供应商质量
SUPPLIER QUALITY
手册
MANUAL

概述
OVERVIEW

供应商应秉持着高度诚信以及对社会和环境负责任的态度来经营业务。
Suppliers are expected to conduct business with a high degree of integrity and in a socially and environmentally responsible manner.

本供应商质量手册为服务于沃茨或其子公司或部门的生产材料或服务供应商设定了质量期望和质量要求。 这里的生产材料包括并入沃茨总成件、产品或制成品（无论这些产品是否带有沃茨商标）的产品和组件。
This Supplier Quality manual establishes quality expectations and quality requirements for suppliers of production material or services to Watts or its subsidiaries or divisions. Production material includes products and components that are incorporated into a Watts assembly or product, or finished goods, whether or not private-labeled with a Watts brand.

目录
Table of Contents

APPENDICES

20. 表格：可登陆沃茨水工业供应商网站获取。
FORMS: Can Be Found On The Watts Water Technologies Supplier Web site.
http://www.wattswater.com/Suppliers
http://www.wattswater.com/Suppliers

a. 生产部件审批流程 - WW-PPAP-101至WW-PPAP-113
Product Part Approval Process- WW-PPAP-101 thru WW-PPAP-113
（版本 03-20-14)
(Rev. 03-20-14)

b. 供应商偏差要求（版本 04-15-11)
Supplier Deviation Request (Rev. 04-15-11)

c. 供应商纠正措施要求（版本 01-27-10)
Supplier Corrective Action Request (Rev. 01-27-10)

1. 供应商质量方针
1. SUPPLIER QUALITY POLICY

沃茨的服务宗旨就是提供创新性产品，以保证住宅用水、商业用水以及公共机构用水的效率、安全和质量。 我们的供应商是我们公司发展的重要组成部分，通过不断提升供应给沃茨的产品、组件与服务的质量、可靠性和总成本，从而为全球客户提供解决方案。

It is the policy of Watts to be our customer's first choice to provide innovative products to control the efficiency, safety, and quality of water within residential, commercial, and institutional applications. Our suppliers are a key part of our efforts to provide solutions to our customers around the world by continuously improving the overall quality, reliability, and total cost of products, components and services supplied to Watts.

2. 目的
2. PURPOSE

本手册旨在传达沃茨的公司经营理念。这一理念与供应商质量系统和绩效的质量以及最初和持续发展的需求息息相关，从而让沃茨持续保持全球行业领先地位，生产创新性产品，以保证住宅用水、商业用水以及行业公共机构用水的效率、安全和质量。

This manual is intended to communicate Watts' general philosophy regarding quality and our initial and on-going requirements for supplier quality systems and performance that will allow Watts to maintain its world-wide leadership position in providing innovative products to control the efficiency, safety, and quality of water within residential, commercial, and institutional applications for industries.

3. 适用范围
3. SCOPE

本供应商质量手册适用于所有为沃茨提供生产材料或服务的供应商。 这里的生产材料包括并入沃茨总成件、产品或制成品（无论这些产品是否带有沃茨商标）的产品和组件。

This Supplier Quality Manual applies to all suppliers that provide production material or services to Watts. Production material includes products and components that are incorporated

以保证住宅用水、商业用水以及行业公共机构用水的效率、安全和质量。 我们的核心领导能力主要体现在，我们为客户提供世界一流的高质量、可靠的产品与服务。 我们的供应商在协助我们实现并保持产品的高质量与可靠性方面发挥了不可或缺的作用。

quality of water within residential, commercial, and institutional applications since Watts started operations in 1874. A critical component of our leadership is the world-class quality and reliability of the products and services that we provide to our customers. Suppliers to Watts play an integral role in helping us achieve and maintain our world-class quality and reliability.

当今市场上有关任何产品的开发与制造的问题均要求沃茨供应商保持高效的文件化质量体系。通过这个体系来沟通、识别、协调和控制生产优质产品所必需的所有关键活动。

The issues surrounding the development and manufacture of any product in today's market require that Watts' suppliers maintain an effective *documented quality system* which communicates, identifies, coordinates, and controls all key activities necessary to produce a quality product.

这个系统的理念就是持续进步，并强调避免出现次品以及降低供应链中的变更和浪费现象。

The system must be based on the philosophy of continuous improvement, *emphasizing defect prevention and the reduction of variation and waste in the supply chain.*

客户在产品质量、可靠性与成本方面的期望越来越高，为了满足这一要求，供应商在生产过程中所采用的流程必须始终满足客户要求的公差和规格。 而通过检验、分类、报废与返工来达到一致性要求，既不能实现成本效益，也无法带来产品的最佳质量水平。 通过使用统计学方法或防误措施来控制机器和流程，是实现我们最低成本、最高质量与最佳交付目标的关键所在。

In order to meet our customers' rising expectations in terms of quality, reliability and cost, the processes our suppliers use in the manufacture of their products must allow our suppliers to consistently satisfy required tolerances and specifications. Achieving conformance to our requirements through

into a Watts assembly or product, or finished goods, whether or not private-labeled with a Watts brand.

沃茨单个工厂可能会设有其他的工厂特殊要求，并将设立具体流程来实施这些要求。 若上述要求之间存在冲突，则将实施更严格的要求。
Individual Watts plants may have additional plant specific requirements, and will establish specific processes for carrying out these requirements. If a conflict exists between the requirements, the more stringent requirements will apply.

4. 质量理念
4. QUALITY PHILOSOPHY

自1874年美国沃茨水工业集团正式运营之后，公司及其子公司、分部和附属公司一直都是世界领先的创新性产品制造商，
Watts Water Technologies, Inc., including its subsidiaries, divisions, and affiliates, has been the world's leading manufacturer of innovative products to control the efficiency, safety, and inspection, sorting, scrap, and rework is neither cost effective nor does it result in optimum quality levels. Machines and processes that can be controlled through the use of *statistical methods or mistake proofing methods* are crucial to achieving our goals for lowest cost, highest quality, and best delivery.

但是如果沃茨想要保持优质水质的龙头地位，那么持续性地改善产品和流程则显得尤为重要。 我们希望沃茨的所有供应商都能不断改善他们的产品。
Continuous improvement in both products and processes is critical if Watts is to maintain world-wide leadership in the water quality marketplace. All suppliers to Watts are expected to continuously strive for improvements in the products they supply.

5. 期望
5. EXPECTATIONS

要想在供应商和客户之间建立积极的关系，最基本的一点就是保证思路清晰的沟通并充分了解客户期望。 沃茨为供应商们定义了如下与质量有关的期望要求。

The foundation for any positive suppliercustomer relationship starts with clear communication and an understanding of customer expectations. Watts defines these quality-related expectations for its suppliers below.

5.1 所购产品与服务应符合既定规格与要求：
5.1 Purchased Products and Services Shall Comply with Established Specifications and Requirements:

- 适用于商品或特定部件的工程规格和/或可靠性要求。
  Engineering specifications and / or reliability requirements that apply to the commodity or specific part.
- 适用于产品或服务的材料规格。
  Material specifications that apply to the product or service.
- 适用于特定产品或服务的图纸说明。
  Drawings that apply to the specific product or service.
- 规格说明中未明确规定的行业标准。
  Industry standards not explicitly called out in specifications.
- 在面临要求产品审查或干预的情况时，应遵守文件化生产件批准程序（PPAP）。
  Situations requiring review or intervention shall follow the documented Production Part Approval Process (PPAP).
- 变更与偏差批准。
  Approval of changes and deviations.
- 基于采购的变更协调。
  Coordination of changes through purchasing.
- 产品和服务必须100%符合所有要求。
  Product and services must meet 100% of all requirements.

5.2 供应商必须要求做到：
5.2 Suppliers are Required to:

验收质量标准以及测试要求。
quality standards for acceptance, and testing requirements.

5. 建立变更控制系统，可及时、准确地对变更作出反应。
   Have a change control system that reacts to changes in a timely and accurate fashion.

6. 建立合适的质量体系，以解决设计、制图控制、合格认证、预生产活动以及持续进行的生产中出现的问题。
   Have a quality system in place that addresses design, drawing control, qualification, and pre-production activities, as well as on-going production.

7. 维持程序、产品和服务文件。
   Maintain process, product and service documentation.

8. 开展与本文档所示内容相似的供应链、期望与控制要求，以确保所有供应产品的完整性，包括保持对原料和组件供应商的充分控制。
   Deploy to their supply chain, expectations and controls similar to those presented in this document to ensure the integrity of the overall product supplied including maintenance of adequate controls over their suppliers of raw material and components.

9. 待沃茨审计或拜访结束后，制定并执行具体的改善计划（如适用）。
   Generate and implement specific improvement plans following Watts audits or visits, when applicable.

10. 帮助解决与供应商产品和服务相关的问题，包括但不限于：
    Assist in problem resolution related to the supplier's products and services including but not limited to:

    - 提供产品或服务正确使用方面的建议。
      Providing advice in the proper use of the product or service.
    - 调查除已知的供应商缺陷之外的涉及与其他组件产生相互作用的问题。
      Investigating problems that involve

1. 明确地审查并知晓与所供产品或服务相关的所有要求。
   Explicitly review and know all requirements related to the product or service provided.

2. 请遵循规定的程序。
   Follow prescribed procedures.

3. 如果对所述要求有不明白的地方，或不不清楚沃茨系统中的产品使用情况，请致电沃茨。
   Contact Watts when requirements are misunderstood or unclear regarding the use of their product within the Watts system.

4. 就一切情况而论，若要实施任何可能对产品外形、适配、功能、交换或可靠性造成影响的变更，请事先征得书面批准。 批准应包括制造程序、
   In all cases, acquire written approval prior to implementing any changes that may impact form, fit, function, interchangeability or reliability. This shall include manufacturing processes, interaction with other components, not just known supplier defects.

11. 具备专业知识和资源，以便提供高效的根本原因分析并采取纠正措施与预防措施。
    Have the expertise and resources to perform effective root cause analysis and to take corrective and preventive action.

12. 对任何以及所有可能对所供应的产品的质量、可靠性、安全性以及设计和/或生产、或本手册所述的任何其他事项造成负面影响的情况进行通知。
    Provide notification of any and all situations that may negatively impact the supplied products quality, reliability, and safety; design and/ or production; or any other matter described in this manual.

13. 负责劣质产品对沃茨及其客户造成的影响。
Be accountable for the impact of poor quality on Watts and its customers.
14. 建立一个生产件批准程序，包括根本原因和纠正措施元素。
Have a Production Part Approval Process which includes root cause and corrective action elements.

5.3 供应商必须能够证明
5.3 Suppliers Must Be Able To Demonstrate
符合如下：
Compliance With:

1. 设计、性能与可靠性要求。
Design, performance and reliability requirements.

2. 过程控制与能力要求。
Process control and capability requirements.

3. 所有文件化要求
All documented requirements

沟通
Communications

一般情况下，应采用以下联络点：
In general the following contact points should be used:

- **主要联系人 - 沃茨采购员是与沃茨采购相关所有事项的主要联系人。**
Primary Contact – The Watts buyer is the primary contact for all matters regarding Watts purchasing.
- **产品/零件质量 - 有关生产件批准程序的问题，请联系PPAP文件所列人员。**
Product/Part Quality – For issues regarding the Production Part Approval Process (PPAP) contact the person listed on the PPAP document.

