (China) Ltd..

本文件阐述了莱茵检测认证服务(中国)有限公司（TRCHN）中国标志认证产品范围内规定的准备、提交、评估和认证程序。

2 Scope 范围

This document apply for the certification of PV module, this module is used for long periods of time in general outdoor weather conditions.

本规则适用于地面用晶体硅太阳能电池组成的光伏组件的性能认证，该组件是在一般室外气候条件下长期使用的。

3 Type of Approval 认证模式

地面用晶体硅光伏组件的性能认证模式为：型式试验+初始工厂检查+获证后监督。

The type for the certification of PV module is: products testing + initial factory inspection + follow-up surveillance

The certification including but not limited 认证的基本环节包括：

- A、Application 认证的申请
- B、Products testing 产品型式试验
- C、Initial factory 初始工厂检查

D、 Certification result assessment and approval 认证结果评价和批准

E、 Follow-up surveillance 获证后的监督

4 The application of Certification 认证申请

4.1 Unit partition of the certified products 认证产品单元划分

In principle, according to the product model apply the certification. The same manufacturer, the same model, but different factory, the products should be divided into different application unit, products testing will be conducted on the samples from one factory. The same materials, the same packaging technology of the PV module can be as one application unit. 原则上按产品型号申请认证。同一制造商、同一型号但生产厂不同的产品应分为不同的申请单元，型式试验仅在一个工厂的样品上进行。光伏组件的材料相同、封装工艺相同可作为一个申请单元。

4.2 Application documents 申请材料

- A、 application form 申请表
- B、 business license 营业执照
- C、 factory inspection report which approved by TÜV (*if have*) TÜV莱茵批准的光伏产品的工厂检查报告（如果有）
- D、 test report of TÜV Rheinland or any other TÜV Rheinland appointed ISO/IEC 17025 laboratory (*if have*) TÜV莱茵测试报告或任何其他TÜV莱茵指定的符合ISO/IEC 17025要求的实验室出具的型式试验报告（如果有）
- E、 Rating label (*if not in the test report*) 额定值标签（如果不在试验报告中的话）
- F、 Critical Component Data Form 关键零部件数据表（CDF）
- G、 Constructional drawing 结构图
- H、 Bill of Material “材料清单”(BOM)
- I、 All relevant safety certificates of components 所有安全相关零部件的证书
- J、 User’s manual in English or Chinese language 中文或英文用户手册
- K、 Photo-documentation (*if not in the test report*) 照片文件（如果试验报告中未包括）

5 Products testing 型式试验

5.1 Sample 样品

5.1.1 Send sample 送样原则

TRCHN select representative sample form the application unit. When the application unit only have one product model, send this model as the sample. When series products apply the certification, should select the representative product from the series as the main tested sample, others as the secondary tested sample, the requirements of the secondary tested sample in the appendix 1. TRCHN从申请认证单元中抽取代表性样品。申请单元中只有一个型号的，送本型号的样品。以系列产品申请认证时，应

从系列产品中选取具有代表性的产品作为主检产品，主检产品应该是该系列产品中对性能影响最不利的产品，其余型号产品为附检产品，附检样品送样要求见附件1。

5.1.2 Sample quantity 样品数量

Applicant sent the sample to TÜV Rheinland laboratory or any other TÜV Rheinland appointed laboratory. The number of the sample in the appendix 1. 申请人负责把样品送到TÜV莱茵实验室或任何其他TÜV莱茵指定的实验室。样品数量见附件1。

5.1.3 Disposition of the sample and records 样品及记录处置

After testing finished and test report was issued, the relevant testing records and the relevant materials were maintained by laboratory, sample should be disposed according to the requirements of TÜV Rheinland. 试验结束并出具实验报告后，有关试验记录和相关材料由实验室保存，样品按照TÜV莱茵有关规定处置。

5.2 Products testing 型式试验

5.2.1 Acc. Standards 依据标准

The standards for the accredited PV module 对获认可范围内的地面用晶体硅光伏组件产品适用标准如下：

IEC 61215:2005 <Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval>

IEC 61215:2005 《地面用晶体硅光伏组件-设计鉴定和定型》

Or 或者

IEC 61215-1:2016 <Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1: Test requirements>

IEC 61215-1:2016 《地面用光伏组件-设计鉴定和定型 第1部分：试验要求》

IEC 61215-1-1:2016 <Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-1: Special requirements for testing of crystalline silicon photovoltaic (PV) modules>

