

Graco Supplier Quality Manual



2017





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1.0. Quality Statement

Founded in 1926, Graco is a world-class leader in fluid handling systems and components. Graco products move, measure, control, dispense, and apply a wide range of fluids and viscous materials used in vehicle lubrication, commercial and industrial settings. With headquarters located in Minneapolis, Minnesota, Graco manufactures products that are sold worldwide. What sets Graco apart from our competitors is our history, a focus on highly-engineered, quality products, industry-leading innovation and the solid partnerships we form with customers and suppliers around the world.

As a Global Procurement Department, our mission is to provide leadership in the acquisition of quality materials, received on time, at the lowest overall cost. We will do this by understanding and leveraging all of Graco's assets, which include but are not limited to:

- ❖ Our position as a market leader
- ❖ Our growth history and potential
- ❖ Our financial strength
- ❖ Our excellent quality products and product line

We will negotiate effective solutions between Graco and our suppliers, using ethical purchasing practices and innovative systems. We will choose those suppliers that best allow us to serve both our internal and external customers. We will partner and optimize our supplier base to reward those suppliers who proactively support our business through technical innovations, responsiveness and cost competitiveness.

2.0. Intro

At Graco, Excellence is more than a buzzword. It is the premise that the entire business is built around. At Graco, we aim for the highest quality in all products. To achieve this unmatched quality, we need to partner with world class suppliers. Graco Suppliers play a key role in our commitment to excellence. We believe that excellence is a direct result of good business management, strong ethics and continuous improvement. Graco expects all of our suppliers to understand the guidelines identified in this manual and to comply with all applicable laws.

2.1. Scope

The guidelines, regulations, standards and processes depicted in this manual apply to all Graco suppliers in all locations globally. The details outlined in this manual are the minimum mandatory requirements for approval in production of goods and services by suppliers to Graco.

2.2. Purpose

The purpose of this manual is to communicate all of the expectations, regulations, and standards for all processes that are involved with being a Graco supplier.

2.3. Background

Graco's supplier quality system requirements are based on the latest addition of ISO 9001 Quality System Requirements.

3.0. Supplier code of conduct

Graco is committed to conducting its worldwide business according to the highest standards of ethics and integrity and in compliance with all applicable laws and regulations. We firmly believe that ethical conduct has helped and will continue to help us fulfill our mission of serving our stakeholders through sustained profitable growth. Please reference the hyperlinked button below to find the full Graco Supplier Code of Conduct and agree to all of the policies outlined.

[Supplier Code of Conduct](#)



4.0. QMS Requirements

Graco suppliers must develop, document and maintain a Quality Management System (QMS) to ensure that the product and business processes align with Graco’s requirements. We require suppliers to operate within an effective Quality Management System. Present and potential suppliers certified to the latest ISO 9001 standards or equivalent.

5.0. Self QSA and Info Survey

All suppliers are required to complete a Supplier Information Survey and a Quality Systems Self-Assessment. In addition, a potential supplier may be required to host an onsite QMS audit. Please refer to the link below.

[Supplier Info Survey/ QSA](#)

6.0. On Site QSA

All new suppliers must be qualified and approved by Purchasing. Approval is based on an assessment process which includes a review and evaluation conducted by a trained team selected by the responsible Category Manager. Graco ideally looks for suppliers with an ISO 9001:2008/ TS 16949:2009 certification. While this is sought after by Graco, it is not required. If supplier is not ISO certified, a supplier audit will need to take place. A common scorecard will be used by Graco in the Quality System Assessment, which considers quality systems, planning and execution, sub supply management, senior management, personnel, defect management, process control, inspection and test, calibration, storage, facilities and workplace environment.

7.0. Process Specific Audit

Through a Process Specific Audit, we will dig into the series of steps in place that lead to producing a product that is up to Graco’s standards. By auditing a process, conformance to required steps from input to output will be verified. The Process Specific Audit may look at the material inputs, people, activities, quality measures and the final output.

8.0. Part Approval

All parts sent to Graco must meet all necessary product acceptability requirements. This includes all dimensions and key characteristics specified on Graco engineering drawings and any applicable referenced standards. Before a part can be used in production, it must be approved by Graco using the first article process. For training of this process, please refer to the FA training presentation linked below.

