

# Global Supplier Quality Manual



GPO-Q-SW-001Revision 1

## Global Supplier Quality Manual

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## Revision History

Version No.	Date	Description of Changes
1	20-Mar-14	Initial Release

Only for ease of readability, all defined terms (i.e. Supplier, Buyer, Products, etc.) are or may be printed in throughout this manual in lowercase.

## Terms & Definitions

<b>Term</b>	<b>Definition</b>
<b>AIAG</b>	<b>Automotive Industry Action Group:</b> Not-for-profit association where professionals from a diverse group of stakeholders work collaboratively to streamline industry processes via global standards development and harmonized business practices ( <a href="http://www.aiag.org">www.aiag.org</a> ).
<b>Audit</b>	Systematic, independent and documented process for obtaining and objectively evaluating evidence to determine the extent to which criteria are fulfilled.
<b>Buyer</b>	Buyer shall mean the Ingersoll Rand legal entity identified as the Buyer in the applicable contracting document (e.g., purchase order or supply agreement). The term "buyer" is used interchangeably with the term "Ingersoll Rand" in the Global Supplier Quality Manual. The term "Ingersoll Rand" or "buyer", as defined above, may include one or more Strategic Business Units (SBU)
<b>Process Capability</b>	The maximum amount of inherent variation in a process. A statistical study performed on a process to determine if it is capable of meeting the precision and/or accuracy according to specifications (Cp, Cpk, Pp, Ppk and Sigma values)
<b>Confidential Information</b>	1) Information, knowledge or data disclosed by buyer to supplier, regardless of whether disclosed in written, tangible, oral, visual or other form, including, without limitation, sample products, equipment, software, or other objects or material, provided by buyer to supplier, and 2) information, knowledge or data which was obtained from visits to buyer facilities by supplier.
<b>Control Plan</b>	Methodology 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 conditions via written descriptions of the actions required at each phase of the process from receiving through shipping.
<b>CTQ</b>	<b>Critical-To-Quality:</b> Any product feature, component, material, assembly or complete system which is selected for production and field traceability in order to satisfy safety reporting requirements, regulatory requirements, or to support reliability analysis of high cost / high interest items.
<b>Defect / Non-Conformance</b>	Non-fulfillment of a requirement related to an intended or specified use, including safety considerations and regulatory requirements.
<b>Deliverable</b>	See Product definition.
<b>FMEA</b>	<b>Failure Modes and Effects Analysis:</b> 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 failure or to minimize the effects of the failure.
<b>Incoterms</b>	The Incoterms rules are intended primarily to clearly communicate the tasks, costs, and risks associated with the transportation and delivery of goods.

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Term	Definition
ISO-9001:2008	International Organization for Standardization: An international technical specification for quality management systems
Major Disruption	Special event resulting from products or services that do not meet the agreed quality and delivery specifications. Results in non-standard operations including: Quality Spills (product out-of-spec, stop shipments, production interruption, etc.) and Stock Outs (product not available).
NBH	<b>New Business Hold:</b> A control that prevents suppliers from quoting or receiving new business until conditions are satisfied to address deficiencies identified by Ingersoll Rand. The supplier may be removed from the approved supplier list.
PDP	Ingersoll Rand <b>Product Development Process:</b> Enterprise wide process to deploy world-class standard product development processes; use systematic feedback for continuous improvement; implement a common approach to project and program management; Invest in our employees' capabilities.
PPAP	<b>Production Part Approval Process:</b> Defines generic requirements for production part approval, including production and bulk materials. The purpose of the PPAP is to determine that customer engineering design record and specification requirements are properly understood by the supplier. The supplier shall demonstrate that the manufacturing processes have the potential to produce product consistently meeting these requirements during an actual production run at the quoted production rate.
PPM	<b>Parts Per Million:</b> Reject rate determined by number of parts rejected divided by the number of parts provided times 1,000,000.
Preventive Action	Action to eliminate the cause of a potential non-conformance or other undesirable situations.
Product	The term "product" used in the Ingersoll Rand Global Supplier Quality Manual refers to any kind of product or service. This includes the physical "manufactured" product, a provided service, engineering work such as drawings and specifications or any other internal product provided in a series of processes. The term "deliverable" is used interchangeably with the term product in the Global Supplier Quality Manual.
PSW	<b>Part Submission Warrant:</b> The warrant contains supplier, part information, required documentation, the supplier application warrant and disposition. The submission approval authorizes the supplier to start production based on PO requirements.
QMS	<b>Quality Management System:</b> A formalized system that documents the structure, responsibilities and procedures required to achieve effective quality management. It is based on the requirements detailed in ISO-9001:2008 with additional enhancements.
SBU	<b>Strategic Business Unit:</b> Ingersoll Rand is organized into different operating units, based upon products or customer types.
SCAR	<b>Supplier Corrective Action Request:</b> A formal request to take action to eliminate the cause(s) of an existing non-conformance or other undesirable situation in order to prevent recurrence.
Supplier	Supplier: shall mean the legal entity identified as the supplier in the applicable contracting document (e.g., purchase order or supply agreement).

# 1.0 Doing Business with Us

## 1.1 Our Company

Ingersoll Rand advances the quality of life by creating and sustaining safe, comfortable and efficient environments. Our people and our family of brands--including Club Car®, Ingersoll Rand®, Thermo King® and Trane®--work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency.

Ingersoll Rand is committed to producing high quality, reliable and cost effective products that are shipped on time, provide customer value, and conform to national and international requirements. Ingersoll Rand and its customers demand and expect defect free products and services. Ingersoll Rand recognizes the importance of our suppliers in providing quality parts and raw materials on time to ensure customer expectations are met.

Suppliers should visit our website ([www.ingersollrand.com](http://www.ingersollrand.com)) to learn more:

<http://company.ingersollrand.com/ircorp/en/discover-us/doing-business-with-us.html>

## 1.2 Purpose

The Global Supplier Quality Manual defines the expectations for all Ingersoll Rand suppliers. The supplier shall meet or exceed the requirements and guidelines defined in this manual, as long as it provides products and/or services to Ingersoll Rand and its customers.

Adhering to the guidelines established in this manual, the supplier should continually improve the processes used to design, manufacture, and deliver products or services to Ingersoll Rand.

Throughout this manual, the word “shall” or “must” indicates a requirement. The word “should” indicates a recommendation.

The English version of this manual is the official version. The English version has precedence in the event of discrepancies with manuals translated into different languages.

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### 1.3 Business Partner Code of Conduct

The supplier shall adopt and comply with the buyer's Business Partner Code of Conduct (BPCOC). The supplier shall take all steps necessary to ensure that its sub-suppliers and subcontractors comply with the BPCOC. At the supplier's request, the buyer will mail the supplier a hard copy. The BPCOC may be amended by Ingersoll Rand from time to time.

