

resideo



## Supplier Track to Exceptional Performance (STEP) Manual



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### TABLE OF CONTENTS

Introduction.....	3
1. Drawing and Specification Control.....	4
2. Part Qualification Process .....	4
3. Process Control .....	5
4. Non-Conforming Material .....	6
5. Solderability and Welding Requirements.....	8
6. Request For Change.....	8
7. Supplier Notification of Change.....	9
8. Logistics Guide & Freight Routing Guidelines .....	10
9.0 Purchase Order Deliveries .....	11
10. Vendor Score Card (VSC).....	11
11. Tooling Inventory and Condition .....	12
12. Commodity Management Team .....	12
13. Supplier Assessments / Audits.....	12
14. AIAG Manuals .....	13
Appendix .....	13
Glossary .....	13
STEP MAP .....	14



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### Introduction

Welcome to the **RESIDEO** Supplier Track to Exceptional Performance (STEP) Manual. This manual will provide links to required forms to be submitted by you the supplier, related procedures and pertinent information. A copy of this information can be found at the following web address: <https://www.resideo.com/suppliers>

#### Purpose and Scope:

It is RESIDEO's mission to provide customers with leading-edge products with uncompromising quality. A critical element to accomplish this mission is receiving parts / products from our Suppliers on time with the highest quality and reliability. Therefore, suppliers are empowered to at least have ISO 9000 certification or equivalent system in place to ensure both quality and continuous improvement for every part / product delivered to RESIDEO by using procedures in this document.

The parties hereby agree that all purchases by RESIDEO of Supplier's products shall be made per the fully executed supply agreement in effect between RESIDEO and Supplier. If no such supply agreement is in effect at the time that RESIDEO places an order with Supplier, then, notwithstanding any other terms and conditions to the contrary which may be transmitted by the parties from time to time, all purchases by RESIDEO of Supplier's products shall be made according to RESIDEO's terms and conditions of purchase attached to or transmitted with RESIDEO's purchase order. In the event of any conflict between the provisions of this STEP manual and the fully executed supply agreement between the parties or RESIDEO's terms and conditions of purchase, as the case may be, the relevant provisions of this STEP manual will govern. This agreement aligns with all current products purchased and future products purchased within the effective term of the agreement.

This Agreement will begin on the Effective Date   Month/Day/Year   and remain in effect for 3 years (the "Term").

IN WITNESS, WHEREOF, the parties have executed this Agreement by their respective duly authorized representatives as of the date set forth in the signature block below.

### RESIDEO

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

### SUPPLIER

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

### NOTES/Observations



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### 1. Drawing and Specification Control

**It is the supplier's responsibility to ensure the latest revision engineering specification and drawing is used as specified on the RESIDEO purchase order.**

#### [Part Drawing Issue Number and Revision Number](#)

On Purchase Orders, the correct revision of a part drawing is referred to as the "rev" regardless of the nomenclature on the drawing. Due to events, such as business acquisitions, combination of other RESIDEO locations, changes in print format, and changes in naming convention, RESIDEO has several variations in drawing formats.

#### [Part and Print Revisions](#)

Purchase orders (POs) generated by RESIDEO may not have a print revision (a.k.a. drawing revision) specified. When a print contains more than one part number (i.e. a tabulated drawing), each part number has the ability to rev separately. So, the print revision may not match each of the part revisions. If only one revision is specified on the PO, this revision corresponds to the print revision, and may not necessarily match the part revision.

### 2. Part Qualification Process

It is the policy of RESIDEO to approve all supplier parts prior to use, either they are NEW PRODUCT INTRODUCTION (NPI) or Product Transfer. Approval is obtained using the fundamentals of the process found in Automotive Industry Action Group (AIAG) Advance Product Quality Planning (**APQP**) and Production Part Approval Process (**PPAP**).