Suppliers will use the FA forms below when submitting to Graco. Please refer to the link below to access the latest revision of Graco’s First Article package.

[First Article Package](#)

[First Article Training](#)

9.0. RFC process

Once a part has been approved by Graco, the supplier and all sub tier suppliers are not authorized to make changes to a product or the process used to manufacture the product unless authorized by Graco. The supplier must notify and submit any proposed changes along with the intentions and reasons behind the change prior to making any changes. A Graco Supplier Request for Change form must be submitted, and the supplier must receive written authorization from the Graco Supplier Quality representative. Any changes made without written approval will result in a breach of the Graco purchase order terms and conditions. Please refer to the hyperlinked button below to access the Graco Supplier Request for Change document.

[Request for Change](#)

10.0. Production

10.1. Request for Quotation

Available in the Graco Supplier Portal is an online Request for Quotation module. Please refer to the link below to access the portal. The Graco Supplier Portal is an operating portal for all companies supplying parts or services to Graco Inc. The portal provides profile information, quality data reports and order management functions to the suppliers. The portal contains an online RFQ management system that will require quotes to be entered online and will store quote history. Please refer to the hyperlinked button below to access the Graco Supplier Portal.

[Graco Supplier Portal](#)

10.2. Weekly Reports

Weekly Forecast and Open Order reports will be sent to suppliers every Sunday night. The reports are emailed to the company representative who receives the purchase order. On the forecast report, weekly buckets will be shown for the following 8 weeks, and after 8 weeks there will be forecast buckets for the remainder of the year. The supplier will also receive an open purchase order report against the forecast. The reports should be reviewed each Monday and the Requestor / Sourcing Specialist notified if there are any discrepancies with the information listed on the report.

10.3. Purchase Order

Purchase Orders – On time delivery expectation is 100%. On time is defined as five (5) days early, zero (0) days late to the dock date on the PO. If an order is going to be delayed please contact the Requestor with the revised delivery date and an explanation for the delay. The planner will then review the revised date and advise if the change is acceptable. Please ask for a revised PO if the date is accepted. If the planner is unavailable, the Sourcing Specialist should be contacted for approval. Only orders placed inside lead-time require confirmation. Please follow the Graco Supplier Network link shown below:

[Purchase Orders](#)

10.3.1. Due date

Within the due date specified by the Graco purchasing representative, on time is defined as 5 days early to 0 days late. Any fluctuations or conflicts with due dates must be communicated with Graco

10.3.2. Quantity

Quantities stated in this Purchase Order are the maximum quantities covered and quantities in excess will not be accepted by Buyer. Buyer reserves the right to return for credit any quantities delivered in excess at the risk and expense of Seller.

10.3.3. Invoice Discrepancies

Purchase orders should be reviewed to ensure that the quantity, price, revision level and delivery date are in accordance with the contract. If an error is found the Sourcing Specialist should be contacted to resolve any discrepancy prior to the shipment of parts.

10.3.4. Price

Seller shall furnish the Goods and/or Services covered by this Order in accordance with the prices and delivery schedule stated on the purchase order. Unless otherwise specified in writing by Graco, delivery must be made freight collect via a Graco specified carrier. If prices and/or delivery dates are not stated, the supplier shall offer its lowest prices and best delivery dates. All prices include all applicable taxes and other government charges.

10.3.5. Changes

The Graco buyer has the right to make changes to the purchase order at any time. The buyer may suspend performance of this Order, in whole or in part, make changes in the drawings, designs, specification, method of shipment or packing, or time or place of delivery of the Goods, reschedule the Services, or require additional or diminished Services. The supplier will be notified in writing of any changes that occur to the purchase order.

11.0. Performance Monitoring

Graco's goal is to receive defect-free parts and materials from suppliers. Graco will not test or inspect quality into our parts—this is the responsibility of the supplier. The Receiving Inspection department will be responsible to inspect parts and materials to established procedures utilizing the appropriate inspection procedures and instruction to assure they are defect free.

Absolutely no materials, parts or products will be accepted with known defects. In an effort to insure zero defects in the parts and materials that form our products, Receiving Inspection personnel will have the responsibility and authority to determine whether materials, parts, or products meet Graco Specifications per the inspection procedures.

