OPW

SUPPLIER QUALITY REQUIREMENTS MANUAL

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1 Introduction

The fluids dispensing and containment industry is both competitive and demanding with increasing levels of customer expectations for both product performance and reliability. OPW Retail Fueling operates a quality system that has been developed to meet the requirements of the ISO 9001:2015 standard. It is essential for the OPW sourcing team to explain to its suppliers our expectations in the beginning of any project. These requirements are general, independent of any specific industrial, or economic sector.

This guide is issued to you by OPW Retail Fueling, it is a confidential document and remains the exclusive property of the OPW sourcing function. It may not be forwarded, duplicated, or used by third parties without prior consent from OPW. This guide is not a contractual document, but a reference to OPWs Supplier Requirements, from perspectives of Quality, Import Compliance, Commercial Compliance, etc.

2 Procedure for identifying a potential New Supplier, Supplier Setup and Supplier Maintenance-OPW Supplier Requirements

The OPW Supplier Setup Process and Supplier Requirements are listed below, also reference **OPW519A** as a quick visual representation.

1. Phase 1: Compliance

During the Compliance segment, OPW requires the following…

a. Supplier and OPW must sign a mutual confidentiality and non-disclosure agreement after initial introductions. No proprietary information or project details can be shared until an executed NDA between both parties exists. The supplier shall not share any confidential information like drawings, intellectual property (such as trade secrets), standards, work instructions, etc. to any individual/company who does not fall under the purview of the NDA agreement. If the supplier wishes to share such information for essential needs, an OPW NDA shall be signed off with that individual and/or the company. It is mandatory for the supplier to sign off a confidentiality agreement with each employee within their organization. It is also mandatory that the supplier sign off a confidentiality agreement with all sources providing outside services for OPW parts/products/gauges/etc. Anytime a supplier's external source needs any OPW intellectual property to assist in processing the part, such as a blueprint, an NDA agreement must be put into place and sent to the OPW SQE for processing.
    i. Reference **OPW Fueling Components LLC, Mutual Confidentiality and Non-Disclosure Agreement.**

b. It is also mandatory that the supplier possess a legitimate license and consent to run the company. The Supplier must have proof of federal or global identity and must have a W9 and an EIN number.
c. Supplier must submit a signed and completed Dover Supplier Code of Conduct, requiring the supplier conduct business fairly, honestly, ethically, with integrity, and comply with all applicable laws and regulations. This includes but not limited to complying with the following laws and or regulations: child and forced labour, wage and working hours, discrimination, fair treatment, health and safety, environment, conflict mineral laws, fair dealings and competition, protection of intellectual property, data privacy and security, improper payments, monitoring, record keeping, etc.
    i. **Dover Supplier Code of Conduct**
d. Supplier must complete the OPW Supplier Summary Sheet OPW453A. Comprised within this document is an acknowledgement section requiring the supplier to divulge business dealings with customers and/or suppliers in high-risk countries. If the supplier is dealing with any of the listed high-risk countries in this form, (Belarus, Central African Republic, Cote D' Lvoire, Cuba, Democratic Republic of the Congo, Iran, Iraq, Liberia, Libya, North Korea, Somalia, Sudan, Eritrea, Syria, Russia: Industrial Sector Sanctions, Crimea Region of Ukraine) we cannot conduct business with that supplier.
    i. OPW Supplier Summary Sheet, reference **OPW453A**
e. Supplier must complete a supplier self-assessment questionnaire, which details suppliers contact information.
    i. Supplier Assessment Questionnaire, reference **OPW305A**
a. OPW completes a Comprehensive D&B, including suits, liens, judgements, and UCC filings.
b. Supplier must complete OPW Forced Labour Questionnaire.
    ii. OPW Forced Labour Questionnaire, reference **QP-PS-18**
c. Once the NDA is executed by all parties and OPW receives all the above completed documents and they are approved; the OPW sourcing value stream, with the help of Dover, completes the TPG process. This is phase 1 of the supplier approval and setup process. Once the TPG is completed, reviewed, and approved, OPW sourcing can then move on to phase 2 of the process.