It is highly recommendable that suppliers get their own AIAG Manuals,

#### [Parts Requiring Qualification](#)

All custom production parts, non-standard designed for or by RESIDEO must be approved prior to use on any RESIDEO product. Approval is obtained using RESIDEO PPAP process. Contact the RESIDEO Commodity Management Team (CMT) if you are unsure the part you are supplying requires a PPAP.

#### [Production Part Approval Process \(PPAP\)](#)

Suppliers must adhere to the PPAP process, unless noted otherwise specified by the RESIDEO Commodity Management Team (CMT). In addition to the standard PPAP documentation, RESIDEO requires the completion of an asset declaration form for all new tools constructed by the supplier that are owned by RESIDEO. This asset declaration form shall be supplied with the PPAP to the SE or a member of the CMT.

#### [Asset Declaration Form](#)

Ask your Commodity Management Team for the latest editable version.

#### [Part Submission Warrant \(PSW\)](#)

All PPAP submissions must include a completed RESIDEO Part Submission Warrant (PSW) form. PSW forms along with all supporting documentation should be sent electronically and in English language to the appropriate Supplier Engineer.

Ask your Commodity Management Team for the latest editable version.



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### Submission Evidence Requirements

PPAP will require submission of all Level 3 documentation denoted by "S", unless otherwise noted on the PSW form provided by the RESIDEO Commodity Management Team.

### Significant Production Run

Data for a PPAP must be acquired from a significant production run. Significant run will be defined in agreement between the Supplier and the Supplier Engineer, and will be based on the Estimated Annual Volume (EAV).

### Design for Manufacturing

RESIDEO will request the supplier to perform a Design for manufacturing analysis as early as possible during the development stages; this will include specific review of Key Characteristics specified by the drawings and or dimensions identified by the Supplier Engineer as "High Risk".

The result of this analysis will result in process modifications by the supplier and or design changes by RESIDEO, these features will be part of the Supplier Control Plan to be monitored during the life of the product and the expectation is that will show stability over time and an acceptable level of Cpk.

Any changes to the control plan and or process that may impact the quality of the part should be notified and approved by RESIDEO.

### Safe Launch Plan (SLP)

When key and or critical characteristics have been identified, RESIDEO might require the supplier to demonstrate process stability during the early stages of the part's life after they have been approved by RESIDEO, the process will be known as "Safe Launch Plan", RESIDEO and the supplier will agree on terms and conditions to consider a Safe Launch Plan successful as well as the corrective actions to follow if otherwise.

Ask your Commodity Management Team for the latest version.

## 3. Process Control

It is the policy of RESIDEO to monitor ongoing process stability for supplier parts with key characteristics (Critical and Control Plan Characteristics). For monitoring, the fundamentals can be found in the Automotive Industry Action Group (AIAG) Statistical Process Control (SPC) manual, this manual is to be used as a reference, methods on how to implement and maintain SPC can be found in other books and publications. The key characteristics to be monitored should be reflected in the FMEA (Failure Mode Effect and Analysis Report) and Control Plan when submitting the PPAP and will be updated as necessary during the life of the part.

### Parts Requiring Monitoring

All custom production parts, non-standard designed for or by RESIDEO, with **key characteristics** and when defined by the Supplier engineer, will be monitored through SPC (the AIAG SPC manual could be used as a reference as previously noted) over the life of the part. The summary of these Key Characteristics must be reflected in the supplier control plan.



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### Statistical Process Control (SPC)

Suppliers must keep timely and consistent data that can be requested by RESIDEO at any time during the life of the part. The process and control type to verify part conformance should be documented accordingly in the FMEA and the Supplier Control Plan.

### Process Stability

The stability of a process is key to consistently produce parts or materials. Specific features, dimensions, and specifications designated as key characteristics and or control plan features should be part of the supplier control plan. Statistical techniques should be used to determine if the process is in control over time. Out-of-control conditions require immediate action.