11.1. Non-Conforming Material Report (NMR)

11.1.1. Incoming Inspection NMR:

NMR's created at incoming inspection are generally for the entire lot received. These NMR's are based on the sample quantity inspected. Sample size is determined based on quantity shipped. A rejected sample results in the rejection of the entire shipment. The supplier will have the option to rework/ sort the defective lot; however, if the supplier does not come in and sort, Graco will return the lot for credit.

11.1.2. In Process NMR:

Typically created for a known quantity of defective parts found during assembly or production. The identification of a defective part will result in containment and possible sorting. The supplier will have the option to rework/ sort the defective lot; however, if the supplier does not come in and sort, Graco will return the lot for credit.

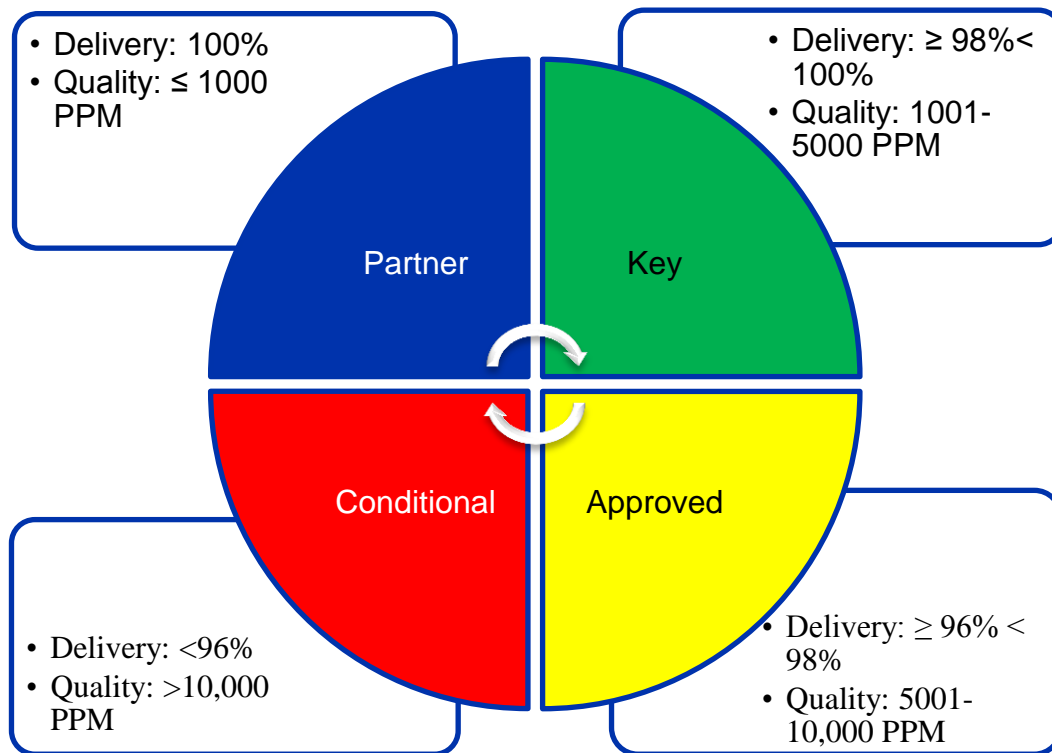
11.2. Scorecard

All Graco Suppliers will be evaluated through a scorecard that measures monthly, quarterly and yearly performance. The key areas of evaluation are under the categories of:

- ❖ **Quality**—PPM [(Quantity Rejected/ Quantity Received) * 1,000,000]
- ❖ **Delivery**— Receipts on time/ Total Receipts
- ❖ **Cost**— Cost reduction suggestions and implemented savings
- ❖ **Technical Support**-- Technology, innovation and continuous improvement
- ❖ **Wave Length**—Customer service / Relationship

Using these metrics, Graco will issue our suppliers a rating through our Supplier Performance Measurement System:

Supplier Performance Measurement (SPM) is our Graco’s system to measure the performance of our suppliers. Supplier performance is measured quarterly. The process of SPM encourages Graco and its suppliers to develop relationships that promote communication and continuous improvement throughout the entire product life cycle. In the pursuit of supply chain excellence, Graco values involvement, commitment, trust, cooperation and teamwork as tools to continuously improve. Generally, suppliers are graded on their delivery rate and the quality of the lot delivered, which is measured in PPM (parts per million defective).