IEC 61215-1-1:2016 《地面用晶体硅光伏组件-设计鉴定和定型 第1-1部分：晶体硅光伏组件测试的特殊要求》

IEC 61215-2:2016 <Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 2: Test procedures>

IEC 61215-2:2016 《地面用光伏组件-设计鉴定和定型 第2部分：试验程序》

5.2.2 Testing items and requirements 试验项目及要求

Safety and performance indicators of PV module should satisfy the requirements of 5.2.1. 地面用晶体硅光伏组件的性能指标应满足 5.2.1 标准中的要求。

5.2.3 Testing method 试验方法

Testing conducted according to the method specified in 5.2.1 按照 5.2.1 标准中的规定的方法进行试验。

5.2.4 Period of Products testing 型式试验周期

Period of products testing is start from the receipt of samples and the fee of testing was paid, normal is 6 months (if have any non-conformities, the corrective or re-testing should not be included in the period) 型式试验周期从收到样品和检测费用算起，通常为 6 个月（因检测项目不合格，企业进行整改和重新检验的时间不计算在内）。

5.2.5 Testing result evaluation 试验结果判定

Products testing should compliance with the requirements of 5.2.1, if have any non-conformities, should allow the applicant provide the new sample after the corrective action. The number of the new sample and the items of the re-testing are decided by the non-conformities, the period of the corrective action is no longer than 6 months. If have any non-conformities in the re-testing, should decide the products do not compliance with the certification requirements. 型式试验应符合 5.2.1 标准的要求，产品如有部分试验项目不符合标准的要求，允许申请人整改后重新提交样品进行试验。重新试验的样品数量和试验项目视不合格情况决定，整改期限不超过 6 个月。如仍有任何 1 项不符合标准要求时，则判定该认证单元产品不符合认证要求。

5.2.6 Testing report 试验报告

Products testing conduct in TÜV Rheinland or any other TÜV Rheinland appointed laboratory, and issue the test report according to the defined form. After the certification approval, provide one test report to the applicant. 由 TÜV 莱茵实验室或任何其他 TÜV 莱茵指定的实验室对样品进行试验，并按规定格式出具试验报告。认证批准后，为申请人提供一份试验报告。

5.3 CDF 关键零部件要求

To ensure the compliance of the certified products, when the specification, model, manufacturers, production factories of the critical component/materials were changed, the licenses holder should make the change request in time, and send the sample for the testing(or provided the written documents for confirmation), the certificate can be used after the approval. 为确保获证产品的一致性，关键零部件/材料的技术参数、规格型号、制造商、生产厂发生变化时，持证人应及时提出变更申请，并送样进行试验（或提供书面材料确认），经批准后方可在获证产品中使用。

6 Initial factory inspection 初始工厂检查

6.1 Inspection content 检查内容

The factory inspection include the inspection of the factory quality assurance and the products compliance 工厂检查的内容为工厂质量保证能力和产品一致性检查。

6.1.1 Inspection of the factory quality assurance 工厂质量保证能力检查

Conduct the inspection according to the <the factory quality assurance of TÜV China mark> and the inspection requirements of the factory quality control in appendix 1. 按《TÜV 莱茵中国标志认证工厂质量保证能力要求》和附件 1 中工厂质量控制检验要求进行检查。

6.1.2 Inspection of the products compliance 产品一致性检查

In the factory inspection, should inspect the products compliance on the production site, the major is the following: 工厂检查时, 应在生产现场检查申请认证产品的一致性, 重点核查一下内容:

- A、 The identification of the product should compliance with the information of the products testing report 认证产品的标识应与型式试验报告上所标明的信息一致;
- B、 The construction of the product should compliance with the products testing report 认证产品的结构应与型式试验报告中的一致;
- C、 The critical component/materials of the product should compliance with the products testing report 认证产品所用的关键零部件/材料应与型式试验报告中的一致;
- D、 At least one product model should be selected for the inspection of the products compliance. During the factory inspection, the factory should assure the applied products on production, and the inspector witness the performance testing on-site. 应至少抽取一个规格型号做一致性检查。工厂检查时, 工厂应保证申请认证的产品在生产状态, 对产品能采取现场见证试验。

6.1.3 The inspection of the factory quality assurance and the products compliance should cover all application products and workplaces. 工厂质量保证能力检查和产品一致性检查应覆盖申请认证的所有产品和加工场所。