### Process Capability

Cpk index will be requested for key characteristics during the run to approve the PPAP process, but also will be required during the life of the part, once the part has been approved Cpk indexes will be calculated after stability is demonstrated. Key Characteristics must comply with the following criteria:

- A.  $Cpk \geq 1.33$  is acceptable
- B.  $Cpk < 1.33$  requires immediate notification of RESIDEO CMT and a corrective action to improve the Cpk to greater than 1.33.

Cpk is defined as capability index for a stable process, which uses an estimate of standard deviation or sigma based on within subgroup variation ( $R\text{-bar}/d^2$  or  $S\text{bar}/c^4$ ).

If supplier cannot meet the Cpk criteria will work with RESIDEO to find alternative ways to guarantee a part in specification, this may include but not limited to 100% inspection.

Some Drawings have special requirements for cpk, it specifies a cpk value of 1.67 for qualification and 1.33 for Control Plan

### Lot Rejection Criteria

If the received lot(s) of parts, sub-assemblies or devices show defects that impact quality or function, or defect rate is greater than the specified PPM goal by RESIDEO; RESIDEO, reserves the right to reject the entire lot. Action may be taken per the Non-Conforming Material Process.

### Certificate of Conformance

Supplier shall retain for a period of 2 years a certificate of conformance for each lot of parts supplied to RESIDEO that the supplier meets the above process capability requirements and the requirements of the RESIDEO print. This certificate shall be available for review by RESIDEO upon request.

## 4. Non-Conforming Material

It is the policy of RESIDEO to use only parts that fully comply with our requirements. Therefore, in the event non-conforming parts are identified, RESIDEO will take all actions necessary to prevent these parts from being used in any of our products. Non-conforming parts will be contained and corrected using the Non-Conforming Material Process.



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### Inspection

Inspection is performed as defined by RESIDEO's internal inspection requirements, print specification, and Purchase Order Terms and Conditions.

### Corrective Action Request

For each of the following conditions, RESIDEO could initiate a Supplier Corrective Action Request (SCAR).

- Impact with Resideo end customer.
- Impact in Resideo Assembly line.
- Recurrent event.
- Safety issue.
- Poor performance on any KPI's.

Suppliers will be informed of the SCAR using a SCAR/8D format. RESIDEO will send the notification of the SCAR to the supplier as soon as the responsible Supplier Quality Engineer identifies the quality issue.

### CAR Timetable Requirements

Time	Actions/Requirements
Within 1 business day	<ul style="list-style-type: none"> <li>* Confirm <b>receipt</b> of SCAR</li> <li>* <b>Contain</b> all suspicious material at Resideo, in transit, 3PL and supplier facilities</li> <li>* Give <b>disposition</b> of non-conforming material</li> <li>* Provide <b>CLEAN CODE</b> or LOT</li> <li>* Request for samples</li> </ul>
Within 15 calendar days	<ul style="list-style-type: none"> <li>* Provide RMA and instructions. Time to start when supplier received samples (if applicable)</li> <li>* Complete <b>Root Cause, Direct</b> and <b>Contributing Cause</b></li> <li>* Report progress and justify if this can't be accomplished in time</li> <li>* If material is sitting at Resideo site waiting for final disposition (after 5 days), material could be send to Scrap with cost of material charged to supplier</li> </ul>
30 Calendar days	<ul style="list-style-type: none"> <li>* <b>Complete</b> the SCAR</li> <li>* Provide evidence of implemented actions</li> </ul>

### Conforming Material Requirements

In the case of a significant quality issue, it is the responsibility of the Supplier to insure adequate conforming parts or material to prevent any line stoppage situations by either:

1. Delivering new good parts, or
2. Providing the sorting, repair, or rework resources to the appropriate RESIDEO facility.

In case (1) or (2) cannot be accomplished in time to prevent line stoppage, RESIDEO reserves the right to sort, repair, or rework the non-conforming material at the Supplier's expense. All sorting will be coordinated with the RESIDEO production facilities by the Supplier Quality Engineering Group.