2. Phase 2: Commercial, Quality, and Transparency Requirements

At this time the Supplier is provided several documents for review, acknowledgement, and execution.

a. Supplier must read and acknowledge the OPW Supplier Quality Requirements Manual. This manual is a guide that provides reference to OPWs Supplier Requirements, from perspectives of Quality, Import Compliance, Commercial Compliance, etc.

i. OPW Supplier Quality Requirements Manual, reference **QP-PS-05**

b. Supplier must sign OPW Standard Terms & Conditions of Purchase. This agreement shall govern the purchase and sale of all goods, materials, equipment and machinery ("Goods") purchased by OPW from Seller.

   i. OPW Standard Terms and Conditions of Purchase

c. Supplier must complete an Annual Business Certificate at time of setup and every year after. This certificate denotes the type of business organization, affiliation, business classification certification, union classification, regular dealer or manufacturer, and company certification.

   i. Annual Business Certificate

d. Supplier must acknowledge the OPW Fueling Components Foreign Shippers Instructions. This instruction goes into the specifics of expectations OPW requires when foreign supplier is shipping goods internationally to OPW Fueling Components LLC Smithfield, NC. This document only applies to scenarios where OPW is purchasing directly, the goods are being imported from a nondomestic source, and OPW is the importer of record.

   i. Instructions for OPW Fueling Components (FC) Foreign Shippers, reference **QP-PS-13** (only applies if supplier outside US).

e. Once OPW receives all completed documentation listed above, OPW will then request ISO9001, AS9100, or IATF16949 certificate from supplier. It is a requirement of OPW that all suppliers have a Quality Management System that meets the requirements of ISO 9001, AS9100, or IATF16949 as a minimum. With that, the supplier must have a quality manual and inspection plan. There must be evidence that the supplier has control of their tier 2 suppliers. It is highly recommended and desirable that a supplier have a third-party accreditation to ISO9001, AS 9100, or IATF16949. If not, the supplier will be encouraged to obtain third party accreditation, with the support of OPW Retail Fueling. If a supplier is not accredited, then OPW Retail Fueling may carry out an audit using an ISO 9001: 2015 based Quality System Assessment (QSA) to validate the supplier's suitability to supply. OPW will request a copy of the suppliers ISO9001, AS9100 or IATF16949 certificate at this phase, or a copy of the supplier's quality manual and inspection plan.

f. All suppliers of OPW must be fully transparent with their processes from start to finish. There is a transparency template that is submitted to all inventory suppliers. Within the transparency template is the OPW part number (includes all active parts that OPW already has an approved FAI), subcomponent part number (if any, only for assemblies purchased), OPW revision level, country of origin, base material specified, base material used, coating spec (if any), heat treat spec used (if any), raw material supplier (tier 3); 1st process (tier 2) description (i.e. machining, casting, etc), supplier name and supplier location; 2nd process (tier 2 or 1), supplier name and location; 3rd process (tier 2 or 1), supplier name and location; 4th process (tier 1), supplier name and location. All requirements stated in this manual must be fully supported and implemented by tier 1, 2, and 3 suppliers that support the production of any OPW supplied parts. Please note: Tier 1 supplier is at the part/assembly level (the supplier OPW will be issuing purchase order with), Tier 2 supplier is at the processing level, Tier 3 supplier is at the raw material level. OPW Tier 1 suppliers must manage the supply chain all the way down to the Tier 3 or raw material level to ensure all parties, material, origin of goods, etc. comply to all requirements stated or referenced in this manual. All tier 1 suppliers are required to fully disclose their tier 2 and 3 suppliers used in the manufacture of all OPW components and asked to sign a sourcing affidavit. The supplier will not be allowed to change tier 2 and 3 suppliers without prior written consent by OPW and a formal FAI approved (at OPW's discretion) for parts produced from those tier 2 and 3 sources.

i. OPW Sourcing Department will provide supplier with Sourcing Affidavit at the start of any project, that will provide OPW the level of transparency required.
    1. OPW Sourcing Affidavit Form, reference **OPW516A**

ii. OPW Sourcing Department will provide supplier with Transparency Template to update annually thereafter.
    1. OPW Transparency Template, reference **OPW517A** (questions on how to fill this out, please reach out to the Quality Manager).