6. 与供应商之间的正确关系　沃茨的道德规范

7. 供应商行为原则
7. PRINCIPLES OF SUPPLIER CONDUCT

概述
OVERVIEW
美国沃茨水工业集团致力于将诚信经营理念扩展到多元化和全球供应基地。 为确保供应商以高度诚信的态度和负责任的方式进行业务，沃茨希望其所有供应商都遵循这些原则规范来经营他们的业务。 此外，供应商还需要熟悉供应商和分包商的业务实践，并确保遵循本文件所述原则进行运营。 如果未能遵守这些原则，那么沃茨可能会终止与他们的业务合作。 特殊供应商合同可能会包含针对部分或全部这些问题的更为具体的条款。
Watts Water Technologies' commitment to integrity extends to its diverse and worldwide supply base. To ensure that suppliers conduct business with a high degree of integrity and in a responsible manner, all of Watts' suppliers are expected to conduct their business in a manner consistent with these Principles. Suppliers are also expected to be familiar with the business practices of their suppliers and sub-contractors and ensure they operate within the Principles outlined herein. Failure to abide by these principles may result in discontinuance of business relationships with Watts. Particular supplier contracts may contain more specific provisions addressing some or all of these issues.

关键要求
KEY REQUIREMENTS

业务和财务记录
Business and Financial Records
供应商与沃茨都必须保留供应商与沃茨的业务相关的所有事项的准确记录。 这包括所有费用、付款以及守时方面的准确、恰当的记录，当供应商向沃茨提供与政府之间的业务或互动相关的服务或提供产品时，这点显得尤为重要。 若出现任何错误或疏忽，应立刻告知沃茨以进行调解。
Both the supplier and Watts must keep accurate records of all matters related to the supplier's business with Watts. This includes the proper and accurate recording of all expenses, payments, and time keeping records, and is particularly critical when a supplier is performing

6. PROPER RELATIONSHIPS WITH SUPPLIERS Watts Code of Ethics

沃茨通过为员工设定非常具体的义务，以恪守公司的行为守则。
Watts holds its employees to a code of conduct with very specific obligations.

沃茨还拥有极为严格的政策，以管理员工收取商业礼物的行为。
Watts also has very restrictive policies governing receipt of business gifts by its employees.

我们要求供应商要了解这些政策，从而避免将沃茨员工置于可能违反这项政策的处境之中。 可登录我们的官网http://www.watterwater.com，网站上的“投资者关系”可获取本公司的“商业行为准则”。
We ask that our suppliers be cognizant of these policies, and refrain from putting Watts employees in situations that may lead to violation of this policy. The company’s Code of Business Conduct is available in the “investor relations” section of our website at http://www.watterwater.com.

services or supplying goods to Watts relating to business or interactions with governments. Errors or omissions should be promptly brought to the attention of Watts for reconciliation.

不正当款项
Improper Payments

在包括美国在内的众多国家，贿赂与回扣均被视为非法行为并遭受刑事处罚。 严禁向政府官员、沃茨员工或代表沃茨的代理商进行贿赂，及提供回扣和不正当报酬。 在某些地区，尽管这类活动未违反当地法律，但是这项禁令也同样适用；并且供应商应极力打击任何形式的腐败行为，包括任何形式的勒索和贿赂。
Bribery and kickbacks are illegal and subject to criminal penalties in many countries, including the United States. Bribes, kickbacks and similar payments to government officials, Watts employees or agents acting on Watts’ behalf are strictly prohibited. This prohibition also applies in areas where such activity may not violate local law, and Suppliers should work against corruption in all its forms, including extortion and bribery of any form

童工和强迫劳动力
Child and Forced Labor

沃茨永远不会聘用童工。 供应商应遵守当地的童工保护法，仅雇用那些符合当地最低法定年龄要求的工人。 在当地法律不健全的情况下，供应商不得雇用15岁以下的儿童。 沃茨也不会参与或支持使用强迫劳动力或非自愿劳动力，并且也不会从使用强迫劳动力或非自愿劳动力的供应商处购买材料或服务。 所有供应商应确保他们的行为不会激发别的供应商使用强迫劳动力、强制劳动力或童工。

Watts will not engage in or support the use of child labor. Suppliers are expected to comply with applicable local child labor laws and employ only workers who meet the applicable minimum legal age requirement for their location. In the absence of local law, suppliers shall not employ children under the age of 15. Watts also does not engage in or support the use of forced or involuntary labor, and will not purchase material or services from a supplier utilizing forced or involuntary labor. All Suppliers should ensure their practices do not encourage the use of forced, compulsory, or child labor.

主要期望
KEY EXPECTATIONS

环境、健康和安全
Environment, Health & Safety

沃茨尊重环境以及员工的健康和人身安全，并且在遵循适用法律与法规的前提下进行业务运营。 供应商在进行业务运营时，应保护环境，支持事故预防，最大限度地避免潜在健康风险，并遵循公司业务运营国家的所有适用环境、健康与安全相关的法律与法规。 供应商应支持对环境挑战采取的预防措施，主动承担更多的环境责任，并鼓励开发和使用环境友好型技术。

Watts respects the environment and the health and safety of its employees and conducts its operations in compliance with applicable laws and regulations. Suppliers are expected to conduct their operations in a way that protects the environment and supports accident prevention and minimizes exposure to health risks, and to comply with all applicable environmental, health and safety laws and regulations in the countries in which they operate. Suppliers should support a

与此同时鼓励消除整个供应链中就业和职业方面的歧视现象。 此外供应商在其影响范围内应支持与尊重国际人权的保护，并保证不滥用人权。

occupation throughout the supply chain. Suppliers should also support and respect the protection of international human rights within their sphere of influence and make sure they are not complicit in human rights abuses.

利益冲突
Conflicts of Interest

沃茨员工应以公司利益为出发点来行事。因此，不得和与这一出发点相冲突的任何供应商建立金融或其它方面的关系。 业务之外的朋友关系不可避免，也是可以接受的。但供应商应注意，不得利用任何私人关系来影响沃茨员工的商业判断。如果供应商员工与沃茨员工之间有亲属关系（配偶、父母、兄弟姐妹、祖父母、子女、孙子女、岳父岳母或公婆关系等），或者如果供应商与沃茨员工之间存在任何其它可能导致利益冲突的关系，则该供应商应将实情告知沃茨，或确保该员工将实情告知沃茨。

Employees of Watts should act in the best interest of the Company, and therefore should have no relationship, financial or otherwise, with any supplier that might conflict, or appear to conflict, with the employee's obligation to act in the best interest of Watts. Friendships outside of the course of business are inevitable and acceptable, but suppliers should take care that any personal relationship is not used to influence the Watts employee's business judgment. If a supplier employee is a family relation (spouse, parent, sibling, grandparent, child, grandchild, mother- or father-in-law, or same or opposite sex domestic partner) to an employee of Watts, or if a supplier has any other relationship with an employee of Watts that might represent a conflict of interest, the supplier should disclose this fact to Watts or ensure that the supplier employee does so.

送礼、宴请和娱乐
Gifts, Meals and Entertainment

沃茨员工不得接受供应商赠送的超过普通或名义价值的任何赠礼、宴请和娱乐。 普通的商业宴请和表示感激的小礼物，比如节假日期间赠送礼物篮通常是可以接受的，但是供应商不得向沃茨员

precautionary approach to environmental challenges, undertake initiatives to promote greater environmental responsibility, and encourage the development and use of environmentally friendly technologies.

工作条件，薪酬
Work Conditions, Compensation

沃茨向员工支付具有竞争性的工资。 供应商应遵守所有适用工资与工时的相关法律和法规，以管理员工薪酬和工作时间。 沃茨支持就业多样性与平等就业机会。 不容许在工作场所出现非法歧视行为。 供应商应遵守与雇用和雇佣惯例歧视相关的所有适用当地法律，并为员工提供安全的工作环境，

Watts pays employees a competitive wage. Suppliers are expected to comply with all applicable wage and hour labor laws and regulations governing employee compensation and working hours. Watts supports diversity and equal opportunity in employment. Unlawful discrimination in the workplace is not tolerated. Suppliers are expected to comply with all applicable local laws concerning discrimination in hiring and employment practices, and to provide a safe work environment for their employees, while encouraging the elimination of discrimination in respect of employment and

工提供旅游机会、奢华娱乐招待或昂贵礼物。 不得赠送现金或现金等价物，比如礼品卡。

Employees of Watts are discouraged from accepting anything more than modest or nominal gifts, meals and entertainment from suppliers. Ordinary business meals and small tokens of appreciation such as gift baskets at holiday time generally are fine, but suppliers should avoid offering Watts employees travel, extravagant entertainment, frequent meals or expensive gifts. Gifts of cash or cash equivalents, such as gift cards, are never allowed.

保密信息
Confidential Information

沃茨致力于遵守专有信息、保密信息和私人信息相关的适用法律。 供应商应遵守有关沃茨专有信息、机密信息与私人信息的保护、使用与披露管制方面的适用法律，并且在将客户专有信息、机密信息与私人信息提供给供应商时，应尊重这些信息。
Watts is dedicated to complying with applicable laws concerning proprietary, confidential and personal information. Suppliers are expected to comply with all applicable laws and regulations governing the protection, use and disclosure of Watts proprietary, confidential and personal information, and to respect the proprietary, confidential and personal information of its customers where such information is provided to the supplier.

联系方式
CONTACT US

获取更多有关供应商行为原则方面的信息，请联系沃茨供应管理代表人员。
For inquiries relating to the Principles of Supplier Conduct, please contact your Supply Management representative at Watt.

此外，可以通过以下机密方式提出您的疑问或顾虑：
Questions or Concerns may also be raised using one of the following confidential options:

电子邮件：ethics@watts.com
By email: ethics@watts.com

免费热线：1-877-792-8878
By calling toll-free: 1-877-792-8878

发送信件至：
By Mail:
法务部
Legal Department
美国沃茨水工业集团
Watts Water Technologies, Inc.
马萨诸塞州 北安多弗 栗树街815号
815 Chestnut Street

9. 供应商质量审批流程
9. SUPPLIER QUALITY APPROVAL PROCESS

本章节确定并说明了沃茨供应商整个生产周期各个方面的一般资格要求。 每个供应商向沃茨提供部件的场所应设有质量体系结构，能满足沃茨的需求，以确保供应链的可持续性。 须对具体的制造过程和/或个别部件进行质量认证，以确保部件制造流程合格、准确。
This section identifies and explains the general qualification requirements for suppliers to Watts by covering all aspects of the production cycle. Each supplier location providing parts to Watts shall have a quality system structure that meets Watts' requirements in order to ensure a sustainable supply chain exists. Specific manufacturing processes and / or individual parts may be qualified in order to ensure that parts are made properly.