The complete Business Partner Code of Conduct is available in multiple languages and can be found by accessing our website at:

<http://www.ingersollrand.com/supplier/BPCOC>

### 1.4 Supplier Diversity

Ingersoll Rand recognizes the value of diversity in its workforce and supply chain. Ingersoll Rand's Supplier Diversity Program includes minority, women, and veteran -owned businesses, both large and small. Each procurement team has direct responsibility to search for and develop diverse-owned businesses.

Ingersoll Rand requires third party certification or government registration to be included in our Supplier Diversity Program. Additional information regarding the program, as well as accepted sources of certification, can be found on our website at:

<http://company.ingersollrand.com/ircorp/en/discover-us/doing-business-with-us/for-ingersoll-rand-suppliers/supplier-diversity.html>

## 2.0 General Supplier Requirements

The term supplier includes suppliers of products and services (together called "products" or "deliverables" in this manual) and distributors that provide deliverables to Ingersoll Rand. The term supplier also includes suppliers of both custom and commercially available products. The supplier shall:

- ❖ Satisfy the requirements established in this manual
- ❖ Maintain a working knowledge of all policies and procedures governing the relationship between the supplier and Ingersoll Rand
- ❖ Obtain the latest version and be knowledgeable of all AIAG documents referenced in this manual from the web-site ([www.aiag.org](http://www.aiag.org))
- ❖ Accept responsibility for the quality, on-time delivery, regulatory compliance, and technical performance of all deliverables

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In the event of a conflict between the terms of this manual and any buyer purchase order or other contract between the parties, unless the parties agree otherwise in writing, the various components of the agreements shall be given the following precedence (in descending order of precedence): 1) the Supply Agreement, if any; 2) a purchase order; 3) an applicable country/region supplement to the buyer's terms and conditions of purchase; 4) the buyer's terms and conditions of purchase and 5) the Global Supplier Quality Manual. Subsequent requirements may take precedence based upon:

- ❖ Customer, market, or site specific operating conditions
- ❖ Strategic Business Unit (SBU) requirements

The supplier shall be responsible for ensuring all sub-tier suppliers adhere to these requirements.

At Ingersoll Rand's discretion, a waiver of certain manual requirements may be granted and approved for a specific product or duration. All such waivers shall be effective only upon express written approval by Ingersoll Rand.

Additional policies and procedure can be found on our web-site at:

<http://company.ingersollrand.com/ircorp/en/discover-us/doing-business-with-us/for-ingersoll-rand-suppliers/global-supplier-quality-manual.html>

## 2.1 Supplier Quality Management System

The supplier shall establish and maintain an effectively documented Quality Management System (QMS) that satisfies the requirements defined in this manual. The QMS must communicate, identify, coordinate and control all activities necessary to design, develop, produce and deliver a quality product or service to Ingersoll Rand and/or its customers.

The supplier shall be compliant with one of the following international quality management standards: ISO9001:2008 or ISO/TS16949 latest revision. The supplier may be registered by a recognized, independently certified third party registrar. Ingersoll Rand may request a copy of the certificate when applicable. Ingersoll Rand may conduct an audit of the supplier's QMS. An audit shall be required to verify the supplier's QMS if the supplier has not achieved compliance, or is not certified. The supplier shall notify Ingersoll Rand of any significant changes in their QMS including loss of certification.

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### 2.2 Supplier Quality Manual

The supplier shall maintain a Quality Manual that includes:

- ❖ Supplier's Quality Management System
- ❖ Supplier's quality policy and objectives
- ❖ Documented procedures
- ❖ Record retention policy

The supplier's management shall be engaged to ensure compliance and continuous improvement of the requirements outlined in their Quality Manual. The supplier shall provide a copy of their current Quality Manual when requested by Ingersoll Rand.

### 2.3 Customer Communications

The supplier shall communicate essential business information to Ingersoll Rand. Such information may pertain to contractual issues including, but not limited to:

- ❖ Inquiries, orders, bids, amendments and invoices
- ❖ Product quality issues relating to design, specifications, changes and notifications
- ❖ Delivery delays and/or shortages
- ❖ Customer feedback and information

Other elements of essential information relating to changes in the supplier's business environment must be communicated immediately, such as:

- ❖ Acquisitions
- ❖ Partial Sale
- ❖ Change of control/executive management
- ❖ Pending litigation
- ❖ Restructuring
- ❖ Bankruptcy

The effective transmission of such information requires that all suppliers identify and register key points of contact with their Ingersoll Rand counterparts. The majority of the communication shall be handled through electronic documents and systems. The supplier should adopt the necessary electronic systems to manage these processes and improve communications with Ingersoll Rand. The supplier is responsible for the validity and accuracy of the documents submitted electronically and must comply with all applicable legal requirements regarding electronic signatures.

All communications, both electronic and otherwise, with Ingersoll Rand shall be in English. A specific

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Ingersoll Rand facility may allow exceptions for direct communications meant for that facility only.

### 2.4 Document Control

The supplier shall establish and maintain procedures to ensure that applicable documents related to the QMS are updated, approved for use, available at points of use and controlled in a consistent manner. The supplier's procedures shall include provisions for Ingersoll Rand design-owned documentation. A master list of documents including the current revision level shall be maintained to prevent use of invalid or obsolete documents. The supplier shall maintain a record of each change implemented.

When the supplier has design responsibility, Ingersoll Rand may request any documentation including drawings, engineering standards, and specifications. The supplier shall notify Ingersoll Rand of any changes by submitting a Supplier Process and Design Change Request. Refer to section 4.8 Change Control for additional information. Obsolete documents shall be destroyed or appropriately identified as such.

### 2.5 Record Retention

The supplier shall establish and maintain records to provide evidence of regulatory compliance and Ingersoll Rand requirements. Retention policies shall define requirements for paper and electronic records. The records shall be:

- ❖ Legible
- ❖ Stored in an environment that prevents document deterioration
- ❖ Readily accessible upon request

The supplier's employees, contractors, and agents who create, receive, use or manage these records are required to comply with the policies and procedures in accordance with customer, warranty, legal and regulatory requirements.

Ingersoll Rand requires the supplier to maintain all records relating to deliverables provided for the life of the product plus one (1) calendar year and any applicable contractual requirements, including but not limited to those for warranty and service for the purpose of this manual, unless otherwise specified. The life of the product begins with product concept and extends until the end of active part production and service requirements. Ingersoll Rand may notify the supplier when a product is no longer considered an active part. The supplier shall provide records to Ingersoll Rand when requested.

The sections of this manual that require records shall conform to this retention policy.