6.2 The man-day of initial factory inspection 初始工厂检查人日数

In general, after the products testing passed, continue the initial factory inspection. In necessity, products testing and factory inspection can conduct together. Factory inspection should be done within one year after completing products testing, otherwise products testing should be done again. During the initial factory inspection, factory should produce the products that involved in the applied certification scope. 一般情况下, 产品型式试验合格后, 再进行初始工厂检查。必要时, 产品型式试验和工厂检查也可同时进行。工厂检查原则上应在产品型式试验结束后一年内完成, 否则应重新进行产品型式试验。初始工厂检查时, 工厂应生产申请认证范围内的产品。

The man-day decided by the scale of the application factory, the man-day as the follow:

工厂检查人日数为 1 人日。

6.3 The result of initial factory inspection 初始工厂检查结论

Inspection team (inspector) is responsible for the result of the inspection report. If the inspection result is no-pass, Inspection team (inspector) should report to technical supporting and TRCHN. If the non-conformity was found during the factory inspection, the factory should conduct the

corrective action within the time limit, TRCHN verify the result of the corrective action in suitable method. If the factory doesn't conduct the corrective action within the time limit or verify the result of the corrective action is no-pass, the factory inspection is classified as no-pass. 检查组（检查员）负责报告检查结论。工厂检查结论为不通过的，检查组（检查员）直接向项目助理和 TRCHN 报告。工厂检查存在不符合项时，工厂应在规定期限内完成整改，TRCHN 采取适当方式对整改结果进行验证。未能按期完成整改的或整改不通过的，按工厂检查不通过处理。

7 Evaluation and approval of the certification 认证结果评价与批准

7.1 Evaluation and approval of the certification 认证结果评价与批准

TRCHN organize the evaluation for the result of the products testing and the factory inspection. After evaluation, issue the certificate to the applicant, every application unit with one certificate. TRCHN 组织对型式试验结论和工厂检查结论进行综合评价。评价合格后，向申请企业颁发产品认证证书。每一个申请认证单元颁发一份认证证书。

The same products, accept the result of the testing report and factory inspection report for the other TÜV's voluntary product certification, should be approved by the certifier and indicate the reason. 同样产品，采信已经获得 TÜV 莱茵颁发的自愿性产品认证证书的型式试验报告和工厂检查报告结论，型式试验报告原则上不超过 12 个月，如超过 12 个月需由签证管批准，并注明缘由；工厂检查报告必须在 12 个月内，超期不能采用。

7.2 Lead-time 交付周期

After finishing the products testing and factory inspection, and compliance with the certification requirements, TRCHN will issue the certificate within two weeks when all the documents are provided. 完成型式试验和工厂检查后，对符合认证要求的，将在提供所有文件之后 2 周颁发认证证书

7.3 Termination the certification 认证终止

When the products testing is disqualification or the factory inspection is no-pass, TRCHN make the unqualified decision, and terminate the certification. If continue the certification after the termination, should start from the new application. 当型式试验不合格或工厂检查不通过，TRCHN 做出不合格决定，终止认证。终止认证后，如要继续申请，按新申请进行。

8 Follow-up surveillance 获证后监督

The follow-up surveillance include the surveillance inspection of the factory quality assurance and the products compliance 获证后监督的内容包括工厂产品质量保证能力的监督检查和获证产品一致性检查。

8.1 Surveillance inspection 监督检查时间

8.1.1 Surveillance frequency 监督检查频次

In general, after finishing the initial factory inspection, follow-up surveillance should be arranged within 12 months, and the timespan of every follow-up surveillance is no more than 12 months.

Basis on the production situation, TRCHN can adjust the time of follow-up surveillance. If one of the following occurs, TRCHN would increase the frequency: 一般情况下，初始工厂检查结束后，12 个月内应安排监督检查，每次监督检查间隔不超过 12 个月。依据产品生产的实际情况，TRCHN 可以按年度调整监督检查时间。若发生下述情况之一可增加频次：

- A、The certified products have the serious quality problem or user make the serious complaint and it was found to be a product problem:获证产品出现严重质量问题或用户提出严重投诉并经查实为产品问题的；
- B、TRCHN has enough reason query the certified products are not compliance with the certification standards. TRCHN 有足够理由对获证产品与认证依据标准的符合性提出质疑时；
- C、Has enough reason show the manufacturer or factory change the organization chart, production condition, quality management system and other which can affect the products compliance 有足够信息表明制造商、生产厂由于变更组织机构、生产条件、质量管理体系等而可能影响产品符合性或一致性时；

8.1.2 The man-day of follow-up inspection 监督检查人日数

The man-day decided by the scale of the application factory, the man-day as the follow: 依据申请监督检查人日数为 1 人日。