批准程序涵盖以下三个方面：
The approval process covers three areas:

1. 执行供应商资格认证能保证供应商具备基本的正确系统，来产生高质量部件，能尽可能的降低成本，并且履行作为一名供应商应承担的各种辅助义务，比如采取纠正措施。
   Supplier Qualification ensures that the supplier has basic systems in place to produce parts of consistent quality, be capable of reducing cost over time and can perform the various ancillary duties of a supplier such as corrective action.
2. 部件质量认证能保证部件满足我们的技术/性能需求。
   Part Qualification ensures that the part is capable of meeting our technical / performance needs.
3. 生产资格认证能保证具体、正确的生产过程能生产出高质量的部件。
   Production Qualification ensures that the specific manufacturing process in place will produce a part of consistent quality.

沃茨会通过给定部件采购的相关情况来确定具体的适用要求。

邮编：01845
North Andover, MA 01845
美国
USA
传真：1-978-688-2976
By Fax: 1-978-688-2976

8. 供应商选择
8. SUPPLIER SELECTION

在征求供应商报价之前并且在供应商安排期间，沃茨会对潜在供应商进行评估，评估因素包括供应商的才能、能力、诚信、财务状况、地理位置、绩效、可靠性、产品质量、交付以及客户与供应商之间的整体关系。
Ability, capacity, integrity, financial status, geographic location, performance, reliability, quality of product, delivery and overall customer-supplier relation are all factors considered by Watts when evaluating potential suppliers prior to soliciting quotations and during the term of our supplier arrangements.

沃茨必须确保新的供应商能够保持成本效益或其他竞争优势。
Watts must be assured that new suppliers will be able to deliver consistently cost or other competitive advantages.

Circumstances surrounding the procurement of a given part will be used by Watts to determine what specific requirements are applicable.

上述情况包括但不限于：
The circumstances include, but are not limited to:

- 新部件或新设计。
  New part or design.
- 新供应商。
  New supplier.
- 新工厂或现有供应商的制造场地。
  New plant or manufacturing location of an existing supplier.
- 外形、适配性或功能变更。
  Changes in form, fit, or function.

沃茨会采用生产件批准程序来定义与传达
The Production Part Approval Process (PPAP) is used by Watts to define and communicate

供应商生产给定部件必须要满足的具体质量要求。
specific qualification requirements that a supplier must meet for a given part.

- 供应商或沃茨须在采购过程阶段准备好生产件批准程序。
  The PPAP will be prepared by the supplier or Watts and provided early in the sourcing process.
- 供应商应对生产件批准程序进行审查，以确保了解所有具体要求，随后在完成的PPAP文件上签字并发送至沃茨。
  Suppliers shall review the PPAP to ensure that all specific requirements are understood, then sign and return the completed PPAP to Watts.
- 供应商可通过生产件批准程序发起/响应。
  The supplier can initiate / responds via the Production Part Approval Process (PPAP).

使用生产件批准程序能：
Use of the PPAP will:

- 促进供应商与沃茨之间的沟通。
  Help facilitate communication between the supplier and Watts.
- 确保供应商了解沃茨的具体质量要求。
  Ensure the supplier understands Watts specific quality requirements.
- 确保供应商掌握必要信息来制定准确的报价。
  Ensure the supplier possesses the necessary information to develop accurate quotations.

9. 供应商资格要求
9. SUPPLIER QUALIFICATION REQUIREMENTS

9.1 质量体系
9.1 Quality System

所有供应商应保持有效的文件化质量体系，保证沟通、识别、协调与控制生产优质产品所必需的所有关键活动。

ISO / TS 16949	质量管理
ISO / TS 16949	Quality Management
	体系 - 汽车
	Systems - Automotive
	要求
	Requirements

沃茨保留如下权利：
Watts reserves the right to:

- 验证供应商质量体系（通过拜访或全面审计）。沃茨采用的标准审计方式是内部审计。
  Verify Supplier quality systems (this may take the form of a visit or a full audit.) The standard audit utilized by Watts is the Self Audit.
- 验证供应商对适用质量标准的一致性。
  Verify a supplier’s conformance to an applicable quality standard.
- 确认对第三方登记员执行的第三方审计验收。
  Recognize acceptance of a third-party audit conducted by 3rd party registrars.
- 拒绝对非专业登记员执行的第三方注册验收。
  Refuse acceptance of a third-party registration that is not from a recognized registrar.

9.2 沃茨内部审计
9.2 Watts Self Audit

沃茨内部审计通过持续改善生产过程，旨在提供世界一流的高质量产品。 然而，这种内部审计不会详细描述提供高质量产品与服务的需求，并且沃茨保留权利通过全面审计来补充公司内部审计。
The Watts Self Audit assists suppliers in reaching World-class quality goals through a never-ending process of continuous improvement. It will not however, provide absolute description of what is required to assure quality in products and service, and Watts reserves the rights to supplement a self audit with a full audit.

All suppliers shall maintain an effective documented quality system that communicates, identifies, coordinates, and controls all key activities necessary to produce a quality product.

具体来说，依据国际质量管理标准某项规定，由公认的、独立的第三方专业登记员对供应商进行认证/注册。
When specified, suppliers shall be certified / registered to one of the following International Quality Management standards by a recognized independent, certified 3rd party registrar.
供应商可能需要向沃茨提交一份质量手册副本和/或证书副本，作为质量体系认证的客观证据。
Suppliers may be required to submit a copy of their Quality manual and / or certificate to Watts as objective evidence of quality system certification.

ISO 9001:2008	质量管理
ISO 9001:2008	Quality Management
	体系 - 要求
	Systems – Requirements

供应商基于内部审计结果来评估其质量体系并制定改善计划，从而提高整体质量可靠性，并改善供应给沃以及其他重要客户的组件总成本。
The supplier assesses its quality system and develops improvement plans based on the results of the Self Audit to improve its overall quality reliability, and the total cost of components supplied to Watts, as well as other important customers.

内部审计准则的制定，旨在评估供应商的质量体系和过程控制能力，并协助供应商发现自身优劣势和/或改善之处。
The Self Audit criteria are intended to assess a supplier’s quality system, process control capability, as well as assist the supplier to identify strengths, weaknesses, and / or areas requiring improvement.

9.2.1 内部审计评估
9.2.1 Self-Audit Assessment

供应商独立完成内部审计评估，然后交由沃茨进行评估，从而确定供应商是否准备好现场调研。上述评估要求供应商提供质量体系的特定领域以及内部审计过程控制类别。 本准则一般遵循ISO 9001:2008标准，再加上具体要求，从而确保有效的过程控制。
To determine the supplier's readiness for a site survey the self audit assessment is completed by suppliers independently and then evaluated by Watts. The assessment requires suppliers to address specific areas of the quality system and process control categories of the Self Audit. The criteria generally follow ISO 9001:2008 adding specific requirements to ensure effective process control.

9.2.2 自内部审计调查
9.2.2 Self Audit Survey

本调查由各种质量体系和过程控制类别组成，旨在为调查期间供应商的质量体系、过程控制以及质量承诺作出公正评价。 沃茨将不定期地修改本调查，以纳入新的质量体系要求。
This survey consists of various quality system and process control categories and is intended to provide a fair appraisal of the supplier's quality system, process controls, and commitment to quality at the time of the survey. From time to time Watts will revise this survey to incorporate new quality system requirements.
沃茨调查小组会对供应商进行现场评估，并根据现有证据和观察资料来评估供应商的合规性，每个项目分成四个级别。
A Watts survey team performs an on-site evaluation of suppliers and from available evidence and observations, assesses the supplier's compliance at one of four levels for each of the items.
参考文献：沃茨内部审计。
Reference: Watts Self Audit.

10. 生产件批准要求
10. PRODUCTION PART APPROVAL REQUIREMENTS

采用生产件批准程序来确定供应商是否正确理解

生产件批准程序
Production Part Approval Process

1. 沃茨将为待生产的各个部件和/或部件族提供WW-PPAP-109表格。
   Watts will provide form WW-PPAP-109 for each part and/or family of parts, to be produced.
2. 供应商应：
   The supplier shall:
   a. 审核生产件批准程序报告。验收前须先解决疑问/分歧。 签署生产件批准程序文件。签署则代表同意上述要求。
      Review the PPAP report. Questions / disagreements should be addressed prior to acceptance. Sign the PPAP. Signing indicates agreement with requirements.
   b. 在10个工作日内将生产件批准程序报告发送至沃茨。
      Return the PPAP report to Watts, within 10 business days.
   c. 在满足要求和/或立即解决在成功实现上述要求的过程中出现的任何难题时，请立即联系沃茨。
      Contact Watts as requirements are completed and / or to address any difficulties in successfully meeting the requirements immediately.

生产件批准程序
Production Part Approval Process
（生产件批准程序）保证书提交
(PPAP) Warrant Submission

提交生产件批准程序保证程序包以证明其符合性，并且须在开始生产前（至少是生产前45天）尽早提交该保证书。
PPAP compliance is demonstrated by submission of the PPAP Warrant package and should be made as far in advance of the production start- up as possible, but at least 45 days prior to production.

1. 应采用生产件批准程序保证书来传输PPAP提交程序包。
   The PPAP submission package should be transmitted using the PPAP Warrant.
2. 供应商必须签署保证书。

所有沃茨要求，是否提供物理测试和资格认证，从而保证部件设计与制作符合要求。
The Production Part Approval Process (PPAP) is used to determine if the supplier properly understands all Watts requirements and provides for physical testing and qualification to ensure that, as designed and as made, the parts meet requirements.

生产件批准程序是指用来记录某个具体部件或部件族相关的所有部件质量要求的工具。 必须使用通过实际生产过程来生产的部件来满足生产件批准程序要求。 为了标准化并简化要求，美国汽车工业行动集团（AIAG）手册已列为参考文献，来支持这些需求。 若无法获取这些参考文献，请联系您的沃茨代表。
The PPAP is a tool used to document all parts qualification requirements relevant to a specific part or part family. The requirements for PPAP must be met using parts produced by the actual production processes. In order to both standardize and simplify requirements, the Automotive Industry Action Group (AIAG) manuals listed as references support this requirement. Please contact your Watts representative if you are unable to obtain these references.

The supplier must sign the warrant.

3. 沃茨将审查所提交的生产件批准程序并及时向供应商提供处理方案。
   Watts will review the PPAP submission and provide disposition to the supplier in a timely manner.

- 提交经批准后，沃茨将签署生产件批准程序保证书并将发送至供应商，这样一来供应商得到授权开始生产。
  When the submission is approved, Watts will sign the PPAP Warrant and return it to the supplier, which authorizes the supplier to start production.

- 若提交未经批准，沃茨将联系供应商并告知未批准的缘由。供应商必须作出合适的响应，
  If the submission is not approved Watts will contact the supplier with the reasons for disapproval. The supplier must respond

且在重新提交生产件批准程序保证书并获批前，无权开始生产。
appropriately, and is not authorized to start production until the PPAP Warrant is resubmitted and approved.

为了满足成品的发运日期，在设定样品提交日期时应留有充足的时间进行修改或纠正。 若未满足任何要求，则应在提交生产件批准程序前予以解决，并在保证书中注明。
In order to meet end product ship dates, allow sufficient time for requests for revisions or corrections when establishing dates for sample submissions. Any requirements not satisfied should be addressed prior to PPAP submission and noted in the PPAP Warrant.