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### [Non-Conforming Parts/Material Charges \(Cost Recovery\)](#)

In the event the non-conforming part or material results in costs to RESIDEO (costs may include charges related to sort, rework, repair, product scrap, production downtime, customer imposed charges, warranty or recall costs, shipping, and/or engineering effort), RESIDEO reserves the right to charge the Supplier all reasonable associated costs. Labor costs will be calculated using the current standard burdened rate for the affected RESIDEO facility. The Commodity Manager or Buyer will coordinate all charges, per the sourcing charge-back process.

### [Supplier Notification of Non-conforming Material Shipments Made to RESIDEO](#)

All suppliers are required to report any shipments that may not meet RESIDEO specifications. Please contact your Supplier Quality Engineer via e-mail with the RESIDEO material/part/product listing, RESIDEO Purchase Order number, date of shipment, and quantity of shipment. Reported actions require that a CAR is generated for tracking purposes and Corrective Action at the supplier's location, if parts do not meet specification.

### [Deviations](#)

Deviations will only be used under very special or extreme circumstances. Deviation policies, procedures, and forms are RESIDEO site specific. Acceptance of deviated parts is usually accompanied by a CAR to prevent recurrence. Please contact the Commodity Management Team and/or Sourcing and Procurement for details. In case the deviation is approved all material should be sent identified with the approved Deviation

## 5. Solderability and Welding Requirements

It is the policy of RESIDEO to ensure that all purchased components utilized in manufacturing assembly processes must be in a condition suitable for use in such processes when received.  
For solderability References: IPC-A-610, IPC J-STD-001.

### [Component Solderability](#)

All purchased components intended for use in conventional production soldering processes must be solderable upon delivery, per IPC J-STD-001E, section 5. IPC is an international agency that creates standards for the electronic interconnection industry.

## 6. Request For Change

It is the policy of RESIDEO that suppliers request and obtain approval prior to making any changes to previously approved custom parts.

### [Custom Parts and Materials](#)

RESIDEO defines custom parts and materials to be those items that are designed for or by RESIDEO and have been approved for use using the PPAP process.

### [When to Request A Change](#)

Suppliers are required to request approval for changes that may affect the fit form and or function of the part, these changes should be validated through the PPAP process, the level of PPAP will be determined by the Supplier Engineer. These are change to the process(es) at the supplier's location including but not limited to machinery moves, factory location moves, and/or changes to machining processes that could affect form, fit, function, and/or service life of the part/material/product being produced.





## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

Examples of changes requiring notification and potential revalidation:

Changes requiring notification	Clarifications
1.-Production from new or modified tools, dies, molds, etc.	This requirement applies to custom tools, which due to their unique form or functions can be expected to influence the integrity of the final product.
2.-Production from tooling or equipment transferred to a different site.	Production tooling and / or equipment transferred between facilities at one or more sites.
3.-Change of suppliers for parts, non-equivalent materials, or services, (e.g., heat treating, plating).	The supplier is responsible for approval of supplier provided material and services. (Tier Suppliers included)
4.-Product and process changes related to components of the production product manufactured internally or manufactured by suppliers.	Any changes that may affect customer requirements, e.g., fit, form, function, performance, durability.
5.-Change in product appearance attributes.	These changes normally be expected to have an effect on the performance of the product.

### [How To Request A Change](#)

Supplier must submit the Request For Change Form along with all supporting documentation to the appropriate Supplier Engineer. Suppliers should allow up to six months for a PCN to be processed in some cases where Customer approvals and review of said request of change is required. Suppliers should submit a PTN (Process Termination Notice) to RESIDEO and allow up to twelve months for change to be completed. This allows RESIDEO adequate time to locate and qualify a new supplier when required. RESIDEO will review the request and provide disposition to the Supplier. If the request is approved, RESIDEO will inform the Supplier how to proceed with the change. Parts will be approved after the change following the Parts Qualification Process

### [Request For Change Form](#)

Completed Requests for Change are to be submitted electronically to the appropriate Supplier Engineer. The form to populate and submit is included with the STEP manual files on the website indicated in the introduction.