8.2 Follow-up surveillance content 监督检查的内容

The content of the follow-up surveillance include the inspection of the factory quality assurance and the products compliance. Conduct the surveillance inspection according to the <the factory quality assurance of TÜV China mark> and the inspection requirements of the factory quality control in appendix 1.监督检查的内容为工厂质量保证能力和产品一致性检查。依据《TÜV 莱茵中国标志认证工厂质量保证能力要求》和附件 1 中工厂质量控制检验要求对工厂进行监督检查。前次工厂检查不符合项的整改情况是每次监督检查的必查内容。

8.3 The result of follow-up inspection 监督检查结论

Inspection team (inspector) is responsible for the result of the inspection report. If the inspection result is no-pass, Inspection team (inspector) should report to technical supporting and TRCHN. If the non-conformity was found during the factory inspection, the factory should conduct the corrective action within the time limit, TRCHN verify the result of the corrective action in suitable method. If the factory doesn't conduct the corrective action within the time limit or verify the result of the corrective action is no-pass, the factory inspection is classified as no-pass.检查组（检查员）负责报告检查结论。工厂检查结论为不通过的，检查组（检查员）直接向项目助理和 TRCHN 报告。工厂检查存在不符合项时，工厂应在规定期限内完成整改，TRCHN 采取适当方式对整改结果进行验证。未能按期完成整改的或整改不通过的，按工厂检查不通过处理。

8.4 Result evaluation 结果评价

TRCHN organize the evaluation for the result of the follow-up surveillance. After evaluation, issue the certificate of the factory inspection to the applicant, and the certification certificate maintain valid. If the follow-up surveillance is no-pass, follow the rules of item 9.3. TRCHN 组织对监督检查结论进行评价，评价合格的，颁发工厂检查通过证书，认证证书保持有效。当监督检查不通过时，按照 9.3 规定执行。

9 Maintain, Change, suspend, restore, cancel and withdraw the certification 认证证书保持，变更，暂停，恢复，注销和撤销

9.1 Maintain the certification 保持认证

9.1.1 Certificate cycle 证书的有效期

The certification cycle of China Mark certificate is five years, re-certification is necessary after certificate expires.本方案覆盖产品的认证周期是五年，五年有效期满后，需进行再认证。

9.1.2 Certified products changing 认证产品的变更

9.1.2.1 Application for Changing 变更的申请

When the content in the certificate is changed, or when the design, mechanism parameters, façade or critical component/materials involved in the safety and/or performance of the products are changed, license holder should make a change request to TRCHN. 证书上的内容发生变化时，或产品中涉及安全和/或性能的设计、机构参数、外观、关键零部件/材料发生变更时，证书持有者应向 TRCHN 提出变更申请。

9.1.2.2 Evaluate and approve the changing 变更的评价和批准

According to the evaluation of the changed content and the provided materials, TRCHN decide to make the change or not. If need the products testing and/or factory inspection, make the change after passing the products testing and factory inspection. In principle, the change evaluation should be based on the certified product that has been conducted the initial products testing. The products testing and/or factory inspection follow the rules of TRCHN. TRCHN 根据变更的内容和提供的资料进行评价，确定是否可以变更。如需安排试验和/或工厂检查，则试验合格和/或工厂检查通过后方能进行变更。原则上，应以最初进行产品型式试验的认证产品为变更评价的基础。试验和工厂检查按照 TRCHN 的规定执行。

Conformance to the requirements, approve the change and issue the new certificate.对符合要求的，批准变更，并换发新的认证证书。

9.2 Extending scope of certification 扩大认证范围

9.2.1 Extending process 扩大的流程

The license holder want to extend the certification scope that is the same certification unit with the certified products, should start from the certification application and explain the extending request. TRCHEN review the compliance between the extending scope with the certified products, verify the validity of the original certification results for the extending scope, conduct products

testing and/or factory inspection for discrepancies and/or extending scope, conformance to the requirements, issue the new certificate according to the requirements of the license holder. 认证证书持有者需要增加与已获得认证的产品为同一认证单元的产品认证范围时，应从认证申请开始办理手续，并说明扩大要求。TRCHN 核查扩大范围产品与原认证产品的一致性，确认原认证结果对扩大范围产品的有效性，针对差异和/或扩大的范围做补充试验和/或工厂检查，对符合要求的，依据认证证书持有者的要求换发证书。

In principle, the extending evaluation should be based on the certified product that has been conducted the initial products testing.原则上，应以最初进行产品型式试验的认证产品为扩展评价的基础。