依据沃茨的判断，可在供应商设施场所对任何或所有生产件批准程序项目进行现场审查，作为过程合格审计的一部分。 以下章节提供了生产件批准程序各项要求的详情。
At Watts discretion, any or all of the PPAP items may be reviewed on-site at the supplier's facility as part of the process qualification audit. The following sections provided detail on each of the PPAP requirements.

参考文献：生产件批准
References: Production Part Approval
程序表格。
Process (PPAP) form.

11.1 生产件批准程序检查表
11.1 PPAP Check Sheet

沃茨将准备本报告并于采购过程早期提供。 本报告将明确提交要求，而且可能包括如下附加要求：
The report will be prepared by Watts and provided early in the procurement process. It will define submission requirements and may include additional requirements including the following:

- 过程流程图。
  Process Flow Diagram.
- 设计/过程失效模式与效应分析（DFMEA和PFMEA）。
  Design / Process Failure Mode and

与供应商一同审核生产件批准程序要求。 这项联合审核包括对图纸与规格、适用行业标准、主要产品或过程特点、检验与测试要求、材料规格与认证、应用条件以及包装要求等的检查。
A requirements review will be conducted with the supplier to review the PPAP requirements. This joint review includes an examination of drawings and specifications, applicable industry standards, key product or process characteristics, inspection and test requirements, material specifications and certifications, application conditions, packaging requirements, etc.

参考文献：生产件批准
References: Production Part Approval
过程；AIAG手册。
Process; AIAG Manual.

11.2 生产件批准程序（PPAP）保证书
11.2 PRODUCTION PART APPROVAL PROCESS (PPAP) WARRANT

供应商准备生产件批准程序保证书并提交至沃茨。
The PPAP Warrant shall be prepared by the Supplier and submitted to Watts.

注意：该保证书可能包括含有详细免责条款和进一步解释说明的附加文件。
Note: The PPAP Warrant may include additional documents detailing exceptions or further explanations.

生产件批准程序保证书的有效性
PPAP Warrant Validity

除非生产件批准程序保证书上另有规定，否则经批准的生产件批准程序保证书将在合同期内或被沃茨废除前保持有效。 若发生下列情况之一，则供应商须在第一次生产装运前通知沃茨：
Unless otherwise specified on the PPAP Warrant, an approved PPAP Warrant is valid for the life of the contract or until revoked by Watts. Should one of the following conditions occur, the supplier must notify Watts prior to first production shipment:

- 纠正之前发运部件的不符之处。
  Correction of a discrepancy on a

Effects Analysis (DFMEA / PFMEA).

- 控制计划（CP）
  Control Plan (CP)
- 过程能力研究。
  Process capability studies.
- 量具重复性和再现性（R&R）研究。
  Gage Repeatability and Reproducibility (R&R) Studies.
- 量纲分析。
  Dimensional Analysis.
- 材料性能与可靠性测试结果。
  Material performance and reliability test results.
- 样品部件。
  Sample Parts.
- 其余具体要求。
  Other requirements as specified.

previously shipped part.

- 依据经批准的图纸变更请求（DCR），在设计记录、规格或材料方面进行工程变更以修改产品。
  Product modified by an engineering change to design records, specifications, or material on an approved Drawing Change Request (DCR).
- 使用除了用于之前批准部件之外的其它可选材料进行加工。
  Use of another optional process of material than was used in a previously approved part.
- 采用新的或修改后的工具（易损坏的工具除外）、铸模、模具、模式进行生产，包括额外或替换工具。
  Production from new or modified tools (except perishable tools), dies, molds, patterns, including additional or replacement tooling.

- 根据现有工具或设备来翻新或重整进行生产。
  Production following refurbishment or rearrangement of existing tooling or equipment.
- 在制造过程或方法发生任何变更后进行生产，包括润滑剂、脱模剂、或其他工艺溶液剂变更。
  Production following any change in process or method of manufacture to include changes in lubricants, mold release agents, or other process solutions.
- 通过转移至不同工厂地点或从其他工厂地点转移过来的工具和设备进行生产。
  Production from tooling and equipment transferred to a different plant location or from an additional plant location.
- 关键分包部件来源、材料或服务（比如热处理、电镀）变更。
  Change of source of key subcontracted parts, materials or services (for example, heat treating, plating).
- 生产达到十二个（12）月或以上，批量生产导致工具发生钝化后须重新发行产品。
  Product re-released after the tooling has been inactive for volume production for twelve (12) months or more.
- 由于供应商质量问题，应客户请求须延缓发货。
  Following a customer request to suspend shipment due to a supplier quality concern.
- 任何将导致控制计划（CP）出现变更的其他活动。
  Any other activity that will result in a change to the Control Plan (CP).

供应商将利用供应商偏差请求（SDR），将任何这类事件的发生情况告知沃茨。 沃茨将对SDR进行审核，并且可能需要重新提交全部或部分生产件批准程序。 若要求重新提交，则须向供应商发送新的生产件批准程序。 首次生产装运前，须获

11.3 关键组件
11.3 Key Components

与标准组件相比，关键部件需要更高严谨度。 将在生产件批准程序中详述附加要求。
Key components require a higher degree of rigor than standard components. Additional requirements will be specified on the PPAP.

11.4 关键特征（KCs）
11.4 Key Characteristics (KCs)

关键特征指的是材料、过程、部件、装配或测试的任何特性，这些特征在指定要求范围以内或以外的变更会对产品的适配性、外形、功能或其他预期可交付成果产生显著影响。 关键特性应通过工艺认证或其他类似的、经批准的方法论进行认证，详情请参考附录1--过程认证。
A key characteristic is any feature of a material, process, part, assembly, or test whose variation within or outside the specified requirements has a significant influence on product fit, form, function or other expected deliverable. Key characteristics shall be certified via Process Certification or other similar, approved methodologies as defined in Appendix 1-Process Certification.

沃茨将明确关键特性，供应商须对这类特性进行认证并将其记录在生产件批准程序文件中。 可通过多种方法来确定这些关键特性，包括：
Watts will define the key characteristics for which the supplier needs to certify and document these on the PPAP. Determination of these key characteristics may occur through various methods, including:

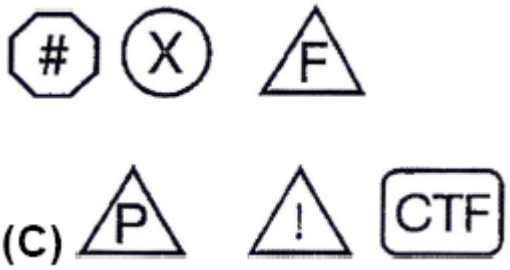
- 沃茨工程图纸与规格中记录符号和/或标志。
  Notations and / or symbols documented on Watts engineering drawings and specifications.
- 就已知的过程问题、生产问题或现场问题进行沟通。
  Communication of known process issues, production problems, or field problems.

沃茨文件中用来表示关键特性的各种符号的示例如下：
The various symbols used on Watts document

得完全书面批准。
The supplier will utilize a Supplier Deviation Request (SDR), to notify Watts should any of these events occur. The SDR will be reviewed by Watts and a full or partial PPAP resubmission may be required. Should resubmission be required, a new PPAP will be issued to the supplier. Full approval, in writing must be gained prior to first production shipment.

参考文献：生产件批准程序（PPAP），保证书，第一篇，供应商偏差请求（SDR）；有关APQA的AIAG手册。
References: Production Part Approval Process (PPAP), Warrant, First Article, Supplier Deviation Request (SDR); AIAG manual on APQA.

to signify key characteristics are examples show below:



供应商可能会确定超出沃茨定义范围的额外关键特性。
The supplier may identify additional key characteristics beyond those defined by Watts.

这是针对肩负设计职责的供应商提出的要求。 任何经供应商确认的额外关键特性将被记录在生产件批准程序文件中，且必须符合过程认证要求或其他类似的、经批准的方法，详情请参考附录1--过程认证。 沃茨须不定期地对这类关键特性作进一步补充。
This is required for suppliers with design responsibility. Any additional supplieridentified key characteristics will be documented on the PPAP and must meet the process certification requirements or other similar, approved methodologies as defined in Appendix 1- Process Certification. Watts may further supplement these key characteristics from time to time.

11.5 流程审计
11.5 Process Audit

若有规定，沃茨可能需要在供应商的制造场地进行流程资格审计。 此次审计重点是供应商在制造沃茨所需产品时采用的具体过程质量控制以及部件/商品具体过程要求。
When specified, Watts may require a process qualification audit at the supplier's manufacturing facility. This audit focuses on the specific process quality controls that the supplier has in place for the products being manufactured for Watts, as well as part / commodity specific process requirements.

12. 具体要求
12. SPECIFIC REQUIREMENTS

12.1 失效模式与效应分析（FMEA）
12.1Failure Mode and Effects Analysis (FMEA)

失效模式与效应分析（FMEA）是一种预防性的分析技术，对产品或过程中的潜在失效的原因和影响进行系统性研究。 通过各种方式来检查产品或过程中会发生的失效。 针对每个潜在失效的严重性及其对系统造成的影响进行评估，并审查采取的（或计划的）行动，从而将失效概率或失效带来的影响降至最低。 FMEA属于动态文件，并且当产品或过程进行变更时，应对本文件进行修改。
The Failure Mode and Effects Analysis (FMEA) is a preventive analytical technique to methodically study the cause and effects of

失效模式与效应分析（FMEA）
Reference: AIAG Manual on Potential Failure Mode and Effects Analysis (FMEA)

12.2 控制计划（CP）
12.2 Control Plan (CP)

本控制计划为详细的步骤清单，其中部件、评论等将用于制造、检验与测试。 实际上，本计划描述了过程各阶段所需行动，包括接收、加工、出货，以及周期性要求，以保证所有过程输出均处于控制状态。 常规生产运行过程中，控制计划提供了将运用于控制特性的过程监控与控制方法。 在产品的整个生命周期中，要始终保持并使用本控制计划。 在产品生命周期早期，控制计划的主要目的是记录并传达过程控制的的初始计划。 随后，会对生产过程中的过程控制与产品质量保证予以指导。 本控制计划属于动态文件，反映了当前的过程控制方法，须随着控制方法的评估与改进进行相应升级。
The Control Plan is a detailed, step-by-step listing by which the part, comment, etc., is to be manufactured, inspected and tested. In effect, the plan describes the actions that are required at each phase of the process including receiving, in-process, out-going, and periodic requirements to assure that all process outputs will be in a state of control. During regular production runs, the CP provides the process monitoring and control methods that will be used to control characteristics. The CP is to be maintained and used throughout the product life cycle. Early in the product life cycle its primary purpose is to document and communicate the initial plan for process control. Subsequently, it guides manufacturing how to control the process and ensure product quality. The CP is a living document, reflecting the current methods of controlling the process, and shall be updated as control methods are evaluated and improved.