iii. All tier 2 suppliers, at a minimum, must have following documents on file with OPW during Phase 2 of the supplier setup process.
    1. An executed OPW NDA on file
    2. A signed copy of the Dover Supplier Code of Conduct.
    3. An acknowledged copy of the Supplier Quality Requirements Manual, QP-PS-05
    4. ISO9001:2015, IATF16949, or AS9100 Certificate or Quality Manual and Inspection plan on file.

iv. All Tier 1 suppliers must be willing to provide the following information on their Tier 3 (raw material supplier).
    1. Address and name of source where Raw Material was retrieved.
    2. Raw Material Used

g. Supplier is required during the Phase 2 process to provide OPW with the Suppliers Equipment and Facilities List-including capabilities, along with a copy of the Suppliers Annual Shutdown Schedule. These items are requested during phase 2 of setup and annually once the supplier is an OPW approved Supplier.

Companies who do not satisfy and/or will not comply with the preliminary requirements as listed above shall not be considered for any business relationship with Dover.

3. Phase 3: OPW Assessment (includes Tier 1 and 2 suppliers)
   a. In the event of Phase 1 and Phase 2 Supplier Setup Requirements are met, the supplier is given an overview on the product and OPW's requirements. On an agreed day, a member from OPW Retail Fueling visits the supplier and makes an assessment as per the initial visit scoring guide (form numbers for the scoring guide and summary are given below). Only those suppliers whose score is equal to or greater than 80% are recommended for further evaluation. The Supplier Evaluation is carried out as per the Supplier Evaluation checklist and the selection is made based on the following criteria. In the event the supplier scores a B and is still awarded business, the supplier will be provided a list of deficiencies needing improvement, and the supplier must mitigate those deficiencies within 6 months. The supplier must provide OPW detailed evidence of corrective action and sustainment plan. It is at OPW's discretion to schedule a follow up assessment to ensure improvements have been made and the score is within our required criteria.
      i. Supplier Evaluation Form, reference **OPW233A**
      ii. Supplier Evaluation Summary, reference **OPW234A**

Grade	Assessment Score	Overall Score	Risk	Comments
A+	Superior; Highly Recommended	> 85%	None or Low	Suggests extensive quality-driven disciplines and best-practices are implemented; and well-planned high performing training programs are deployed throughout manufacturing operations
A	Recommended	(80 - 85)%	Low	Suggests extensive quality-driven disciplines and high performing programs are implemented; training programs are adequate and deployed throughout manufacturing operations
B	Recommended; Probationary	(75 - 80)%	Moderate	Suggests some quality-driven programs are implemented, extensive improvements to quality management system must be made; training is deficient in several key areas
C	Not Recommended	(70-75)%	High	Suggests very few quality-driven programs are implemented, significant improvements must be made to quality management system; training programs are poor or non-existent in several key areas
D	Not Recommended; Disqualified	< 70%	Very High	Suggests quality-driven and training programs are non-existent in several key areas; complete collapse of quality management system