9.2.2 Sample 样品要求

License holder should provide the relevant technical documents of the extending scope, if need the new sample, send the sample and conduct the discrepancy testing according to the chapter 5. 持证人应先提供扩大范围产品的有关技术资料，需要送样时，按本方案第 5 章的要求选送样品或进行差异试验。

9.3 Suspension, Cancellation, Withdrawn and Restoring of certification 认证暂停、注销、撤销和恢复

In any circumstance, finds that a certified product is not in conformity with the essential requirements set out in the China Mark Scheme and / or Testing and Certification Regulation, TRCHN's certifier will suspend, cancel or withdraw related certificates.无论通过何种方式发现认证产品不符合中国标志认证方案和/或检测认证条例规定的基本要求，TRCHN 签证官将暂停、注销和撤销相应证书。

The corrective action has to be reported and completed by the certificate holder, prior to the permission by China Mark certifier to claim the certified status again and to use the certification mark. The certifier will restore the certificate in valid according to the certification process of China Mark scheme. When certificate was suspended more than 6 months, the certificate shall be cancelled or withdrawn, or the corrective action has not completed as a waiver application, the certificate shall be withdrawn. In case of cancellation and withdrawn, the original certificate is requested to be returned to TRCHN in timely manner.在 TRCHN 签证官允许恢复认证状态和使用认证标志前，证书持有者必须报告并完成纠正行动。签证官依照中国标志认证流程规定，将证书恢复为有效状态。对于暂停超过 6 个月，将注销或撤销相应证书；未完成纠正的，视为自愿放弃，对相应证书予以撤销。如果注销和撤销，需要及时将原证书退回给 TRCHN。

In case of suspension, cancellation or withdrawn, the license holder shall be informed accordingly by written stating the reasons for suspension, cancellation and withdrawn, and remark the certificate in its register as invalid. The license holder stop to use the certification mark on the products manufactured since the date of suspension, cancellation or withdrawn and will not place certified products on the market during the stated period. Potentially defective certified products are subject to corrective action including recall where appropriate. 当证书暂停，注销和撤销时，相关证书持有者将得到书面通知，说明暂停，注销和撤销的原因，并在记录中标记该证书无效。自暂停，注销和撤销日期起，不得将认证标志

用于所制造的产品上，且在所述期限内，不得继续销售认证产品。对可能存在缺陷的认证产品应立即采取纠正行为，包括召回（如果适用）。

10 Certification mark 认证标志

The China Mark is the exclusively used by TÜV Rheinland (China) Ltd. such as: TÜV莱茵中国标志由是莱茵检测认证服务（中国）有限公司获证客户独家所有。例如：



- A、Generic Certipedia ID can be assigned for each Chin mark license holder.可以为每个中国标志认证证书持有人编制Certipedia唯一性号码。
- B、The China Mark can be displayed on the rating label, package or user manual.中国标志可以显示在等级标签、包装或用户手册上。
- C、There are no specific dimensional requirement of the mark, it should be visible and identified the information of test mark by naked eye as long as the proportions are kept.只要保持一定比例，没有具体的标志尺寸要求，标志可以由肉眼看见并识别试验标志信息。
- D、There is no color scheme requirement for mark as long as the outline and artwork of the test mark is kept.只要保持试验标志的轮廓和原图，没有标志配色方案要求。

The mark shall be used as stipulated in Testing and Certification regulations as well as the attachment to this document TR China Mark Certification Scheme.标志应与测试和认证规则以及本文件附件德国莱茵中国标志认证方案中规定的标志相同。

11 Cost 收费

The certification cost follow the relevant rules of TRCHN. 认证费用按TRCHN有关规定收取。

附件1

地面用晶体硅光伏组件安全性能工厂质量控制检验要求

依据标准	送样数量	工厂质量控制检验要求	
		试验项目	例行检验
IEC 61215:2005 或 IEC 61215-1:2016 IEC 61215-1-1:2016 IEC 61215-2:2016	代表性组件13片（1片备件）； 同一认证单元中最大功率等级样品和最低功率等级样品各2块。	1、外观检查	必须
		2、标准测试条件下的性能（功率）	必须
		3、绝缘试验	必须
		4、接地连续性试验	必须
		5、湿态漏电流试验	可选

注：

例行检验是在生产的最终阶段对生产线上的产品进行的100%检验，通常检验后，除包装和加贴标签外，不再进一步加工。例行检验允许使用经验证后确定的等效、快速的方法进行。工厂须具备完成例行检验的设备。