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### 2.6 Confidentiality

The supplier shall use Confidential Information solely for the purposes of supporting the current business relationship with Ingersoll Rand. The supplier shall not disclose Confidential Information to any third party without buyer's express written consent, except that the supplier may disclose Confidential Information to its contractors, sub-suppliers, consultants or agents who have a need to know and have executed confidentiality agreements with the supplier, obligating them to treat such information in a manner consistent with these Terms and Buyer's Non-Disclosure Contract, if any, with supplier. The supplier shall not i) sell buyer parts or components incorporating or containing Confidential Information to any third party, or ii) sell any deliverables produced using Confidential Information to any third party.

Notwithstanding the foregoing, the foregoing shall not restrict or affect supplier's rights to use or disclose information: i) which is or may hereafter be in the public domain through no fault of supplier; or ii) which supplier can show, as reflected by its written documents, was known to it prior to the disclosure by buyer; or iii) which is disclosed to supplier by a third party, with the legal right to disclose, subsequent to buyer's disclosure; or iv) which supplier can show, as reflected by its documents, was independently developed by supplier without the use of the Confidential Information.

The supplier acknowledges that a breach of this Section 2.6 would result in immediate and irreparable harm to buyer, for which there is no adequate remedy at law. The buyer is entitled to equitable relief compelling supplier to cease and desist all unauthorized use and disclosure of Confidential Information. The supplier shall immediately notify buyer of any breach of confidentiality.

Throughout the period of production and service, the supplier shall prevent improper use, loss, or damage to all Ingersoll Rand Confidential Information. At the conclusion of the defined retention period, the supplier shall return or securely dispose of electronic and hard media copies of all such Ingersoll Rand documents. Refer to section 2.5 Record Retention for additional information.

### 2.7 Risk Assessment & Contingency Planning

The supplier shall conduct a risk assessment of their operations that support Ingersoll Rand's production facilities, quality requirements, and delivery schedules. Each assessment should consider, at a minimum, the impact arising from:

- ❖ Natural disasters
- ❖ Geo-political hazards
- ❖ Supply chain disruptions
- ❖ Facility or system issues
- ❖ Information loss
- ❖ Intellectual property claims

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- ❖ Personnel concerns
- ❖ Equipment problems

The supplier shall prepare contingency plans to ensure continued operations at Ingersoll Rand. The supplier shall communicate any critical risk scenario without a contingency plan that may result in a Major Disruption. The supplier shall provide the contingency plans to the buyer when requested. Refer to Section 4.8 Change Control for additional information

## 2.8 Environmental, Health & Safety Compliance

Ingersoll Rand is committed to sound Environmental, Health and Safety (EH&S) operating practices including:

- ❖ Decreased use of hazardous substances
- ❖ Reduced waste and emissions
- ❖ Improved energy and water conservation
- ❖ Greater reuse and recycling of materials
- ❖ Safe and healthy work environments that prevent accidents and injuries
- ❖ Continuous improvement in EH&S performance

Ingersoll Rand suppliers are encouraged to actively implement globally recognized Environmental, Health and Safety management systems. A robust EH&S program reduces operational impact on human health and the environment in a sustainable manner. Recommended programs include, but are not limited to:

- ❖ Occupational Safety and Health Administration (OSHA) VPP
- ❖ ISO 14001
- ❖ OHSAS 18001

The supplier shall work with Ingersoll Rand to reduce the impact of packaging waste through:

- ❖ Reduction or elimination of unnecessary over packaging
- ❖ Implementation of returnable packaging
- ❖ Substitution of current packaging materials for recyclable materials

The supplier shall comply with all applicable EH&S regulations. The supplier shall adhere to and comply with the environmental policy found on our website at:

<http://company.ingersollrand.com/ircorp/en/discover-us/doing-business-with-us/for-ingersoll-rand-suppliers/environmental-compliance.html>

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### 2.9 Cleanliness of Premises

The supplier shall adopt a cleanliness standard. The standard shall create a state of order consistent with the requirements of the deliverables provided to Ingersoll Rand. The standard shall include a process for establishing and maintaining a clean work environment. Ingersoll Rand recommends the 5S program to establish the standard.

### 2.10 Training

The supplier shall provide appropriate training to ensure that employees are competent and qualified to produce quality deliverables. The supplier shall review and document the required skills and competencies necessary for the production, inspection, handling, and delivery of products to Ingersoll Rand and/or its customers. The supplier shall provide appropriate training to ensure that employees follow applicable procedures and instructions. The supplier shall maintain employee records of training, performance metrics, and skills.

### 2.11 Customer Approved Sources

The supplier shall purchase products from Ingersoll Rand approved sources, when specified by the contract. The use of Ingersoll Rand approved sources, including tooling and gauging suppliers, does not relieve the supplier of the responsibility for ensuring the quality of purchased products. The supplier shall be responsible for managing all aspects of the relationship with the approved source including:

- ❖ Quality of product or service
- ❖ Technical performance
- ❖ Source of materials
- ❖ On-time delivery
- ❖ Extension of Credit

### 2.12 Sub-Supplier Management

The supplier shall define expectations for each sub-supplier including:

- ❖ Support of APQP requirements
- ❖ Identification of their role in the supplier's and Ingersoll Rand's products and processes
- ❖ Involvement in problem solving and corrective actions

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The supplier shall work with sub-suppliers in order to meet the requirements provided in this manual.

Areas of emphasis include:

- ❖ Verification of purchased products
- ❖ Incoming product quality
- ❖ Sub-supplier monitoring

Refer to the AIAG CQI-19 document for additional information on sub-supplier management.

### **Verification of Purchased Products & Services**

For each sub-supplier, the supplier shall establish and implement methods, processes, and systems to verify that all deliverables comply with Ingersoll Rand requirements. The supplier shall complete this verification process prior to use for all deliverables provided to Ingersoll Rand. Consistent methods used for verification may include:

- ❖ Control plans
- ❖ Standard work instructions
- ❖ Regular inspection
- ❖ Functional testing
- ❖ Audits

To ensure on-going product quality, Ingersoll Rand may conduct an audit to verify product at the supplier or sub-supplier facility. The scope of each audit will be at the sole discretion of Ingersoll Rand. Ingersoll Rand shall notify the supplier of the planned date of the audit. The supplier must notify the sub-supplier of this requirement. Any verification performed by Ingersoll Rand does not relieve the supplier of the responsibility to provide quality products.

### **Incoming Product Quality**

The supplier shall implement a process to ensure the quality of incoming deliverables meets Ingersoll Rand's requirements. The process should incorporate standard methods including:

- ❖ Statistical data evaluation from the sub-supplier
- ❖ Performance-based receiving inspection
- ❖ Testing based on approved sampling plans
- ❖ Supplier audits or assessments coupled with records of acceptable delivered product quality
- ❖ Part evaluation by an approved laboratory
- ❖ Other methods approved by Ingersoll Rand

All non-conforming material resulting from this process shall be identified and quarantined. The supplier and sub-supplier shall have a process to disposition non-conforming product.