供应商须制定控制计划并提交至沃茨以获取批准。本控制计划通过部件编号/部件族及修订等级来鉴别，而且至少应包括下列信息：
Suppliers are required to develop a CP and submit to Watts for approval. The CP is identified by part number/ part family and revision level and shall include as a minimum the following:

- 部件编号、部件名称、图纸与修订。

potential failures in a product or process. The product or process is examined for all the ways in which a failure can occur. For each potential failure, an assessment is made of its effect on the system and its seriousness, and a review is made of the action being taken (or planned) to minimize the probability of failure or to minimize the effects of the failure. The FMEA is a living document and shall be revised as changes are made to the product or process.

若生产件批准程序有所规定，供应商需要开发设计（产品）FMEA和/或过程FMEA并提交至沃茨。供应商可能会受邀参与高水平设计FMEA的制备。经沃茨批准，采用适当的代替性风险分析方法来代替FMEA或作为FMEA的附加要求。
When specified on the PPAP, suppliers are required to develop a Design (product) FMEA and / or a Process FMEA and submit to Watts. Suppliers may be invited to participate in the preparation of higher level Design FMEA through participation in a product development team, Suitable alternative risk analysis means may be used either in place of, or in addition to the FMEA as approved by Watts.

Part number, part name, drawing and revision.

- 制造操作顺序，每个步骤包含如下信息：
  Sequence of manufacturing operations, listing the following for each step:

- 流程名称/操作描述。
- Process name / Operation Description.
- 适用设备、工具、固定装置等。
- Applicable equipment, tools, fixtures, etc.
- 需测试/检验产品特性或特征描述。
- Description of features or characteristics that are to be tested / inspected.
- 规格或公差。
- Specification or tolerance.
- 检验方法。
- Method of inspection.
- 检查频率。
- Frequency of checks.
- 控制方法。
- Control method.
- 非一致事件/失控条件下的反应计划。
- Reaction plan in the event of nonconformance/out-of-control condition.

在相同地点、以相同过程生产的产品组或产品族可采用单个控制计划，并须：
A single CP may apply to a group or family of products that are produced by the same processes at the same location and shall:

- 确定所有关键特性。
  Identify all key characteristics.
- 确定分包商及其提供的服务。
  Identify sub-contractors and services provided
- 识别、标志、包装与保存要求。
  Identification, marking, packaging and preservation requirements.

供应商应：
The supplier shall:

- 监控部件的实际加工过程。
  Monitor actual processing of the part.
- 将加工过程与CP进行各方面的比较。
  Compare processing to the CP in all aspects.
- 向沃茨汇报任何与计划有关的变更/偏差。
  Report to Watts any variance/deviations from the plan.

沃茨保留权利审计供应商设施与控制计划实践，并审计或监察次级供应商的生产流程。 本审计可视为认证评估的一部分或作为单个部分。 这类审计不会免除供应商生产优质部件的责任。
Watts reserves the right to audit the supplier's facility and practices to the CP as well as audit or observe the processes of sub-tier suppliers. This Audit may be part of a certification assessment or separate. Such audit shall not relieve the supplier's responsibility to produce defect-free parts.

PPAP包含一张控制计划表格。 可使用本表格，或者只要供应商文件包含上述所需的详细内容，则供应商也可以使用他们自己的表格。
The PPAP contains a CP form. This form can be used or supplier may utilize their own format, as long as the document contains all of the required information as detailed above.

参考文献：控制计划（CP），
References: Control Plan (CP),
产品质量先期计划
ALAG Manual on Advanced Production
ALAG手册
Quality Planning(APQP)

并与控制图一同进行分析。 基于能力研究分析与抽样方法，所需最小值可以为1.33Cpk或1.67Ppk（如适用）。 如有例外，须由沃茨通过书面形式进行授权。
analyzed with control charts. Based on the capability study analysis and method for sampling a minimum value of either a 1.33 Cpk or 1.67 Ppk is required as applicable. Exceptions must be authorized by Watts in writing.

在新产品首次生产之前，应进行初始过程研究。若首次生产之前无法获取可接受的过程能力/性能，则供应商必须制定纠正行动计划并修订控制计划，并且须得到沃茨批准。 征得沃茨同意后，可采用相同或相似过程中的长期能力结果来代替短期能力要求。
The initial process studies shall be available prior to the first production of new parts. If acceptable process capability / performance cannot be obtained prior to first production, a corrective action plan and revised Control Plan must be developed by the supplier and approved by Watts. This short-term capability requirement may be replaced by long-term capability results from the same or similar processes, with Watts concurrence.

若产品或特征不适于离散测量（属性 - 比如，印刷电路板测试为"通/不通"），则供应商在征得沃茨批准的前提下须提出过程能力的评估方法。
Where a product or feature does not lend itself to discrete measurements (Attributes – for example, printed circuit boards tested as "Go / No Go") the supplier shall propose, for Watts approval, a method of evaluating process capability.

应采用下列参考文献来执行初始过程研究。
Initial process studies shall be performed using the following references.

参考文献：MSA的AIAG手册；SPC的AIAG手册。
References AIAG Manual on MSA; AIAG Manual of SPC.

12.4 长期过程能力
12.4 Long-Term Process Capability

12.3 短期（初步）过程研究
12.3 Short Term (Preliminary) Process Studies

生产前，须为所有关键特性确认过程能力或过程性能的可接受等级。 本要求目的在于确定这一生产过程能否生产出合格产品。
An acceptable level of process capability or performance must be determined prior to production for all key characteristics. The purpose of this requirement is to determine if the production process is likely to produce product that meets requirements.

初始过程研究通常简称为短期研究或初步研究，是指基于短时间段内收集到的数据来评估制造过程，通常这个时间段要少于30天或属于一次运行操作。 收集数据时，应考虑抽样技术
Initial process studies, often referred to as short-term or preliminary studies, refer to assessments of the manufacturing process based on data collected over a short period of time, usually less than 30 days or from one operating run. The collection of this data should consider sampling technique and be

长期过程能力研究包括较长时间内或从多次生产运行过程中收集的数据。 研究反映了所有可能的正常类型以及在制造过程中所发现的变更，比如材料、方法、人员、固定设备、刀具磨损及环境。
Long-term process capability studies consist of data collected over a longer period of time or multiple production runs. The studies reflect all possible types of normal; variation found in the manufacturing process, such as material, method, personnel, fixtures equipment, tool wear, and environment.

持续时间应足够长，以便涵盖变更的所有预期来源。 当本间隔的控制图中显示了统计控制中的过程时，须明确过程能力。
The period of time should be long enough to include all expected sources of variation. Process capability is defined when the control charts for this interval show the process to be in statistical control.

对于关键特性，沃茨要求最小值至少为1.33Cpk。
For key characteristics, Watts requires a minimum of 1.33 Cpk.

若未符合上述准则，则供应商应执行：
If the criteria above are not met, suppliers shall implement:

- 100%检验，直至表现出所需能力。
  100% inspection until required capability is demonstrated.
- 防误设备，以筛选出不合格产品。
  Mistake proofing devices to screen out nonconforming products.
- 过程改进动作。
  Process improvement actions.

注意：由于100%检验既不符合成本效益，并且在筛选不合格产品方面往往无效，因而须视为一种应急措施，而非过程的永久性特征。而最重要的质量重点则需放在预防上，而非检测上。
Note: Since 100% inspection is not cost effective and is often ineffective at screening out nonconforming products, it should be considered an emergency measure, rather than a permanent feature of the process. The overriding quality focus should be on prevention, not detection.

参考文献：MSA的AIAG手册；SPC的AIAG手册。
References: AIAG Manual on MSA; AIAG Manual on SPC.

12.5 测量系统分析（MSA）与量具重复性和再现性（GR&R）
12.5 Measurement Systems Analysis (MSA) and Gage Repeatability and Reproducibility (GR&R)

量具重复性和再现性（GR&R）研究用于测量量具系统的总重复性和再现性，并将其作为总规格的百分比。
Gage Repeatability and Reproducibility (GR&R) studies measure the total repeatability and reproducibility of a gage system as a percentage of the total specification.

沃茨要求对所有用于监控关键产品或过程特性的计量型量具进行重复性和再现性分析。 沃茨建议，至少在每次测量仪表校准时以及生产人员使用的测量仪表发生变更时，须进行量具R&R研究。
Watts requires gage repeatability and reproducibility analysis for all variable gages that 用于监控关键产品或过程特性的属性量具也须经过量具研究。 □供应商与沃茨将共同商议来确定采用的方法。
Attribute gages that are used to monitor key product or process characteristics must also undergo gage studies. The method used will be agreed upon between the supplier and Watts.

若量具系统失效，则供应商应采取纠正措施，以恢复量具测量的重复性和再现性。 在将量具用于能力研究或验收或拒绝部件之前，应先证明量具的重复性和再现性。
If the gage system fails, the supplier shall take corrective action to make the gage measurements repeatable and reproducible. A gage shall be proven repeatable and reproducible before it can be used in a capability study or is used to accept or reject parts.

参考文献：测量系统分析的AIAG手册。
Reference: AIAG Manual on Measurement System Analysis.

12.6 样品部件
12.6 Sample Parts

供应商必须：
The supplier must:

- 提供生产件批准程序指定数量的样品部件。基于下列因素确定具体的样品尺寸，比如组件尺寸、复杂性、成本、预计容量等。
  Provide the number of sample parts as specified on the PPAP. The specific sample size will be determined based on factors such as component size, complexity, cost, projected volume, etc.
- 除非另有书面批准，否则应从实际生产工具和/或过程取得样品或采用实际生产工具和/或过程来制造样品。 若采用多种生产模具、模腔、冲模、机器等，则每种类型都应提供一份样品。
  Take or make samples from actual production tooling and / or processes unless otherwise approved in writing. Where multiple production molds, cavities, dies, machines, etc., are

are used to monitor key product or process characteristics. Watts recommends that gage R&R studies be performed at least with each measuring instrument calibration and whenever production personnel using the measuring instrument are changed.

对计量型量具进行量具R&R研究的首选方法是平均法与全距法。 生产件批准程序提供了量具系统（量具与操作员）重复性和再现性的允许变量。若供应商使用的量具超出生产件批准程序规定的最大允许值，则应联系沃茨，征求批准（一般来说，最大允许值为20%）。
The preferred method for performing the gage R&R study on variable gages is the average and range method. The allowable variation of the repeatability and reproducibility of the gage system (gage and operator) is identified on the PPAP. If the supplier uses a gage outside the PPAP allowable maximum Watts shall be contacted for approval (generally, 20% is the max allowable).

utilized, samples are required from each.

- 按要求完成首件检验报告（FAIR），并提供样品件。 ISIR指的是对合格部件的综合检验报告。 这是一个完整的部件布局，并且必须一同提交所有样品。 包括对所有尺寸、图纸说明、工程规范与质量标准的测量与核实。 某些情况下，会将上述称之为首件检验（FAI）或首件检验报告（FAIR）。
  Complete the First Article Inspection Report (FAIR) as required, and provide with the sample parts. The ISIR is a comprehensive inspection report of the part being qualified. It is considered a full part layout and must accompany all samples submitted. It includes measurement and verification of all dimensions, drawing notes, engineering specifications and quality standards. This is sometimes referred to as a First Article Inspection (FAI) or First Article Inspection Report (FAIR).