Graco will conduct a quarterly review with each supplier. The review will take place within 4 weeks of completion of a calendar quarter. The objectives of this meeting are to discuss and resolve performance issues, monitor supplier progress, and determine future opportunities. In the meeting, both parties will discuss supplier ratings, capacity issues, lead-times, and other facets of the business relationship that may be of concern or be improved. A formal corrective action plan may be required for suppliers in the Conditional category.

11.3. Supplier Corrective Action (SCAR)

A Supplier Corrective Action Report (SCAR) is issued in the occurrence of a non-conforming product or service received by Graco from the supplier.

11.3.1. Scope:

SCARs may be initiated by Graco for any suppliers. A SCAR may be initiated from the following situations:

- Customer complaint is issued for purchased product or services
- Supplier does not meet performance objectives
- Defect causes a safety concern
- Defect is a repeat occurrence
- As a result from an audit
- As requested from manufacturing or design

11.3.2. Short Term Containment Action

Short Term Containment Action is a containment action that immediately prevents the customer from receiving any more non-conforming products. Short term containment actions affect the Work in Process inventory, Stock Inventory and In Transit Inventory. Containment actions include:

- Quarantine and sort inventories
- Implementing 100% inspection
- Addressing in transit material

Short Term Containment must be implemented by the specified short term containment due date and is strictly enforced.

11.3.3. Root Cause Analysis (RCA)

Root Cause Analysis (RCA) is a process meant for discovery. Throughout the process, the questions of what happened, why did it happen and how can it be prevented should be asked using the basic premise that errors and failures that occur are a result of the process and not human error. We suggest the '5 Why' process for RCA, which entails assessing the problem and continually asking 'why' until a root cause is determined. Generally, the process of asking why should take place 3-5 times per RCA. Other suggested tools for RCA are:

- ❖ Fishbone Diagram
- ❖ Cause and Effect Table
- ❖ SIPOC Chart
- ❖ FMEA

The Key to successful RCA is problem definition. Without clearly defining the problem, it is difficult to develop a useful corrective action plan. For '5 Why' training material, please click below.

[5 Why Training](#)

11.3.4. Completion Due Dates

SCARs are required to be completed and returned to document author within the specified due date using an approved 8D form. Please follow the link below:

[Supplier Quality Forms](#)

11.4. Perform Implementation plan

After completing the root cause analysis and identifying solutions, the supplier must validate their solutions and then implement them into the process. On the 8D form, the supplier must provide an implementation date.

12.0. General Requirements

12.1. Logistics

Please refer to the below documents for specifications and information regarding the Graco Logistics Process. To access the documents, please follow the link below.

[Logistics](#)

12.2. Freight and Shipping

Unless otherwise specified, purchase orders ship via freight collect as noted on the Graco Routing Guide. Freight charges will not be paid on any order that does not ship per these instructions unless special arrangements have been made with Graco prior to shipments of the parts.

12.3. Packaging

The product must be packaged in a way to prevent damage or corrosion during storage and shipping to Graco. For hazardous material, contact the Category Manager for instructions.

12.4. Label

Graco requires that all vendors and suppliers place a shipping label on every shipment received. Please refer to the link below to view the *Graco Supplier Bar Code Labeling Guidelines*.

[Bar Code Label Manual](#)

12.5. Quality Event Prevention

Graco expects Suppliers to error proof their processes to eliminate potential areas of non-conformance. Suppliers should constantly be pursuing continuous improvement in their processes to allow their operations to run as efficiently and effectively as possible. Where applicable, suppliers must search for sub-tier suppliers that help drive cost reduction and continuous improvement in the business process. Graco Tier-1 Suppliers are responsible for ensuring quality, efficiency and effectiveness in the sub-tier processes of their vendors.

12.6. Return Material Authorization (RMA)

RMA's must be provided to the requestor within 24 hours of notification. When a product is returned as a result of a quality nonconformance, the supplier is responsible for the shipping freight cost.



12.7. Continuous Improvement

12.7.1. Lead Times:

We expect our suppliers to continuously look for ways to reduce their lead times and cycle times through process improvement. Reduction goals shall be determined at the beginning of each quarter.