## 7. Supplier Notification of Change

It is the policy of RESIDEO that suppliers of standard components off the shelf (COTS) and standard materials notify RESIDEO prior to making any changes to supplied parts or materials.

### [Standard Components off the Shelf \(COTS\) Parts and Materials](#)

RESIDEO defines Standard Components off the Shelf parts and materials to be those items RESIDEO has no design or production process control or special characteristics requirements. Normally these parts and materials are purchased using the supplier catalog number.

### [Distribution Purchases](#)

Many COTS parts and materials are purchased through distribution suppliers. Distribution suppliers are required to inform RESIDEO of any changes to or source of COTS part or materials.



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### [Supplier Notification of Change](#)

Supplier notifications of change are to be sent to the RESIDEO appropriate Buyer and Supplier Quality Engineer in any electronic format as long as it includes the corresponding RESIDEO part numbers.

### [Custom Parts and Materials](#)

RESIDEO defines custom parts and materials to be those items that are designed for or by RESIDEO and have been approved for use using the PPAP process. The request a change a complete form has to be sent to the supplier quality engineer.

### [Supplier Notices or Request for Change FORM](#)

Ask your Commodity Management Team for the latest editable version.

## 8. Logistics Guide & Freight Routing Guidelines

The documents contained within this page are to be reviewed by suppliers on a regular basis to ensure compliance and most effective inbound carrier routing selections.

### [Logistics Guidelines](#)

The purpose is to define logistics guidelines for suppliers to ensure compliance with RESIDEO specifications and procedures for preparation and shipment of product destined for, or to a third party on behalf of all RESIDEO Specific guidelines and requirements information is available.

The guidebooks address the following areas:

- Handling Requirements
- Dangerous Goods
- Packing List
- Cartons
- Pallets
- Overpacks
- Product Labeling \*
- Bar Code Specification \*
- Transportation Routing
- International Supplier / delivery addresses

\* Special requirements may apply for SECURITY

### [Guidebooks:](#)

- Engineering Specification for Packaging and Logistics Guidelines
- Product Labeling and Barcode Specifications (ES 116)
- Security labeling spec (ES798)



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### Requirements including:

- US Customs Invoice Requirements
- US Government 10+2 requirements
- International Transportation Guide
- Blank Invoice Template

To access these guidebooks and requirements go to RESIDEO Shipping Information section through the link in the introduction section.

The concept with PO deliveries below is to align supply continuity for RESIDEO's strategic suppliers envisioning the extension of our relationship with new business. It is applicable for all incumbent material along with new products. This is to be affirmed by someone outside of sales to ensure compliance and communication alignment with the supplier's factory.

### **9.0 Purchase Order Deliveries**

RESIDEO issues purchases based on the business needs. The schedule is determined by the production schedule and other factors including lead time, safety stock, and order quantity. The production schedule can change for many reasons. RESIDEO customer orders can drive changes to the schedule, as well as changes resulting from part or production issues. The result of these schedule changes are new need dates for the orders we have placed and need to be accepted and altered in the supplier's system. Notifications of changes are to be confirmed by the supplier within 48 hours of receipt.

### **10. Vendor Score Card (VSC)**

It is the policy of RESIDEO to use the Vendor Score Card (VSC) for gauging ongoing supplier performance and for making future business decisions. Vendor Score Card applies to a select group of RESIDEO suppliers we believe key to our supply chain. As a RESIDEO supplier you may be selected to participate in the Vendor Score Card program, that evaluates service responsiveness, quality, productivity, and payment terms.

If you have questions in regards of the Vendor scorecard, please contact your Commodity Management Team.