注意：ISIR作为PPAP过程的一部分，应由沃茨确定并在生产件批准程序中予以规定。
Note: Determination for an ISIR as part of the PPAP process is made by Watts and will be specified on the PPAP.

对于检验结果的实际记录，须在部件图纸上清楚注明结果并进行打印。 必须以测量术语来表达实际变量数据，而非属性（通过/失败；通/不通等等）数据。 具体样品的所有结果必须是可追溯的。
For actual recording of inspection results, a checked print where the results are legibly written on a part drawing may also be utilized. Actual variable data must be provided in terms of measurements, not attribute (pass / fail; go / no go; etc.) data. All results must be traceable to the specific samples from which obtained.

参考文献：生产件批准程序（PPAP），首件检验报告（FAIR）
Reference: Production Part Approval Process, (PPAP) First Article Inspection Report (FAIR)

12.7 量纲分析
12.7 Dimensional Analysis

沃茨可能需要依据第12.6条中的要求，对超出样品部件的质量进行额外的量纲分析。 在这类情况下，在生产件批准程序中详述细节,以作为生产件批准程序的一部分。
Watts may require additional dimensional analysis beyond the quality of sample parts submitted in accordance with the requirements of paragraph 12.6. In these cases, details will be specified on the PPAP as part of the PPAP process.

通过沃茨质量管理体系软件（WQMSS）以电子方式提交此数据的方法更好。 必须以测量术语来表达实际变量数据，而非属性（通过/失败；通/不通等等）数据。
It is preferred that data be submitted electronically via the Watts Quality Management System Software (WQMSS). Actual variable data must be provided in terms of measurements, not attribute (pass / fail; go / no go; etc.) data.

12.8 材料、性能和可靠性测试结果

以强调变更来源对过程造成的影响。 本流程图有助于分析总过程，而非过程的单独步骤。
sources of variation on the process. The flow chart helps to analyze the total process rather than individual steps in the process.

供应商应创建流程图，该流程图以收料报告为起点，并通过包装和运输，以清楚地描述生产过程的步骤和顺序。
The supplier shall have a process flow diagram that clearly describes the production process steps and sequence beginning at material receipt through packaging and shipping.

若过程步骤包括由外部来源执行的操作，则需要在图中标明这类步骤，由相同过程并以相同顺序生产的产品组或产品族可采用单个过程流程图。
Where process steps include operations performed by outside sources, these steps need to be identified within the diagram, and A single process flow diagram may apply to a group or family of products that are produced by the same processes in the same sequence.

12.10 认证、证书和规范要求
12.10 Certifications, Certificates, and Code requirements

图纸、合同或其他规格可能需要额外的质量体系或特定认证要求：
Drawings, contracts, or other specifications may require additional quality system or particular certification requirements:

- 美国机械工程师协会（ASME）
  ASME
- 美国国家卫生基金会（NSF）
  NSF
- 美国工厂互保研究中心（FM）
  FM
- 加拿大标准协会（CSA）
  CSA
- 美国保险商试验所（UL）
  UL
- 欧盟公告号机构（NB）
  NB
- 美国安全工程师协会（ASSE）
  ASSE
- USC认证

12.8 Material, Performance, and Reliability Test Results.

供应商或合格的独立第三方必须提供具体的材料、性能和/或耐久性测试结果。 必须将实际结果与商定的规格进行比较。 对于某些关键部件，沃茨可能要求由第三方进行测试。
The supplier, or a qualified independent third party, must supply specific material, performance and or durability test results. Actual results must be compared with agreed upon specifications. For certain critical parts Watts may require testing by third parties.

12.9 过程流程图
12.9 Process Flow Diagram

过程流程图为当前过程流程或拟定过程流程示意图，用来分析机器、材料、方法和人力资源的变更来源，
The process flow diagram is a schematic representation of the current or proposed process flow and is used to analyze sources of variations of machines, materials, methods, and manpower emphasizing the impact of

- USC
- ❖ 法国建筑科学技术中心 （CSTB）
  CSTB
- ❖ 美国水行业协会（AWWA）
  AWWA
- ❖ SIET认证
  SIET
- ❖ 荷兰KIWA认证
  KIWA
- ❖ 美国国际管道暖通器械协会（IAPMO）
  IAPMO
- ❖ 日本机构
  Japanese Agencies
- ❖ 欧洲机构
  European Agencies
- ❖ 澳大利亚标准
  Australian Standard

供应商负责确保当前满足并维持这些要求。 必须将这些要求的合规性证明作为生产件批准程序保证书的一部分予以提交，并单独发运（如需要）。若这些要求之一出现任何状态变更，则供应商须立即通知沃茨。
It is the supplier’s responsibility to ensure these requirements are fulfilled and maintained current. Evidence of compliance to these requirements must be submitted as part of the PPAP Warrant and individual shipments, if required. Supplier must notify Watts immediately if the status of one of these requirements changes.

12.11 其他要求
12.11 Other Requirements

沃茨可能会强加其他要求并视为必要要求。 这些要求或其他附加要求将在采购过程的早期和生产件批准程序中予以确定。
Watts may impose other requirements as necessary. These or other additional requirements will be identified early in the sourcing process and the PPAP.

13. 不合格产品
13. NON-CONFORMING PRODUCT

如下部分对适用于不合格产品的关键质量要求予以确定和解释。
The following sections identify and explain key quality requirements that are applicable for non-conforming product.

任何情况下，供应商在未征得书面授权的情况下不得发运不合格产品。
Under no circumstances shall a supplier ship non-conforming product without written authorization.

13.1 保证书
13.1 Warranty

供应商与沃茨达成的协议或沃茨采购订单条款与条件中均明确了供应商的保证书义务。
Definitions of warranty obligations of suppliers are provided in agreements enforced between the supplier and Watts or the Terms and Conditions of Watts Purchase Orders.

13.2 供应商认定的不合格产品。
13.2 Supplier Identified Non-conforming Product.

供应商通过质量控制过程或由其他客户提供的报告可能会发现产品不符合生产规格。 供应商须立即：
The supplier may find products, through their quality control processes or from reports by other customers, which were produced outside of specifications. The supplier is expected to immediately:

- 隔离这些不合格产品，并确定这种错误是
  a. 以及沃茨使用类似部件的所有情况。
  customer, where Watts is using a similar part.

获取偏差批准之前，供应商负责隔离不合格品，并且承诺不发运这些产品。
The supplier is responsible for the segregation and non-shipment of the non-conforming material until a deviation is granted.
在未经批准SDR的情况下，沃茨会拒收所收到的不适宜材料，并将其退回至供应商。供应商将支付所有手续费、装运费以及沃茨管理费。 在所有所需人员对偏差做出批准之前，不会对不适宜材料进行处理。
Discrepant material received at Watts without an approved SDR will be rejected and returned to the supplier with all extra handling and shipping costs incurred by the supplier and the Watts Administration Fee. No discrepant material will be processed until a deviation is approved by all required personnel.

参考资料：供应商偏差请求(SDR)，本文件第14.1.3条。
Reference: Supplier Deviation request (SDR), also paragraph 14.1.3

13.3 沃茨认定的不合格产品
13.3 Watts Identified Non-conforming Product

向客户发货之前，沃茨可能会不经意地从供应商运来的材料中发现不合格材料。 其他情况下，除非客户使用，否则可能不会发现不合格材料。 如下章节描述了当沃茨发现不合格材料时需采取的行为。
Watts may discover non-conforming material inadvertently shipped by the supplier, prior to shipment to the customer. In other cases, nonconforming material may not be discovered until the customer is using it. The following paragraphs describe required activities when non-conforming material is discovered by Watts.

13.3.1 在向客户发货前发现不合格产品
13.3.1 Non-Conformances Found Prior to Shipment to Customers

沃茨在向客户发货前就发现供应商的不合格产品

否在生产的早期就已经出现但未被察觉。
Segregate these products and determine if this error may have occurred, undetected, in earlier production.

- 下列情况下，可通过供应商偏差请求来通知沃茨。
  In the following situations notify Watts utilizing the Supplier Deviation Request.
  - 若非一致性会影响部件的外形、适配性或功能。
    If the non-conformance affects form, fit or function of the part.
  - 若不合格产品已经运出工厂。
    If there is likelihood that nonconforming product had “escaped” the factory.
  - 若不合格产品会影响向沃茨的交付。
    If the non-conforming product will affect deliveries to Watts.
  - - 收到来自客户的不合格产品报告
    - In all cases where a report of nonconforming product is received from

时，将对有问题的部件/组件进行识别和隔离，从而阻止进一步使用这类问题产品。
In the event supplier-responsible nonconformances are discovered by Watts prior to shipment to the customer, the parts / components in question will be identified and segregated to preclude further use.

本过程中的下一步骤将基于多个标准进行确定。这类标准包括但不限于缺陷的关键性、数量、成本和其他因素。
A determination of the next steps in the process will be based on several criteria, including but not limited to, the defect’s criticality, quantity, cost, and other factors.

基于上述评估，沃茨将确定
Based on this evaluation, Watts will determine 是否：
whether:

- 依据沃茨工厂规程，收回不合格品并退给供应商。
  Defects are accumulated and returned to suppliers in accordance with Watts plant procedures.

- 供应商在沃茨场地对不合格品进行分类。
  Suppliers sorts defects at Watts Sites.
- 供应商在沃茨场地对不合格品进行返工。
  Supplier reworks defects at Watts Sites.
- 依据合同细节，沃茨对不合格品进行返工，并收取供应商的返工成本与管理费用。
  Contingent on contract specifics, Watts reworks defects and charges supplier for rework costs and Administration fees.

除了对不合格品成本作出赔偿，供应商还需向沃茨赔偿处理不合格品的相关费用。 通常情况下，通过沃茨确定的标准扣款程序来进行处理，并且这一程序将覆盖所有成本费用。
In addition to reimbursement for the cost of the non-conforming parts, suppliers are expected to reimburse Watts for the costs associated with processing the non-conformances. This will typically be handled through a standard chargeback determined by Watts to cover the costs.

此外，若供应商在三个月内的次品率（由沃茨测定）超过了预定比率，则该供应商将进入观察期并须提交正式的改进计划。 若在之后的三个月内，未制定任何改进计划，则将由第三方检验机构进行强制检验，费用由供应商承担。 这就要求在供应商场地进行产品检验，并在发送至沃茨之前就征得批准。
Additionally, suppliers whose 3-month defect rate (as measured by Watts) exceeds a predefined rate will be placed on probation and required to submit a formal improvement plan. If improvement does not occur within the subsequent three months, third-party source inspection may be imposed at the supplier's expense. This requires product to be inspected at the supplier's location and approved prior to shipment to Watts.

13.2.2 现场失效
13.2.2 Field Failure

供应商与沃茨达成的商业合同里应在现场发现不合格部件时，明确供应商的保修义务与处置计划。
The warranty obligations of suppliers for "§按要求对产品进行召回和修理/更换。
"§ That product be recalled, and repaired / replaced, as determined.