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### Sub-Supplier Monitoring

The supplier should collect objective data on the performance of its sub-suppliers. This data should be used to generate a performance ranking or scorecard. Performance metrics may include:

- ❖ Delivered product quality – Nonconforming Parts Per Million (PPM)
- ❖ Delivery schedule performance with incidents of premium freight
- ❖ Lead-time improvement
- ❖ Major Disruptions
- ❖ Special status notifications from sub-supplier pertaining to quality or delivery issues

Continuous improvement activities should be driven by a sub-supplier's performance against such metrics.

In some cases, sub-supplier performance monitoring may not be conducted due to the business, product or other quality considerations. The supplier may be required to notify Ingersoll Rand of such exceptions.

## 3.0 Supplier Selection & Assessment

Ingersoll Rand expects the supplier to:

- ❖ Abide by our Code of Conduct
- ❖ Provide high quality products that meet or exceed expectations
- ❖ Provide products at a competitive price
- ❖ Deliver products on-time
- ❖ Maintain financial strength to support current business and promote growth

Ingersoll Rand shall verify compliance during the selection and assessment process.

### 3.1 Supplier Assessment

Ingersoll Rand may conduct an On-Site Assessment (OSA) of the supplier's QMS, documentation and manufacturing facilities based upon criteria established in the OSA form. The OSA is generally conducted for potential new suppliers or an existing supplier's new facility. An OSA may be conducted if a supplier has not had an assessment in the last two (2) years. The OSA shall be conducted in person at the supplier's manufacturing facility. A Technical Assessment (TA) of the supplier may be required in addition to the OSA for new suppliers. The TA evaluates the supplier's capability to manufacture the potential product.

Ingersoll Rand shall share the results of the OSA with the supplier and provide a status of:

- ❖ Approved – the supplier may be awarded new business and will be added to the approved

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supplier list

- ❖ Conditionally approved – the supplier may be awarded new business, pending acceptable corrective actions are implemented, and may be added to the approved supplier list
- ❖ Not approved – the supplier fails to meet the requirements and Ingersoll Rand shall not award new business or may be removed from the approved supplier list

The OSA and TA status is manufacturing site specific. Ingersoll Rand reserves the right to conduct more frequent audits and to enter the supplier's facilities to perform an audit. Ingersoll Rand shall notify the supplier of the planned date of the audit. More details on the OSA can be found on our website at:

<http://company.ingersollrand.com/ircorp/en/discover-us/doing-business-with-us/for-ingersoll-rand-suppliers/global-supplier-quality-manual.html>

### **Generic Supplier Process Audit (GSPA)**

Ingersoll Rand may conduct an on-site Generic Supplier Process Audit (GSPA) at the supplier and/or its sub-suppliers. The GSPA ensures the process meets Ingersoll Rand's requirements for capability and error detection and prevention. All processes will be reviewed based on:

- ❖ Continuous improvement
- ❖ New or changed processes
- ❖ Support for global procurement strategy
- ❖ Major Disruptions

### **Commodity Specific Process Audit (CSPA)**

Certain manufacturing processes cannot be verified using normal monitoring and measurement techniques. The deficiencies are only apparent after the product is in use or by utilizing destructive verification methods. These processes include heat treatment, welding, brazing, plating, painting, coating, etc. The supplier must demonstrate the ability to control the elements of these processes to achieve the defined results. The supplier shall establish verification methods for these processes, as applicable:

- ❖ Defined criteria for review and approval of the processes
- ❖ Approval of equipment and documented capability assessments
- ❖ Documentation of training, previous experience and qualification of personnel
- ❖ Use of specific methods and procedures
- ❖ Requirements for records
- ❖ Revalidation of the processes

After the start of production, the audit is a method for identifying continuous improvement ideas and helping with problem solving. Refer to the AIAG CQI specific Special Process manual for additional information.

## **4.0 Advanced Quality Planning**

The supplier shall develop the processes required for the quality planning of product. In the planning of product, the supplier shall work with Ingersoll Rand to:

- ❖ Develop quality objectives and requirements for the product
- ❖ Establish processes, documents, and provide resources
- ❖ Determine required verification, validation, monitoring, inspection and test activities and the criteria for acceptance
- ❖ Define records required to provide evidence of product conformity

### **4.1 Advanced Product Quality Planning**

The supplier shall implement a framework that ensures robust product and process development capabilities. Advanced Product Quality Planning (APQP), published by AIAG, provides a proven and disciplined approach that meets Ingersoll Rand's deliverable requirements. The process should be implemented from initial product concept and continue through the production launch phase of the project.

The supplier shall establish periodic internal reviews during the design and development process and the production launch. The supplier shall evaluate quality risks, costs, lead-times, critical paths and other items as appropriate throughout the entire APQP process. The reviews shall:

- ❖ Monitor progress of the design and development of deliverables
- ❖ Evaluate the results compared to the product requirements
- ❖ Identify potential problems and develop corrective actions
- ❖ Analyze the product and/or process utilizing FMEA methodology
- ❖ Provide input for management reviews

Ingersoll Rand may request the results of reviews based upon potential risk that a product has to Ingersoll Rand's business or products. Refer to the AIAG APQP and FMEA manuals for additional information.

#### **Planning**

The supplier shall develop a project plan with:

- ❖ Project tasks, target dates and assigned responsibilities
- ❖ Time allocated for completing initial designs, supplier selection, product development, testing, tool design, manufacturing, supplier production try-outs and Production Part Approval Process (PPAP)

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- ❖ Sample requirements, PPAP quantities, and delivery dates
- ❖ Ingersoll Rand Product Development Process (PDP) alignment when applicable

### **Product Design and Development**

When design responsible, the supplier shall complete the initial product design and maintain a record of all changes for each product. Ingersoll Rand shall be notified of all changes impacting product form, fit function or potential influence on user experience. All changes shall be reviewed, verified and validated, prior to the implementation and acceptance by Ingersoll Rand. The review of design changes shall include an evaluation of:

- ❖ Product and mating parts in the assembly
- ❖ Manufacturing and downstream processes
- ❖ Purchasing costs

The supplier shall verify that the product meets the requirements established during the planning activities. Design verification shall be conducted independent of the responsible design team. The verification results shall be reviewed periodically with management. The supplier may be required to participate in design reviews with the Ingersoll Rand project team.

### **Product and Process Validation**

The supplier should begin the Product and Process Validation phase of APQP when the tooling, capital equipment and/or gauging is delivered. The supplier shall test and verify that their process outcomes satisfy the designs and/or specifications derived in the Product Design and Development phase. The process capacity shall meet the contracted production rate prior to acceptance.

Ingersoll Rand may specify the validation plan when it has design responsibility. When the supplier has design responsibility, Ingersoll Rand reserves the right to approve the validation plan. The supplier shall perform the validation testing. The testing shall ensure the resulting product satisfies the requirements for the application and its intended use. The supplier's engineering function shall define and finalize specific test procedures to validate the design. The supplier is responsible for any outsourced services used in the validation process. Refer to section 4.13 Statutory & Regulatory Conformity for additional requirements.