12.7.2. Cost Management:

Graco requires supplier initiated cost reductions and improvement suggestions. Suppliers shall continuously be looking for ways to improve their business processes and reduce their operating costs.

13.0. Reference

13.1. Glossary

Approved Supplier: Graco Supplier who meets minimum performance levels. Has a delivery rate of $\geq 96\% < 100\%$ and a quality rating of 5001- 10,000 PPM

Capability Study (CAP): A detailed study, of 30 pieces or less, on features of a part during the manufacturing process to determine if the process used to produce the part is meeting requirements on a continuing basis.

Cast or Molded parts: metal castings, forgings, plastic molds, etc.

Conditional Supplier: A Graco Supplier who is below the minimum Graco performance levels, corrective action required. Suppliers who receive this rating for 2 consecutive quarters will not be eligible for new business unless approved by a Graco Production Procurement Manager, MRO Purchasing Manager or Director of Purchasing. Has a delivery rate of $< 96\%$ and/or a quality rating of $> 10,000$ PPM

Cp: The ratio of tolerance to 6 Sigma, it is found by following the formula $(USL-LSL)/6$ Sigma. Cp does not take into account process centering.

Cpk: $((USL-mean)/3\text{ Sigma}) - ((LSL)/3\text{ Sigma})$. Inherent variation of the process taking into account the centering of the process. The greater the Cpk the better.

CPK Bilateral: Calculation of CPK using bilateral tolerances

Containment: Immediate short term corrective action taken by the supplier to halt the flow of defective products and depict the cause of the problem.

Continuous Improvement: The continuous process of eliminating waste from production and implementing new business activities to further add more value.

Corrective Action: The actions taken to correct and prevent defects in production after a non-conforming part. Corrective actions shall be documented.

Custom tooling: a tool designed exclusively for the fabrication of a purchased part unique to Graco, Inc.

Defective Parts: specifications or dimensions are not to print and are non-conforming

Fabricated Parts: sheet metal, stamped, punched or formed parts, gaskets, etc.



Find Item (find): Identifies individual specifications or dimensions on the FA report in a capability study or in the inspection procedure. Issues identified against a find item are divided into two categories:

First Article (F/A): A detailed inspection of all specifications and dimensions of a part unique to Graco, as documented on the design drawing to qualify the process and tools used to manufacture the part. Assemblies shall include all BOM parts regardless of whether or not custom tooling was utilized.

FMEA: (Failure Mode Effects Analysis) A systematic and proactive way to assess a process to depict where failure points may occur. The analysis includes depicting how the failure may occur along with the relative impact different failures will have on the process.

ISO 9000: A set of international standards regarding quality management and assurance. These standards help companies document quality processes.

Inspection Procedure (I/P): Process document provides design information and current revision information, find dimensions or features, references, inspection sampling plan, equipment and methodology for a given part and is also provided to suppliers for performing capability studies where required Quality Record provides inspection results on shipments received.

Intellectual Property: Creative and abstract ideas, thoughts and applications that may apply for a patent, trademark or copyright etc.

Invoice Discrepancy: Inconsistencies between the supplier and Graco in an invoice that involves incorrect amount, quantity or wrong items.

Key Characteristics: A key characteristic is defined as a feature of a process, assembly or part whose variance has heavy influence performance and quality of the entire assembly or process

Key Suppliers: Graco Supplier who exceeds required performance standards, working towards world class. Has a delivery rate of $\geq 98\% < 100\%$ and a quality rating of 1,001- 5,000 PPM

Lead Time: The time in calendar days from the purchase order to the delivery of the product.

Marginal Finds: specifications and/ or dimensions are to print but are on the edge of conformity and identified to prevent a non-conforming situation before it actually occurs. A marginal find is within 15% of the tolerance limit on unilateral dimensions or 15% of the tolerance limit on either end of a bilateral dimension. The supplier is required to address in writing all features identified as marginal regarding how it will be affected by tool wear and also their capability to consistently supply product to specification with feature as reported.

NDA (Non-Disclosure Agreement): A legal contract formed between 2 or more parties that determines the confidentiality of proprietary information, drawings, financials, etc.