基于上述所有情况，供应商应向沃茨赔偿由于纠正现场失效而产生的所有费用，并赔偿由此类失效强加于沃茨的任何其他费用，比如：现场劳动索赔、现场客户水损害索赔。
In all cases listed above, suppliers are expected to reimburse Watts for all costs associated with correcting field failures, and for any other costs imposed on Watts because of such failures, examples: Field Labor Claims, Field Customer Water Damage Claims.

14. 解决和偏差/变更过程
14. RESOLUTION AND DEVIATION / CHANGE PROCESS

对于由沃茨或供应商认定的不合格材料与过程，解决过程应包括供应商纠正措施请求（SCAR），以及有关处理不良材料或不合格材料所产生的供应商偏差请求。 若次品导致的实际成本超出标准费用，则将收取实际成本。
The resolution process for non-conforming material and processes identified by Watts or the supplier includes Supplier Corrective Action Requests (SCAR) and Supplier Deviation Requests associated with processing defective or non-conforming material. If the actual cost from a defect exceeds the standard charge, the actual cost incurred will be charged back.

14.1 供应商发起偏差/变更
14.1 Supplier Initiated Deviation / Change

14.1.1 产品偏差/变更
14.1.1 Product Deviation / Change

某些情况下，供应商可能需要背离沃茨要求与规格。 对于这类偏差，应通过沃茨SDR过程做出请求并发送至沃茨采购代表（买方）。
In certain instances, it may be necessary for the supplier to deviate from Watts requirements and specifications. Request for such deviations shall be made via Watts SDR process and sent to the Watts Purchasing representative (Buyer).

若变更不会对适配性、外形或功能造成影响，则

nonconforming parts discovered in the field, as well as their disposition, shall be specified in the commercial contract enforced between the supplier and Watts.

若已确定了关键现场失效问题，则将基于多个准则的前提下，确定该过程的下一步骤，这类准则包括失效的关键性、数量、成本以及其他因素。基于这一评估，沃茨可能要求：
If a critical field failure issue has been identified, a determination of the next steps in the process will be made based on several criteria including the failure's criticality, quantity, cost, and other factors. Based on this evaluation Watts may require:

- 由沃茨对不良部件进行现场修理/更换。
  Defective parts be repaired / replaced in the field by Watts.
- 由供应商对不良部件进行现场修理/更换。
  Defective parts be repaired / replaced in the field by supplier.

因如下选项提交SDR：
When Changes do not affect fit, form or function, an SDR may be submitted for the following:

- 在供应商场地发现的不合格材料。
  Non-conforming material found at the supplier's facility.
- 请求替代材料。
  To request substitution of material.

对于永久性产品变更，沃茨保留权利对产品进行重新认证，并将发布合适的生产件批准程序。
For a permanent product change, Watts reserves the right to re-qualify the product and will issue an appropriate PPAP.

参考文献：供应商纠正措施请求（SCAR），供应商偏差请求（SDR）、生产件批准程序（PPAP）。
Reference: Supplier Corrective Action Requests (SCAR), Supplier Deviation Request (SDR), Production Part Approval Process (PPAP).

14.1.2 过程偏差/变更
14.1.2 Process Deviation / Change

通过SDR发出过程偏差请求。
Process deviations are requested by way of the SDR.

对于沃茨批准的过程控制计划中所列过程进行任何变更时，均需要过程偏差。
Process deviations are required for any changes to process that are listed on Watts approval process Control Plans.

沃茨期望供应商可以不断努力，通过改善系统来提升产品质量，减少过程变差。 为了实现这类目标，鉴于设计变更或其他不可预见情况（比如设备/工具变更、关键次级供应商变更等），供应商可能需要临时性的或永久性的过程偏差。
Watts expects suppliers to constantly strive to improve quality and reduce process variation through system improvements. To achieve these goals, suppliers may require process deviations, either temporary or permanent due to design changes or other unforeseen circumstances (such as changes in equipment / tooling, changes in critical sub-suppliers, etc.)

对于永久性过程变更，沃茨保留权利对产品进行重新认证，并发布合适的生产件批准过程（PPAP）。
For a permanent process change, Watts reserves the right to re-qualify the product and will issue an appropriate Production Part Approval Process (PPAP).
对于通过原始过程生产的产品，沃茨可能要求供应商以安全库存的方式保留一段时间。与此同时，提供证明来证实这些产品已经过重大变更。 这种安全库存通常可用于后续生产。
Watts may require the supplier to maintain a safety stock of product produced under the original processes for a period while deliberate changes are proven out. This safety stock can normally be used later for production.

参考文献：生产件批准程序（PPAP）。
Reference: Production Part Approval Process (PPAP)..

14.1.3 供应商偏差请求（SDR）
14.1.3 Supplier Deviation Request (SDR)

- 声明讨论中的变更为永久性变更还是暂时性变更。 若为暂时性变更，则应确认这些请求的批次或持续时间。
  State whether the changes in question is permanent or temporary. If temporary, these requests shall identify batch or time duration.
- 应确定由过程变更/不合格产品以及任何缓解措施导致的任何风险。
  Shall identify any risk due to the process change / non-conforming product and any mitigation activities.

在未经批准SDR的情况下，沃茨会拒收所收到的不适宜材料并将其退回供应商，须由供应商来支付由其导致的所有手续费与装运费。
Discrepant material received at Watts without an approved SDR will be rejected and returned to the supplier at the supplier's expense with all additional handling and shipping cost incurred by the supplier.

供应商会将SDR发送至沃茨。
Supplier will send the SDR to Watts.

- 一旦获批，须在所有发给沃茨的材料上附上一份获批的SDR。 沃茨保留权利通过供应商纠正措施请求（SCAR）来获取书面纠正措施计划。
  Once approved, all material shipped to Watts must be accompanied by a copy of the approved SDR. Watts reserves the right to request a written corrective action plan via a Supplier Corrective Action Request (SCAR).
- 若未征得批准，则须在请求表上注明拒绝缘由，并将表格返回给供应商。
  If approval is not granted, the reason for disapproval will be summarized on the request form and returned to the supplier.

不得将SDR用于掩盖或更换供应商缺乏正确质量体系或控制的事实。 若将SDR过多地用于不合格材料，则沃茨会将这一行为归结为滥用行为，并视为供应商质量体系中可能会出现的严重崩溃指标。
SDRs shall not be used to cover up or replace the lack of proper quality systems or controls at

对于任何不合格产品或是采用未列在沃茨批准的过程控制计划中而生产的产品，供应商必须在装运之前就向其沃茨采购联系人（买方）提交书面SDR，以征得批准。
Prior to shipping any non-conforming product or product produced by a process other than that listed on a Watts approved process CP, suppliers must submit a written SDR to their Watts Purchasing contact (Buyer) for approval.

SDR所需信息：
SDR required information:

- 当前过程/产品。
  The current process / product.
- 拟定偏差/变更。
  The proposed deviations / changes.
- 偏差/不一致性原因以及支持数据。
  The reason for deviations / nonconformances with supporting data.

the supplier location. Watts views excessive use of SDRs for non-conforming material as an abuse and an indicator that a supplier may have a serious breakdown in their quality system.

参考资料：供应商偏差请求（SDR）、供应商纠正措施报告（SCAR）。
Reference: Supplier Deviation Request (SDR), Supplier Corrective Action Report (SCAR).

14.2 不一致性/供应商纠正措施请求（SCAR）。
14.2 Non-Conformance / Supplier Corrective Action Request (SCAR).

就SCAR用于生产成本、性能、可靠性、安全性与客户满意度的潜在影响，则须对正式SCAR的需求进行评估。 这种情况下，沃茨将要求供应商使用8D纠正措施报告表（附件），
The need for a formal SCAR will be evaluated in terms of potential impact upon production cost, performance, reliability, safety, and customer satisfaction. Watts will request a supplier to submit a formal written corrective action plan to address specific non

并提交一份正式的书面纠正措施计划，以便解决工厂内或现场中确认的具体不符合性。 供应商应完全遵守这些要求。
conformances identified at either a plant or in the field using the 8D Corrective Action Report form (Attachment). Suppliers are expected to fully comply with these requests.

供应商所作的响应必须包括根本原因确定、遏制措施（短期纠正措施），以及永久（长期）纠正措施。 纠正措施中必须包括一份附有有效日期的既定实施计划以及对可疑材料的处置计划。
The supplier's response must include root cause determination, containment action (short-term corrective action), and permanent (long-term) corrective action. As part of the corrective action, a defined implementation plan with effective dates must be included, as well as disposition of suspect material.

有关遏制措施的信息（8D表格中的步骤D1-D3）必须在24小时内以书面的形式提供给沃茨。 若沃茨不同意遏制措施，则供应商须在24小时内（通过经修订的遏制措施）作出反应。 应在沃茨可接受的时间段内对失效进行分析，以确定根本原因。在沃茨对拟定的纠正措施与预防措施进行批准，并验证这些措施的有效性之后，方可将认为完成了SCAR。
The information concerning the containment action (steps D1-D3 of the 8D form) shall be provided in writing to Watts within 24 hours. If Watts disagrees with the containment action, the supplier must respond (with a revised containment action) within 24 hours. Failure Analysis leading to the root cause determination shall be done with in a time period acceptable to Watts. The SCAR will not be considered complete until proposed corrective and preventive action has been approved by Watts and its effectiveness verified.
参考文献：8D供应商纠正措施报告（SCAR）。
Reference: 8D Supplier Corrective Action Report (SCAR).

15. 供应商绩效指标
15. SUPPLIER PERFORMANCE METRICS

对于任何积极的供应商与客户之间的关系，对供应商业绩的反馈是一项非常重要的组成部分。 业绩指标是持续性改进工作的基础，同时也是沃茨环境、健康与安全是沃茨业务运营的重中之重。
Environment, Health & Safety is of prime importance to Watts.

供应商应遵守如下的沃茨EH&S期望：
It is expected that suppliers will comply with the Watts EH&S expectations listed below:

- 为所有员工、客户和承包商提供安全的工作环境。
  Provide safe working conditions for all employees, customers and contractors.
- 遵守有关环境、健康与安全监管方面的所有适用国家、区域、州及地方性法律法规和规范政策。
  Adhere to all applicable national, regional, state and local laws and regulations governing Environment, Health, and Safety.
- 运营方式应最大限度地减少对环境造成的不良影响。
  Operate in a manner that minimizes the impact to the environment.
- 对自然资源的节制使用，并推广可持续性自然资源实践。
  Limit the use of natural resources and promote sustainable natural resource practices.
- 向供应商推广并传达上述EH&S期望。
  Extend and communicate these EH&S expectations to suppliers.

获取更多信息，请联系沃茨EH&S部。
For additional information, contact the EH&S department in Watts.

17. 定义和缩略词
17. DEFINITIONS AND ABBREVIATIONS

8D
8D
福特汽车公司开发出来的问题解决过程。 “8D”这一名词源于本问题解决格式相关的八项条例。
A problem solving process developed by Ford Motor Company. The name “8D” originates from the fact there are eight disciplines associated with this problem solving format.
沃茨采用8D格式来解决内部与外部问题解决措

对所有供应商的期望。 依据沃茨制定的时间计划表来建立并审查改进目标。
Feedback on supplier performance is a critical component for any positive supplier-customer relationship. Performance metrics provide the basis for continuous improvement efforts and is an expectation that Watts has for all suppliers. Improvement targets may be established and reviewed on a schedule set by Watts.