Production intent materials, tooling, processes and sub-suppliers should be used to produce products for validation testing. Ingersoll Rand may require product for testing requirements.

Ingersoll Rand shall approve parts via the PPAP submission. The supplier shall not ship any production parts until signed approval is received from Ingersoll Rand per agreed method or documentation (i.e. Part Submission Warrant). Refer to section 4.5 Product Approval Process.

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### Production Launch

The supplier begins the Production Launch phase of the APQP when PPAP approval or interim approval is provided by Ingersoll Rand. The supplier shall utilize the Early Launch Containment methodology to reduce risk and improve quality prior to product delivery.

Once the production process has stabilized, Lessons Learned and Best Practices can be documented and reviewed.

## 4.2 Customer-designated Special Characteristics

Ingersoll Rand drawings and specifications may designate product features as Special Characteristics, Critical-to-Quality or other designations. These features may be designated by various symbols depending on each SBU. Typically, these characteristics influence:

- ❖ Product form, fit or function
- ❖ Compliance to regulations
- ❖ Safety requirements
- ❖ Customer satisfaction

The supplier shall demonstrate process capability through statistical controls for all designated special characteristics and maintain control for all measurement methods used. The target process capability for special characteristics shall be (Cp, Cpk, Pp, Ppk):

- ❖ Short-term: greater than or equal to 1.67
- ❖ Long-term: greater than or equal to 1.33

The Ingersoll Rand SBU may define the exact process capability requirements for each special characteristic. If no special characteristics are defined, the supplier shall determine which product and/or process characteristic should be used to evaluate capability. Ingersoll Rand reserves the right to approve the characteristics selected for evaluation. Ingersoll Rand shall define the requirements in the PPAP request letter when the volume does not support conducting a process capability study.

For any deviation of process capability, the supplier shall initiate an internal corrective action plan, including 100% inspection, when process capability is not met. The supplier shall maintain records of all corrective actions. Refer to the AIAG PPAP and SPC manuals for additional information on process capability.

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### 4.3 Measurement System Analysis

The purpose of the Measurement System Analysis (MSA) is to assess the accuracy, repeatability, and reproducibility of each measuring device used in the manufacture of products supplied to Ingersoll Rand. The supplier shall implement a procedure to evaluate each type of measurement system. An MSA shall be conducted on all new or modified measurement systems. Analytical methods and acceptance criteria shall conform to Ingersoll Rand requirements. The supplier shall develop a corrective action for any measurement system found that does not meet the requirements, including:

- ❖ Containment of suspect and non-conforming products
- ❖ Notification to Ingersoll Rand of affected products
- ❖ Potential last good inspection/calibration/MSA date
- ❖ Interim corrective action
- ❖ Repair, replacement and/or recovery plans
- ❖ Certification by outside source

Ingersoll Rand may request MSA results and/or sample parts from the supplier to perform comparative correlation studies with the supplier's measurement results. Refer to the AIAG MSA manual for additional information.

### 4.4 Calibration and Verification Records

The supplier shall implement a calibration and verification system or procedure to ensure all gauges, jigs, fixtures, poka-yoke devices, measuring and testing equipment are qualified at defined frequencies. All measuring and test equipment must be:

- ❖ Identified with unique traceability and qualification status
- ❖ Calibrated and/or verified at a specified frequency to approved standards
- ❖ Adjusted or re-adjusted, as required
- ❖ Prevented from improper adjustment
- ❖ Protected from damage during use, handling and storage

Records shall be maintained for all gauges, measuring and testing equipment including:

- ❖ Equipment identification and calibration standard
- ❖ Revisions for engineering changes
- ❖ Any out-of-specification readings
- ❖ Impact assessment for out-of-specification condition
- ❖ Statements of conformity after calibration or verification

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The supplier shall notify Ingersoll Rand of potential suspect product when an out-of-calibration condition is detected after production launch. The supplier shall take appropriate actions to prevent further use of discrepant product at Ingersoll Rand. All suspect products at the supplier must be identified and quarantined. Refer to section 5.0 Non-Conforming Product for additional information.

Computer software and its application shall be verified and documented on a regular basis when used for monitoring or measuring product conformity.

The supplier should reference ISO 17025 as a guideline for compliance.

### 4.5 Product Approval Process

Ingersoll Rand utilizes the PPAP requirements for product approval. All suppliers shall comply with these requirements for all new products and any approved changes to production parts. Ingersoll Rand shall determine the PPAP level required. The Ingersoll Rand PPAP owner shall work with the supplier to define the PPAP submission supporting data via the Part Submission Warrant (PSW) and the PPAP production run quantity. The PPAP run parts and the supporting data should be conducted utilizing production intent process. Reference the PPAP chart for submission requirements:

Level 1	❖ Parts Submission Warrant (PSW) only with Appearance Approval Report for designated appearance items
Level 2	❖ PSW with product samples and limited supporting data
Level 3	❖ PSW with product samples and complete supporting data ❖ Default PPAP level
Level 4	❖ PSW and other requirements as defined by Ingersoll Rand ❖ Level reserved for special applications only
Level 5	❖ PSW with product samples and complete supporting data reviewed at the supplier's manufacturing location. ❖ Requires onsite review by Ingersoll Rand

The supplier shall refer to the PPAP workbook on our website at:

[https://company.ingersollrand.com/content/dam/ir-corp/documents/pdf/Supplier-QUAL\\_TM\\_0027-01\\_PPAP\\_Package.xls](https://company.ingersollrand.com/content/dam/ir-corp/documents/pdf/Supplier-QUAL_TM_0027-01_PPAP_Package.xls)

Ingersoll Rand will provide a status of:

- ❖ Approved – the product or service meets all requirements and the supplier is authorized to deliver production quantities.

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- ❖ Interim Approval – the product or service may be delivered for a specific time or quantity while the supplier implements the required corrective actions. The supplier must re-submit the PPAP to Ingersoll Rand for approval.
- ❖ Rejected – the product or service fails to meet the requirements and the Supplier is not authorized to deliver the product or service. After implementing the corrective actions identified, the supplier must re-submit the PPAP to Ingersoll Rand for approval.

Ingersoll Rand shall notify the supplier of the concerns and/or issues that result in a product status of Interim Approval or Rejected. Refer to the AIAG PPAP manual for additional information on product approval.

### 4.6 Laboratory Requirements

The supplier should establish and maintain internal laboratory capability for frequently used services, such as gauge calibration. Laboratory services provided by the supplier, either internal or external, shall be qualified to perform the required inspection, test or calibration services. The laboratory scope shall be defined and technical requirements reviewed for:

- ❖ Adequate laboratory procedures
- ❖ Competent laboratory personnel
- ❖ Testing procedures
- ❖ Capability of performing test and traceability to standards
- ❖ Related documents

External laboratories may require accreditation to ISO/IEC 17025 or equivalent national standard.