NMR (Non-Conforming Material Report): A document issued when an item does not meet specifications

Part Aesthetics: the visual aspect of the part, what is seen by the customer

Partner Supplier: Graco Supplier who exceeds performance standards, world class. Has a Delivery Rate of 100% and a Quality Rating of $\leq 1,000$ PPM

Poka-yoke: A Japanese lean manufacturing term that means “mistake-proofing” or “inadvertent error prevention”.

PPM: Parts Per Million defective – industry standard measure of quality (qty defective / qty received * 1,000,000)



Product Identification: Clear identification on each part/ product that allows for identification in a management system

Product Traceability: With the product identification, the ability to trace the process in which a part/ product is manufactured and shipped

Quality System: A formalized system of business practices that defines the management responsibilities, processes, procedures, procurement and resources needed to fulfill the requirements of customer satisfaction, product requirement and continuous improvement

Range: the area of deviation between the upper and lower limits in a sample.

RCA (Root Cause Analysis): The study of a process that resulted in a non-conforming part to depict the reason for failure/ non-conformance.

Rework: making necessary changes to a non-conforming part to get it to reach the product requirements

RFC (Request for Change): Documented change in a process, procedure or manufactured part

RMA (Return Merchandise Authorization): Part of the warranty process of returning a defective product to receive a refund or a new lot of parts

Root Cause: The underlying factor that caused a non-conformance in the manufacturing process

Sampling Plan: The requirements documented in the inspection procedure for a specified number of parts received from a supplier to be inspected, generally determined on an AQL or MIL-STD sampling criteria.

Sample Request (SR): Sample part submitted to Graco for approval without supplier inspection documents. Sample request is utilized for a part which is either not unique to Graco or has been determined by the project team to not require a full FA.

SCAR (Supplier Corrective Action Report): A form issued to the supplier in the occurrence of a non-conformance in the manufacturing process. The SCAR includes short term containment action, a Root Cause Analysis and prevention steps.

Scope: The extent of which the subject matter applies

Should: indicates a recommendation

Shall: Indicates a mandatory requirement

SIPOC: A tool used to assess the inputs and outputs of a process (Suppliers, Inputs, Process, Outputs, Customers)

SPM (Supplier Performance Measurement): A business practice used to measure, analyze and manage the performance of a supplier

Standard Deviation: The variation of a sample lot from its median

Sub Tier Supplier/ Process: A supplier used by the Tier 1 Graco supplier to procure necessary parts and materials

Tier 1 Supplier: Graco Supplier who directly supplies and reports to Graco



X Bar: The symbol used to represent the sample mean

5 Why Process: A Root Cause Analysis tool used to pin point the root cause of conformance in a process.

13.2. Appendix

Appendix A: RFC Examples

Examples of Changes requiring notification	Clarifications
Change to construction, material or component	This applies to any change to construction, material or component that is not covered by the engineering drawing or applicable Graco or external standard.
Production from new or modified tools (except perishable tools), dies, molds, patterns, etc. including additional or replacement tooling	This record only applies to tools, which due to their unique form or function, can be expected to influence the integrity of the final product. It is not meant to describe standard tools (new or repaired), such as standard measuring devices, drivers (manual or power), etc.
Transfer of Tooling, production or equipment to a different site	Upgrade means the reconstruction and/or modification of a tool or machine to increase the capacity, performance or change existing function/parameters. This requirement not meant to be confused with normal maintenance, repair, or replacement of parts, etc., for which no change in performance is to be expected and post repair verification steps have been established. Rearrangement is defined as activity that changes the sequence of product/process flow from that which was previously approved by Graco (including addition of a new process).
Change of Sub Supplier or material source including outside services	Production process tooling and/or equipment moved to a different building or facility.
Change in packaging material or method	This applies to any change in packaging material or method which can be expected to influence the integrity of the final product.
Change in production process or method	Any changes in the production process or method, including changes at the sub suppliers that affect Graco requirements, e.g., form, fit, function, performance, durability
Change in test or inspection method	For change in test/inspection method, the supplier should provide evidence that the new method has measurement capability equivalent to the old method.
Change in product appearance attributes	Any change resulting in appearance differences from the latest approval e.g., color, surface roughness, opacity, sheen, etc.

Acknowledged By:

Print Supplier Name

Signed By

Date

*Worldwide Leaders in
Fluid Handling*



Proven Quality.

Leading
Technology.