沃茨每个月都要向供应商发放评分卡。
Watts issues monthly score cards to suppliers.

沃茨保留权利对供应商业绩作出正确评估，并采取措施保护沃茨及其客户的权利。 根据要求，供应商需要对不良业绩的解决措施提供正式的状态更新。
Watts reserves the right to formally assess supplier performance and take actions to protect Watts and our customers. When requested, suppliers are expected to provide formal status updates on actions being taken to address poor performance.

16. 环境、健康和安全
16. ENVIRONMENT, HEALTH & SAFETY

施。
Watts has adopted the 8D format to be used for both internal and external problem solving activities.

能力
Capability
制造过程中固有的最大变动幅度。 “提升过程能力”是指采取一系列步骤，将变更量限制为既定的可接受限值，从而控制整个过程。
The maximum amount of variation inherent in a manufacturing process. “Improving process capability” involves taking steps to limit the amount of variation to defined acceptable limits and thus bring the process into control.

能力指数
Capability Index
公差与处于统计控制状态下的过程所消耗的公差部分之间的对比。
The comparison of available tolerance to the portion of the tolerance consumed by a process in a state of statistical control.

Cpk
Cpk
能力指数在这一过程中处于中心位置，明确为CP最低上限值或CP最低下限值。 这一指数涉及过程均值与最接近过程扩散一半的规格限制之间的比例距离。
The capability index, which accounts for process centering and is defined as the minimum of CP Upper or CP Lower. It relates the scaled distance between the process mean and the closest specification limit to half the process spread.

不合格产品/服务
Non-conforming product / service
未履行合理使用期望的预期要求，包括安全考虑。
Non-fulfillment of and intended requirement for reasonable expectation for use, including safety considerations.

按时交付
On time Delivery
采购订单上所列项目的数量须按规定的日期和数量除以采购订单所列总项目的数量来按时交付。
The number of Purchase Order line items delivered on time to the required date and quantity divided by the number of total Purchase Order line items required.

生产件批准程序（PPAP）
Production Part Approval Process (PPAP)
需在生产前清楚地识别要求并消除沃茨与供应商之间的不明确之处的一份文件。 这份文件明确了供应商、部件信息、关键特性、认证要求、沃茨授权以及供应商签署情况。
A document intended to clearly identify requirements and eliminated ambiguity between Watts and a supplier, prior to production. It identifies Supplier, part information, key characteristics, qualification requirements, Watts authorization and supplier sign off.

部件质量认证过程
Part Qualification Process
一系列结构化活动，为产品验收做准备。
A series of structured activities leading up to acceptance of a product.

不良率（PPM）
Parts Per Million (PPM)
产品的缺陷率测量计算公式为：PPM =（不良产品总数）× 1,000,000 /（接收部件总数）。

2. 自然变更中心。
2. Centering of the natural variation.
3. 变更范围或变更扩散。
3. Range or spread of the variation.

在评估过程的自然变更与设计规格之间的关系时，过程能力则显得尤为重要。 通常情况下，通过被称为过程能力指数的措施来对这种关系进行量化处理。 最常见的指数是Cpk和Ppk。
The importance of process capability is in assessing the relationship between the natural variation of a process and the design specifications. This relationship is often quantified by measures known as process capability indices. The most common of these are Cpk and Ppk.

过程性能指数（Ppk）
Process Performance Index (Ppk)
性能指标在这一过程中处于中心位置，明确为USL-X bar/等等的最低值。 Ppk职能适用于与Cp和Cpk作对比，或与Cp和Cpk一同使用，以及测量并优化随时间变更而进行的改进计划。
Performance index, which, accounts for process centering defined as the minimum of USL-X bar / etc. Ppk should only be used to compare to / or with Cp and Cpk as well as measure and prioritize improvement over time.

生产材料和服务
Production Material And Services
生产材料和服务包括直接用于沃茨生产的产品、由供应商设计并纳入沃茨总成件的产品以及标有沃茨商标的产成品部件、组件或原材料。
Includes parts, components or raw material that are directly used in the manufactured of Watts products; supplier designed products that are incorporated into a Watts assembly / product; and finished goods branded by Watts.

重复性
Repeatability
评估由下列选项导致的测量系统中出现的变更：
Assesses the variation in a measurement system caused by:

- 量具测量变更的组合源；或
  The combined sources of measurement variation of a gage or;

A measurement of the defect rate in a product, calculated as: PPM=(Total number of defective parts) x 1,000,000 / (Total number of parts received).

生产件批准程序
Production Part Approval Process
（生产件批准程序）保证书
(PPAP)Warrant
保证书应包含供应商、部件信息、所需文件、供应商应用保证书以及沃茨处置计划。 征得沃茨批准并提交的保证书授权供应商开始生产。
The warrant contains supplier, part information, required documentation, the supplier application warrant and Watts disposition. The submission approval by Watts authorizes the supplier to start production.

过程能力
Process Capability
过程的自然变更范围是由系统的普通原因造成的。 过程能力包括三大重要组成部分：
The range over which the natural variation of a process occurs as determined by the system of common causes. Process capability has three important components:
1. 设计规格。
1. Design specification.

- 操作员采用的测试设备；或
  Test equipment when used by one operator or;
- 处于同一环境条件。
  Under one set of environmental conditions.

再现性
Reproducibility
当由一名以上的操作员来操作量具或一台测试设备，或处于相同的环境条件时，须测量变更的平均值。
Variation in measurement averages when more than one operator or set of environmental conditions are imposed on the gage or piece of test equipment.

供应商偏差请求（SDR）
Supplier Deviation Request (SDR)
将供应商提交的表格用于记录任何产品偏差或过程偏差，并征求批准。
A form submitted by the supplier that is used to document and request approval for any product or process deviation.

供应商纠正措施报告
Supplier Corrective Action Report
沃茨作出正式请求，通过采取措施来消除导致现有产品不一致性或其他不良产品情况的原因，以免再次发生（SCAR）。
A formal request by Watts to take action to eliminate the cause(s). of an existing nonconformity or other undesirable situation in order to prevent recurrence (SCAR).

控制计划（CP）
Control Plan (CP)
反映部件与过程的控制策略，以确保所有过程输出均处于控制状态。 在产品整个生命周期中，使用并维护本计划，并通过从收货至装运的各阶段所需的书面描述，已对过程条件变更作出响应。
Reflects a strategy for controlling parts and processes to ensure all process outputs remain in a state of control. The plan is used and maintained throughout the product life cycle and is responsive to changing process conditions via written descriptions of the actions that are required at each phase of the process from receiving through shipping.

失效模式与效应分析（FMEA）
Failure Mode and Effects analysis (FMEA)
通过预防性分析技术来对产品或过程中的潜在失效原因和影响进行系统化研究。 通过各种方式来检查产品或过程中会发生的失效。 评估每个潜在失效的严重性以及对系统产生的影响，并审查所采取的（或计划的）行动，从而将失效概率或失效效应降至最低。
A preventive analytical technique to methodically study the cause and effects of potential failures in a product or a process. The product or process is examined for all the ways in which a failure can occur. For each potential failure, an assessment is made of its effect on the system and its seriousness, and a review is made of the action being taken (or planned) to minimize the probability of the failure.

量具重复性与再现性（量具R&R 或 R&R）
Gage Repeatability and Reproducibility (Gage R&R or R&R)
通过确定使用量具进行的测量是否具有重复性与再现性，来评估测量仪器的精度。
The evaluation of a gauging instrument's

18. 参考资料
18. REFERENCE MATERIALS

供应商应负责保证依据本文件中所列参考规格的最新版本以及采购订单要求来实施作业。
It is the responsibility of the supplier to ensure that they are working to the latest version of specifications referenced within this document as well as Purchase Order requirements.

下列出版物为本手册中讨论的质量保证过程和技术提供了附加信息。因此供应商可联系沃茨联系人来获取这些资料。
The publications listed below provide additional information concerning quality assurance processes and techniques discussed in this manual and are available to suppliers through their Watts contacts.

- 供应商所赠商务礼品，沃茨道德手册。
  Business Gifts from Suppliers, Watts Ethics Brochure.
- 商务礼品的赠送与接收，沃茨道德手册。
  The Giving and Receiving of Business Gifts, WATTS Ethics Brochure.
- 生产件批准程序。
  Production Part Approval Process.
- 沃茨 QR-09.1 过程验证要求
  WattsQR-09.1 Process Certification Requirements.
- 供应商纠正措施请求。
  Supplier Corrective Action Request.

供应商负责获取本文件中规定的非沃茨文档副本。 可从美国汽车工业行动集团（AIAG）处获取如下出版物。 所有手册均有英文版本，并且大部分手册均有其他语言版本供参考，可在线订购：http://www.aiag.org.
It is the responsibility for the supplier to obtain copies of non-Watts documents specified within this document. The following publications are available from the Automotive Industry Acton Group (AIAG). All manuals are available in English, and many are available in other languages and may be ordered on-line at: http://www.aiag.org.

- 先进产品质量规划（APQP）以及控制计

accuracy by determining whether the measurements taken with it are repeatable and reproducible.

综合产品开发（IDP）
Integrated Product Development (IDP)
利用团队进行产品开发实践，从而保证解决产品生命周期出现的所有问题。
The practice of utilizing teams to develop products in order to ensure that all elements of the product life cycle are addressed.

关键特性
Key Characteristic
关键特征是指，材料、过程、部件、装配或测试的任何特性，并且这些特性在指定要求范围之内或之外的变更会对产品的适配性、外形、功能或其他预期可交付成果产生显著影响，因而需要通过过程验证实践在规定的接受限制范围内进行控制。
Any feature of a material, process, part, assembly, or test, whose variation within or outside the specified requirement has a significant influence on product fit, form, function or other expected deliverable, and thus should be controlled within prescribed acceptance limits via Process Certification practices.

划（CP）
Advanced Product Quality Planning (APQP) and Control Plan (CP)

- 测量系统分析。
  Measurement System Analysis.
- 潜在失效模式和效应分析（FMEA）。
  Potential Failure Mode and Effects Analysis (FMEA).
- 生产件批准程序（PPAP）
  Production Part Approval Process (PPAP)
- 统计过程控制（SPC）
  Statistical Process Control (SPC)

19. 附录
19. APPENDICES

- 登录沃茨水工业集团供应商官网，获取各类表格。网址为：
  http://www.wattswater.com/Suppliers
  Forms can be found on the Watts Water Technologies Supplier Web site.
  http://www.wattswater.com/Suppliers

修订历史
Revision History

修订版6 将供应商质量手册发布到供应商在线网站上。
Rev 6 Initial release of Supplier Quality manual to online supplier website.

修订版7 修订供应商质量手册第3页上的生产件批准程序和供应商偏差表格的发布日期，并更新手册中的超链接。 表格无任何变更。
Rev 7 Corrected release dates of PPAP and Supplier Deviation form in the Supplier Quality Manual on page 3 and updated hyperlink in manual. No changes were made to forms.