At any time, Ingersoll Rand may request production samples to perform analysis and testing.

### 4.7 Production Monitoring

The supplier's control plan shall identify all Ingersoll Rand requirements and the method of inspection and when applicable functional verification to be performed. Ingersoll Rand may specify certain criteria for inspection methods and functional verification. The control plan establishes the method and frequency of monitoring and measuring the product and processes to ensure conformity to Ingersoll Rand requirements. The supplier shall establish procedures to control non-conforming product or service. The non-conforming product shall not be released or delivered unless approved by the supplier's authorized representative and, when applicable, Ingersoll Rand. Refer to section 5.5 Customer Waiver for additional information.

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### Layout Inspection

Ingersoll Rand may request the supplier to submit an annual layout inspection report. If a non-conformance is found, the supplier shall notify Ingersoll Rand. Ingersoll Rand may issue a Supplier Corrective Action Request (SCAR) for supplier identified non-conformances with the products. Refer to section 5.2 Corrective Actions.

## 4.8 Change Control

After product approval, the supplier shall control all changes to Ingersoll Rand deliverables. The supplier's QMS shall include procedures to manage all changes to engineering documents, manufacturing equipment and tooling, test and measurement equipment and all materials used in the process.

Any changes to engineering drawings, specifications, materials, manufacturing processes or other documents require **PRIOR APPROVAL** by the authorized Ingersoll Rand representative. The Supplier Process and Design Change Request form shall be used by the supplier to notify Ingersoll Rand prior to any changes.

Some examples requiring notification and when applicable PPAP re-submission:

- ❖ Drawing or specification change
- ❖ Material change or new material supplier
- ❖ Special process change including heat treatment, plating, coating, etc.
- ❖ New or modified production tooling
- ❖ Re-locating equipment within a site
- ❖ Manufacturing location change
- ❖ New sub-supplier or sub-supplier process change
- ❖ New or modified testing and/or measuring equipment
- ❖ Packaging and/or labeling change
- ❖ Shipping to new Ingersoll Rand facility

Ingersoll Rand shall be notified of planned changes prior to starting the project. The implementation date shall be determined by Ingersoll Rand and the supplier.

Various new process and product capability studies and approvals may be required as a result of the planned changes. The acceptance criteria for a planned change shall be agreed upon by Ingersoll Rand and the supplier prior to implementation. The process for accepting a change may require substantial time to complete all tasks identified. Refer to section 4.5 Product Approval Process for additional information.

In the event of an unauthorized change, the supplier must notify Ingersoll Rand within 24 hours of detecting

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the change. The supplier may be placed on New Business Hold (NBH) if the proper notifications and processes are not followed.

The supplier shall request approval from each Ingersoll Rand site affected by a change.

The supplier shall refer to the Supplier Process and Design Change Request form on our website at:

[https://company.ingersollrand.com/content/dam/ir-corp/documents/excel/Supplier-QMOD-0002.16\\_SPDCR.xlsx](https://company.ingersollrand.com/content/dam/ir-corp/documents/excel/Supplier-QMOD-0002.16_SPDCR.xlsx)

### 4.9 Preventive & Predictive Maintenance

The supplier shall plan and operate a comprehensive maintenance system for the production equipment used to support products. The maintenance system, at a minimum, shall cover:

- ❖ Planned maintenance activities
- ❖ Packaging and preservation of equipment, tooling and gauging
- ❖ Availability of replacement parts for key manufacturing equipment
- ❖ Documenting, evaluating and improving maintenance objectives and performance
- ❖ Predictive methods to reduce and/or eliminate unscheduled interruptions

### 4.10 Customer-owned Assets

Custom products may require Ingersoll Rand-owned assets to be consigned to the supplier. The assets shall be used exclusively for the development, production, and testing of Ingersoll Rand products. Such assets may include, but are not limited to:

- ❖ Production tooling and fixtures
- ❖ Gauges
- ❖ Testing and measuring equipment
- ❖ Dedicated processing equipment
- ❖ Prototype or production components
- ❖ Licensed software and hardware

The purchase order shall identify all required assets, applicable specifications, maintenance requirements and expected life of the asset. The supplier shall adhere to the terms and conditions established by the Bailment Agreement. The supplier must attach an approved Ingersoll Rand asset tag or utilize another approved method of marking. The supplier must maintain a log of all Ingersoll Rand-owned assets. Ingersoll Rand may request the asset log and/or conduct an audit of the assets.

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The supplier shall record and maintain a log of operational data for each asset including, but not limited to:

- ❖ Maintenance history
- ❖ Usage
- ❖ Capability information and capacity records
- ❖ Tool changes for perishable tooling or wear components
- ❖ Tool modifications and engineering changes
- ❖ Updated pictures of each asset

The supplier shall immediately notify Ingersoll Rand if any asset is found to be defective or unsuitable for production. All tool modifications and design changes shall be recorded and maintained. Records of all repair or replacements actions must be submitted to Ingersoll Rand.

The supplier shall not transfer, or consign to another party, any Ingersoll Rand-owned assets without prior written approval from Ingersoll Rand. Any asset transfer may require a new PPAP approval before production resumes. Refer to section 4.5 Product Approval Process for additional information.

The supplier shall not disposition any Ingersoll Rand-owned tooling without prior written approval from Ingersoll Rand.

### 4.11 Identification & Traceability

The supplier shall properly identify product throughout the realization process and establish a system that:

- ❖ Identifies the production status
- ❖ Verifies product acceptance with regards to inspection and testing
- ❖ Properly controls product disposition

The supplier shall create a traceability method for unique identification of each part or material lot, unless otherwise agreed upon by Ingersoll Rand. The supplier shall work with Ingersoll Rand to develop and approve an acceptable method, location and content for marking the product. The supplier shall maintain all records necessary to ensure product quality.

### 4.12 Preservation of Material

The supplier shall develop a plan for proper identification, handling, packaging, storage, protection and preservation of all Ingersoll Rand products and materials. The preservation plan shall apply to all internal and external supplier processes. The plan shall apply to the storage and delivery of all products prior to assembly at Ingersoll Rand or its customer facilities. As required, material handling, packaging and storage shall be designed to:

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- ❖ Prevent contamination
- ❖ Prevent part-to-part contact (except bulk material)
- ❖ Reduce environmental effects on product
- ❖ Prevent degradation of product
- ❖ Prevent loss or damage in transport
- ❖ Properly manage shelf life of perishable products

The supplier should utilize an inventory management system to optimize inventory, reduce risk of obsolete product, and ensure stock rotation.

### 4.13 Statutory & Regulatory Conformity

The supplier's product shall be certified to applicable standards as required (e.g. Underwriters Laboratory (UL), European Union (CE mark), Canadian Standards (CSA), AMSE, RoHS WEEE, REACH etc.). The supplier shall ensure that certification is maintained. Evidence shall be submitted along with PPAP documentation, when required.