4. Phase 4: ACH Setup and FAI Approval Process
   a. Supplier must complete Supplier ACH Set-Up form to set up payment type and account information, this form must then be returned via fax to (513)642-3908 or email to AP.DBSNA@dovercorp.com.
      i. Reference **Supplier ACH Set-Up Form**
   b. First Article Inspection Process (FAI)
      i. OPW will send all prints and quantities needed for supplier to quote. If awarded the FAI, an OPW buyer will then issue an FAI po to the supplier and buyer will complete FAI submit request with all necessary information regarding reasoning behind FAI. **Supplier is now provided shipping labels for FAI sample submission (OPW570A) and T1/T2 sample submission (OPW571A), please complete these labels as provided and attach to shipment prior to submission. Some buyers will provide an FAI number on the PO, you can add this to the FAI label template (OPW570A). If the FAI number is not provided on the PO, please feel free to request the FAI number from the Quality Department, this will ensure it is properly routed when it arrives at OPW. For T1/T2 samples, these will not be routed the same way as FAI, there is a separate label template (OPW571A) for this.**
      ii. After the release of the FAI POs or a purchase intent/agreement to the Supplier by OPW, OPW shall request the supplier to complete the **Quality Assurance Questionnaire and Agreement of Inspection (AOI) sheets for the part in question (OPW form numbers given below)**. The completed questionnaire and AOIs are reviewed by OPW and OPW will make necessary corrections (if applicable). The development of samples shall begin only after the technical queries of the supplier are clarified by OPW and both reach an agreement in adhering to the quality requirements.
         a. FAI Quality Assurance Questionnaire, reference **OPW241A**
         b. Agreement of Inspection, reference **OPW240A**
      iii. After the release of the First Article PO, OPW Retail Fueling will send a Golden Sample to the supplier (at the discretion of OPW). Mating parts will also be sent wherever essential. A Golden Sample is a part which is currently used by OPW. The purpose of supplying a Golden Sample is to help the supplier in the sample development process. **A Golden Sample must be used as a reference only by the supplier and should not be considered as a replacement for the drawing**. Eventually the supplier must produce a sample conforming to the drawing and not to the Golden Sample. If there is a difference observed between the Golden Sample and the drawing, clarification is sought from OPW and an agreement will be reached. The supply of Golden Samples is not

mandatory and is solely at the discretion of OPW. Furthermore, it is subject to the availability of sufficient stock at OPW and business conditions. After the receipt of the Golden Sample, the supplier will measure all the dimensions as per the part drawing and submit a report to OPW.

iv. After the completion of sample development, the supplier shall inspect the samples and submit the following to OPW. **If Supplier has any questions on the below requirements, please reach out to the OPW Quality Manager.**

   a. A 5-piece sample **for each cavity (if produced through multiple cavity tooling),** each sample numbered 1 thru 5.
      i. **Box must be clearly labeled "FAI Samples" and reference the FAI purchase order provided by OPW.**
   b. Additional samples (at the request of OPW for functionality/fit testing purposes).
   c. Casting of the completed part where needed (if casting).
   d. Dimensional Inspection Report as per the finished part drawing specifications.
      i. The dimensional inspection report must be submitted in OPW inspection report template, OPW form number given below.
         1. Supplier Inspection Results Form, reference **OPW235A**
      ii. A measuring device that has a resolution at or below 10% of the overall tolerance of the dimension in question must be used for each dimension checked.
      iii. The dimensional inspection report must be submitted physically with the samples at time of FAI submission.
   e. Raw Material Test Certificate (RMTC). The Raw Material Test Certificate shall contain the following information.
      i. Chemical composition
      ii. Ultimate tensile strength
      iii. Yield strength
      iv. Hardness (if applicable)
      v. International standard pertaining to the Raw Material
      vi. Date of Inspection
      vii. Heat Number (if the certificate is issued by a rolling mill)
      viii. Impact load in joules- Charpy (if required)
      ix. The Raw material test certificate shall clearly indicate the International Standard relevant to the raw material specified in the drawing and its conformity as per the standard. If the supplier is unable to submit a RMTC from the mill, a test report from a third-party lab is a requirement.

f. Hardness report (if Heat treatment is involved)
g. Special process test report (Zn, Ag plating, Phosphating, Anodizing, etc.)
h. CMM report (for the dimensions inspected on a CMM)
i. Pressure test report (if the part is pressure tested), if applicable
j. Radiography report- for castings, (if requested by OPW)
k. Functional test results, if applicable
l. Process Flow Diagram (if requested by OPW)
m. Control Plan (if requested by OPW)
n. PFMEA (if requested by OPW)
o. OPW187A requirements, depending on component class, only applies to clean energy component parts.
p. Others

v. After the supplier reviews the reports, if they are found satisfactory, supplier will ship the FAI order to OPW and the quality department will inspect the samples. Once received by OPW, the part is inspected dimensionally, visually, and functionally tested. It is essential that the same measuring instrument type mentioned in the AOI be used for inspection (measuring devices used must have the resolution less than or equal to 10% of the allowable tolerance on any dimension). Once FAI inspection is completed and reviewed by Quality, Engineering, and Purchasing, the Buyer will follow up with supplier on Pass or Fail results and provide the supplier a copy of the FAI report. If a passing FAI results, the buyer will then setup the supplier/sub-supplier as an OPW approved source, and production purchase orders can then be placed with supplier. If the FAI comes back as a failure, the buyer can then decide to open a new line on the FAI po (at no cost) for a resubmission of samples.

vi. FAI approval process is required for Tier 1 and 2 suppliers.