### Service Responsiveness

This requirement measures our suppliers' ability to deliver products to meet our needs. It consists of:

1. On-time delivery to promise delivery date
1. Total process lead-time for supplier products

### Purchase Order Changes

RESIDEO terms and conditions include the ability to "direct changes in the drawings, designs, specifications, method of shipment or packing, quantity, or time or place of delivery of Goods".

RESIDEO will exercise this as needed and suppliers are obligated to comply. Notifications of changes are to be confirmed by the supplier within 48 hours of receipt.



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### Quality

This requirement measures our suppliers' Parts-Per-Million (PPM) defective rate.

### Productivity

This requirement measures our suppliers' ability to team with RESIDEO in order to meet RESIDEO's productivity requirements.

### Payment Terms

RESIDEO has an expectation that the supplier shall meet the payment term requirements. Failure to do so may jeopardize future business plans.

The score card should be used as a means to meet the targets agreed between RESIDEO and the supplier, expectations on improvement will be reviewed during the score card conversations that will take place on regular basis.

## 11. Tooling Inventory and Condition

Supplier is responsible to :

- Keep record of cycle count and inform the Tooling Engineer from RESIDEO
- Alert RESIDEO when tooling is coming to the end of its life or when tooling has been severely damaged and will prevent the tool from producing good product. The supplier must in advance when tool overhaul and/or replacement is necessary.
- Have at least a yearly review of tool inventory.
- Perform routine maintenance on RESIDEO owned tooling.
- Tools shall be handled and stored in a manner to prevent damage.

## 12. Commodity Management Team

RESIDEO policy is to manage the supply base through Commodity Management Teams.

### Commodity Management Teams

Commodity Management Teams (CMT) consists of, at a minimum, a Commodity Manager (has responsibility for all supplier management issues related to overall performance, selection, financial, delivery and contract negotiations), a Supplier Development Engineer and a Supplier Engineer, or, Supplier Quality Engineer and the Buyer (would be the primary point of contact on topics related to this STEP Manual). Other members are included in this team based on the type and scope of project being managed.

## 13. Supplier Assessments / Audits

Supplier is subject receive visits from RESIDEO to validate process, or material in case of failures, corrective actions or special needs.



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### 14. AIAG Manuals

Automotive Industry Action Group Manuals are available in various sources and languages.

#### North America

Automotive Industry Action Group  
26400 Lasher Road Southfield, MI 48034-2624  
(248) 358-3570 ext 373  
[www.aiag.org](http://www.aiag.org)

#### Europe

Carwin Publication Dept Unit 1  
Trade Link Western Avenue  
West Thurrock Essex RM 20 3FJ  
044 (0) 1708-86133 [www.carwin.co.uk](http://www.carwin.co.uk)

### Appendix

- **Contacts**

Issue/ Activity	1st Contact	2nd option
Request for Change	Buyer	SQE
Drawings	Buyer	SQE
Deviation Request	Buyer	SQE
CAR	SQE	
Score Card	CM / SQE	Buyer
Logistic/ deliveries	Procurement team	
PPAP	SQE	

### Glossary

#### **Significant Quality Issue:**

An event that implies line down, large defective quantities, repetitive problem, customer complaints.

#### **Commodity Management Team:**

Team formed by Commodity Manager, Buyer, Planner, Supplier Quality Engineer and/ or Supplier Development Engineer.

#### **OTTR**

On time to request, measured by PO line.

OTTR= Hit lines/total lines (%)

#### **PPM**

Standard method to evaluate supplier quality performance, taking in count defective quantities over received quantity multiplied by 1,000,000

#### **Scorecard**

Report that shows supplier KPIs (Key Performance Indicator).



## SUPPLIER TRACK TO EXCEPTIONAL PERFORMANCE (STEP)

### SQE

Acronym for Supplier Quality Engineer / Supplier Engineer

### Packaging Specification

Document that defines how the material is going to be packed at supplier's plant, to protect and ensure material withstands transportation and handling to arrive the same way to Resideo's warehouse/ assembly line.

### STEP MAP