The supplier's product or service shall meet all statutory and regulatory requirements for the locations where it is manufactured and used. These requirements shall be properly documented and records maintained.

The supplier shall comply with all buyer requests for information and other reasonable buyer requirements regarding Conflict Minerals. For more information see the Conflict Minerals section of our website at:

<http://company.ingersollrand.com/ircorp/en/discover-us/doing-business-with-us/for-ingersoll-rand-suppliers/conflict-minerals.html>

The supplier shall provide samples, testing, environmental and Material Safety Data Sheet (MSDS) information when requested. The MSDS is required for but not limited to:

- ❖ Rust prohibitive
- ❖ Lubricating oil and grease
- ❖ Acids and caustics
- ❖ Cleaners
- ❖ Other chemical material that is used while producing or assembling the product

## **5.0 Non-Conforming Product**

When a non-conformance occurs, the supplier shall:

- ❖ Identify the non-conformance
- ❖ Minimize its impact through proper containment
- ❖ Determine the true root cause
- ❖ Implement corrective action
- ❖ Establish controls to prevent the non-conformance from recurring

In the process of resolving the non-conformance, corrective actions, lessons learned and best practices are documented and shared, when appropriate.

### **5.1 Control of Non-Conforming Product**

The supplier shall identify and control in a quarantined location any non-conforming product when:

- ❖ Product requirements are not met
- ❖ Packaging is incorrect
- ❖ Labeling or marking misidentifies the product
- ❖ Product status is unknown or suspect

The supplier shall implement a procedure to define the controls, related responsibilities and authority to manage non-conforming product. The non-conforming product must be controlled until the supplier can:

- ❖ Determine and eliminate root cause of non-conformance through process improvements
- ❖ Eliminate the detected non-conformance by Ingersoll Rand-approved rework and/or repair
- ❖ Obtain approval to “Use-As-Is” from Ingersoll Rand. Refer to section 5.5 Customer Waiver for additional information.
- ❖ Scrap or reject product to prevent unintended use
- ❖ Re-allocate product to a different Ingersoll Rand-approved application (known as re-grade)

The supplier shall create process work instructions to define and control rework and repair processes. Any rework or repair process, not identified within the approved PPAP documents, must be approved by Ingersoll Rand prior to beginning. Customer approval does not relieve the supplier of any liability regarding product quality. All corrected non-conforming product must be re-verified to demonstrate conformity to the requirements. The supplier must properly identify each product or package as repaired or reworked.

The supplier shall immediately notify Ingersoll Rand of any defective products found at their facility that may have been delivered to Ingersoll Rand and/or its customers. When potential non-conforming products have

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been shipped, the supplier must implement appropriate containment procedures and actions. The actions should include:

- ❖ Containment of product at the supplier's or sub-suppliers facility, in transit and at Ingersoll Rand and/or its customer
- ❖ Notification to the Ingersoll Rand plant of conforming product availability and shipment dates
- ❖ Product sorting at Ingersoll Rand and/or its customer
- ❖ Approved third party sorting provisions when supplier is unable to send representatives

The supplier shall maintain records of the non-conformance and subsequent actions taken. Ingersoll Rand reserves the right to audit any non-conformances. Ingersoll Rand may issue a Supplier Corrective Action Request (SCAR) for supplier identified non-conformances with the product(s).

## 5.2 Corrective Actions

Ingersoll Rand may issue a Supplier Corrective Action Request (SCAR) in the identification and resolution of non-conformance detected at Ingersoll Rand's facilities and by our customers. The SCAR may be issued based upon incoming inspections, in-process rejects, customer rejects, field failures, packaging or labeling issues.

The supplier is expected to respond to all SCARs issued in the format received. When a supplier receives a SCAR, Ingersoll Rand's 24-14-30 policy shall be followed:

### Initial Response within 24 hours:

- ❖ Acknowledge receipt of SCAR upon notification
- ❖ Identify all suspect product
- ❖ Notification of quantity of suspect material in route to Ingersoll Rand and/or its customers
- ❖ Immediate containment action taken
- ❖ Interim plan for supporting Ingersoll Rand production with certified product

### Corrective Action Plan within 14 days:

- ❖ Use problem solving techniques to determine the root cause of the non-conformance. Refer to section 5.3 Problem Solving for additional information
- ❖ Detailed plan for implementing corrective actions to control and prevent recurrence
- ❖ Disposition of suspect products

### Final Report within 30 days:

- ❖ Implemented corrective actions with supporting data
- ❖ Verify effectiveness of corrective actions

If the supplier fails to respond appropriately, the supplier may be placed on New Business Hold and may be

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removed from the approved supplier list.

### **Controlled Shipping**

If escalation of a non-conformance is necessary, Ingersoll Rand may place a supplier in Controlled Shipping (CS). Controlled Shipping ensures a rigorous inspection process to protect Ingersoll Rand and its customers from receiving non-conforming product. The supplier shall utilize a separate and distinct area for redundant inspection of the product. Ingersoll Rand will determine when a supplier shall be placed into Controlled Shipping Level 1 (CS1) and/or Controlled Shipping Level 2 (CS2). Ingersoll Rand may place a supplier immediately into CS2, bypassing CS1.

For CS1, the supplier must provide certified product to Ingersoll Rand. The supplier shall provide the CS1 inspection results at the specified frequency determined by Ingersoll Rand. The supplier shall continue its problem solving activities and corrective action implementation.

In the event that CS2 is required, a meeting will be scheduled between key stakeholders within Ingersoll Rand and the supplier. An approved third party provider must be utilized to certify the supplier's product prior to use. Ingersoll Rand shall determine the location where the third party provider must perform the inspections. The results of the third party inspections shall be provided to Ingersoll Rand at the specified frequency. The supplier shall continue its problem solving activities and corrective action implementation. If a CS1 inspection has been established, the CS1 requirement remains in effect even with the addition of a CS2 inspection requirement.

The supplier is responsible for all costs associated with CS. The supplier shall remain in CS1 and/or CS2 until the Exit Criteria have been met. When placing a supplier in CS, Ingersoll Rand may consider:

- ❖ Severity or duration of a non-conformance
- ❖ Repeat SCARs
- ❖ Supplier's process is not capable
- ❖ Warranty issues
- ❖ Major Disruptions
- ❖ Current containment activity is inadequate
- ❖ Production Launch first pass yield results inadequate

Additional details necessary for each occurrence shall be defined when the CS process is initiated. Ingersoll Rand shall provide the Exit Criteria for CS1 and/or CS2 when the process is initiated.