5. Phase 5: Production Approved
   a. If supplier is inquiring to change a current approved parts process flow (i.e. change of suppliers), manufacture, tooling, or design that is different than the original approved FAI samples, a change request must be completed and submitted to OPW at the beginning of the project, reference OPW Change Request Form below. Once OPW receives the form, OPW will determine if the change request can be accepted or denied and will dictate what additional documentation, assessments, transparency update, sub-supplier master file update, and FAI approvals will be needed. Please Note: Production parts cannot be shipped if changes are made until OPW accepts a change request and supplier completes all necessary actions required by OPW (an approved FAI, updated transparency, updated sub-supplier master file).
      i. OPW Supplier Change Request form, reference **OPW524A**

ii. Below are some change examples that require FAI approval. Please follow up with the SQE, your buyer, and design engineer if you have any questions.
   1. Tooling modifications or new tooling
   2. Different raw material used than what is specified on print and what is currently in use.
   3. Ran from a different machine
   4. Change in sub-supplier used for the manufacture of part or subcomponent of part, also includes outside processes such as heat treat, plating, coating. Also includes a different supplier used for an off the shelf part.
   5. New drawing revision (ask buyer/SQE/engineer if the rev change requires FAI)

b. For the first production lot of any newly rewarded part, the supplier shall add a marking to the container which will indicate it was the first production shipment. It is at the discretion of OPW to inspect the initial production shipment and any shipments thereafter. In this case, a member of the OPW Quality team will inspect critical dimensions on a random sampling; sample size determined by OPW. If any feature is found out of specification, more samples are inspected to arrive at a conclusion.
   i. Based on the nature of the defect found, the OPW SQE may take any of the below listed actions…
      1. Reject the lot.
      2. Recommend for rework.
      3. 100% inspect parts for defective feature. After segregation, the defective pieces must be rejected, and the conforming pieces shall be allowed to pass through.
      4. A temporary deviation can be written and approved for the batch quantity or time specific, which authorizes use of the parts, but a long-term resolution must be completed to correct the issue.
   ii. If internal rework or sort is decided, OPW can request the supplier pay for labour associated with those tasks, this is at the discretion of OPW. If parts are rejected, an OPW Buyer, Quality Representative, or Supplier Quality Engineer will issue an SNCR with quantity rejected, po received on, lot information, description of defect, etc. Parts will then be scrapped in house or returned, OPW will request a credit for the parts at time of scrap/return and parts will be unreceived off po the parts were originally submitted against.
      1. OPW SNCR form, reference **OPW184A**

c. If at any time OPW finds a deficiency, including but not limited to part quality issues, internal supplier quality issues found during on site supplier assessment, delivery issues, or the supplier informs us of a deficiency, the supplier may be required to submit a detailed root cause analysis and corrective action to prevent the issue from reoccurrences. The OPW Supplier Quality Engineer has authority to issue the supplier a Supplier Corrective Action Report (SCAR), which details the corrective action plan from start to finish. The issue of the SCAR is at the discretion of the SQE and must be completed and resubmitted back to the SQE by the due date provided on the SCAR.

i. OPW SCAR form, reference **OPW181A**

d. In a production lot, if the supplier has produced parts with a specific deviation, OPW may temporarily accept the parts in the condition for a maximum of 3 months or quantity specific, as long as the deviation does not affect a critical to quality characteristic and the defect does not affect form, fit, function or product performance. The OPW Deviation Approval Form number is given below.

i. OPW Deviation form, reference **OPW085A**

e. OPW may provide the supplier with specific critical to quality characteristics to measure, how to measure (instrument needed) along with AQL level required. This information will be provided using the OPW Sourcing Inspection Plan. Use of this document is at the discretion of OPW, and is based on supplier's past performance, part criticality, etc.