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### 5.3 Problem Solving

The supplier should adopt the “Zero Defects” mindset to reduce and eliminate non-conformances. When a non-conformance occurs, the goal is to quickly and effectively identify the problem, minimize its impact, determine the root cause, implement corrective actions and prevent recurrence. A robust problem solving methodology leads to effective root cause identification and elimination. Ingersoll Rand recommends the 8D Problem Solving method. The supplier should adopt this method or another industry recognized disciplined approach that covers, at a minimum:

- ❖ Establish the problem solving team and key contact person – include key stakeholders, experts and direct involved personnel
- ❖ Define the problem scope – state the problem using quantitative terms identifying who, what, where, why, when and how
- ❖ Develop an interim containment plan – immediate actions to contain product at all locations
- ❖ Identify all potential root causes – analyze and verify source of the problem including what process failed, why failure was not detected and what systems failed to prevent the non-conformance (3 root cause approach)
- ❖ Develop corrective actions to prevent recurrence – verify actions resolve the problem and do not create unintended effects
- ❖ Implement corrective actions – update required process documentation and validate effectiveness
- ❖ Implement preventive actions – take steps to prevent similar problems from occurring in other products or processes and document Lessons Learned and Best Practices
- ❖ Review and recognize the team – review and approve completion with management

The supplier shall evaluate the effectiveness of its problem solving process through feedback of internal audits, process audits, performance data and review of repeat SCARs.

Error-proofing methods are effective corrective actions to eliminate recurrence of a root cause when properly implemented. The supplier shall use error-proofing methods to identify potential design and/or process improvements and implement when applicable.

Refer to the AIAG CQI-20 document for additional information on problem solving. Refer to the AIAG CQI-18 document for additional information on error-proofing.

### 5.4 Cost of Poor Quality (COPQ) Recovery

The supplier shall be responsible for all costs incurred by Ingersoll Rand and its customers in conjunction with a SCAR or any failure of the supplier’s deliverables. Ingersoll Rand may take immediate actions to

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satisfy customer requirements while notification of the issue is provided to the supplier. A Cost Recovery Notice shall be provided with details regarding costs incurred. The supplier shall respond to a Cost Recovery Notice when received within 10 days.

Potential costs incurred include, but are not limited to:

- ❖ Incoming inspections
- ❖ Necessary sorting activities
- ❖ Return shipments or shipments to third party locations
- ❖ Customer management for warranty and field inspections
- ❖ Analysis of warranty and field returns
- ❖ Rework, repair or scrap of product at Ingersoll Rand and/or its customer's facilities
- ❖ Premium freight charges
- ❖ Production downtime
- ❖ Additional labor costs including overtime and extra manpower
- ❖ Process changes for accommodating product
- ❖ Additional inspections or process controls
- ❖ Costs to manage actions taken

Ingersoll Rand may place a supplier on New Business Hold as a result of COPQ, SCARs, or other concerns. The supplier may be removed from the approved supplier list.

### 5.5 Customer Waiver

The supplier must obtain approval from Ingersoll Rand for temporary changes to existing product and processes prior to releasing product for shipment or authorizing production to proceed. The supplier shall utilize the supplier Deviation Request (SDR) for these basic steps:

- ❖ Initiate a deviation with detailed information
- ❖ Review deviation with Ingersoll Rand representative
- ❖ Notify Ingersoll Rand of delivery date
- ❖ Mark affected product accordingly
- ❖ Manage deviation quantity or time
- ❖ Monitor completion of corrective actions

The supplier and Ingersoll Rand shall evaluate the SDR to reduce adverse impact on the customer, operations, safety, and environment. Product engineering may be required to perform analysis to validate any adverse effects the deviation may have on the design integrity for form, fit or function. The supplier shall provide samples, when requested, of the deviation to evaluate impact of the change in both the design and in use at the Ingersoll Rand facility. Any costs associated with testing, evaluating or accommodating deviated product are the supplier's responsibility. Ingersoll Rand will approve or reject the SDR. Excessive

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use of deviation requests are an indication that the supplier's QMS may not be performing as expected.

The suppliers shall refer to the supplier Deviation Request form on our website at:

[https://company.ingersollrand.com/content/dam/ir-corp/documents/excel/Supplier-QMOD-0002.15\\_SDR.xlsx](https://company.ingersollrand.com/content/dam/ir-corp/documents/excel/Supplier-QMOD-0002.15_SDR.xlsx)

## 5.6 Continuous Improvement

The supplier shall strive to continually improve its products, processes and systems. The supplier shall conduct regular reviews of:

- ❖ Quality policy and objectives
- ❖ Audit results
- ❖ Data analysis
- ❖ Corrective and preventive actions

The process of continuous improvement must be included in the goals and objectives of the entire supplier organization. Continuous improvement can reduce potential risks and prevent possible non-conformances. Refer to section 4.8 Change Control for additional information.

## 6.0 Customer Satisfaction

Customer satisfaction provides an important feedback to the supplier on their performance. The supplier shall establish a method to evaluate feedback from Ingersoll Rand in these areas:

- ❖ Part quality performance
- ❖ Warranty and field returns
- ❖ Delivery schedule performance
- ❖ Ingersoll Rand issued SCARs
- ❖ Major Disruptions

The supplier shall monitor the performance of their manufacturing processes to demonstrate compliance with Ingersoll Rand requirements for product quality and efficiency of the process. The supplier should use subjective information to receive additional feedback.

Ingersoll Rand monitors its suppliers for these items and may place a supplier on New Business Hold as a result.

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# **7.0 Global Logistics**

The supplier shall comply with the requirements established by Ingersoll Rand Global Logistics and any specific regional requirements.

The supplier shall use Electronic Data Interchange (EDI) or Ingersoll Rand-specified equivalent system for receiving forecast requirements and communicating shipping information.

### **Incoterms**

The supplier shall adhere to the applicable shipping requirements contained in the Ingersoll Rand Terms & Conditions, unless otherwise specified. Exceptions shall be granted and approved by Ingersoll Rand Global Logistics.

### **Standard Routing Instructions**

The supplier shall interface with Ingersoll Rand and/or third party managed portals for standard routing instructions. These routing instructions shall apply for inbound shipments where Ingersoll Rand is responsible for freight payment. Ingersoll Rand shall provide detailed information for system usage during the supplier onboarding process.

### **Returnable Packaging**

The supplier shall interface with Ingersoll Rand and/or third party managed portals for securing, managing, and controlling returnable packaging. Ingersoll Rand shall provide detailed information for system usage during the supplier onboarding process.

### **Shipment of Hazardous Materials and Dangerous Goods**

The supplier shall comply with all applicable domestic and international transport regulations when shipping hazardous materials and/or dangerous goods to Ingersoll Rand, its subsidiaries or customers. Examples of prescribed regulations include, but are not limited to:

- ❖ U.S. Department of Transportation (DOT) 49 CFR
- ❖ IATA/ICAO for international and domestic air shipments
- ❖ IMDG for international dangerous goods by sea.