i. OPW Sourcing Sampling Inspection Plan, reference **OPW411A**

f. To ensure the consistency in the quality of the products supplied and the processes followed, OPW conducts Quality Process Audits at the supplier at regular intervals. The frequency of the audits depends on the volume of the business, criticality of the parts and the supplier's track record towards Quality. The Quality Process Audit checklist form number is given below. If the audit score is less than 80%, the supplier shall take necessary corrective actions to achieve a desirable score and OPW shall schedule another audit within the next 3 months to review the corrective actions. No new business award shall be made to the Supplier until the Supplier can attain a score of 80%. If the supplier does not reach a score of 80% within the next 3 months, the Supplier shall be put on a development plan and the situation shall be escalated to the Supplier Development Manager and Global Category Manager.

i. OPW Sourcing Process Audit Checklist, reference **OPW232A**

g. OPW conducts business reviews with its suppliers at a frequency based on how that supplier ranks when considering factors such as quality, annual spend, risk, pricing, location, etc. The supplier is asked to complete a 360 scorecard, and OPW assesses and completes a supplier scorecard. We meet at an agreed upon time to review both scorecards. Reviewing both scorecards allows both entities, supplier and OPW, to work on future developments in the coming months, improving items like quality, customer service, on time deliver, invoice accuracy, etc. Instructions on how to complete both scorecards are detailed within the scorecard form.

1. Supplier Scorecard, reference **OPW520A and OPW521A**
2. Supplier 360 Scorecard, reference **OPW522A and OPW523A**

h. Each shipment of supplied goods must be shipped with a signed certificate of compliance indicating parts meet all requirements as stated in this manual, including a Material Certification. Depending on the part supplied, and as quality concerns arise, suppliers may be asked to electronically submit a certificate of compliance with testing/dimensional data (exact requirements will be given by OPW SQE) prior to shipment. The OPW certificate of compliance standard form number is given below, suppliers can use this as their standard template for OPW; however, they are not obligated to use this template, if the COC template and information provided is acceptable to OPW. Also note, the supplier's raw material composition data as well as dimensional and testing data should be retrievable upon request.
    i. Certificate of Compliance, including Raw Material Certificate, reference **OPW239A**

i. OPW may require a sample (determined by OPW) from each lot produced by supplier be shipped to OPW for testing/dimensions/analysis for approval, to ensure conformity prior to shipment of the lot. In that case, OPW will send a signed Certificate of Compliance to the supplier if parts are approved for use/shipment. In addition, some suppliers may be required to submit dimensional/testing data to OPW, prior to shipment of the lot. In that case OPW will send a signed Certificate of Compliance to the supplier if they are approved allowing the supplier to ship parts. If the supplier doesn't receive a signed Certificate of Compliance, parts are rejected and cannot be shipped. The Certificate of Compliance OPW approval form number is given below.
    i. OPW Supplied Certificate of Compliance, reference **OPW238A**

j. The Supplier shall ensure that all the machines used for producing OPW components are in good working condition. Preventative maintenance of all machines shall be followed and maintaining enough stock of critical machine tool and maintenance spares is mandatory. Tool reports are required to be submitted to OPW on an annual basis for OPW purchased tooling and OPW fixed assets (may include fixtures, machinery, etc.).
    i. OPW Tooling Report, reference **OPW236A**

k. Supplier is required annually and at time of first production run to provide evidence of liability insurance if supplier holds OPW owned tooling, gauges, or equipment.

l. Continuous improvement is an essential part of the Supplier Development process and OPW expects a commitment from its suppliers to continually improve and reduce costs, thereby improving the product quality of OPW. The supplier shall document and report the continuous improvements in the OPW template; OPW form number given below. Supplier will share those improvements with OPW during performance review. Poka-yoke methodology shall be used in a maximum possible way, mainly for exchangeable blocks, clamping jigs and fixtures, assembly equipment, etc. Details regarding the sharing of ideas is stated in the supplier's memorandum of understanding.
    i. Value Creation Template, reference **OPW237A**

m. OPW and Supplier can work together and execute a Memorandum of Understanding Agreement, this is optional and at the discretion of OPW/Supplier.
n. OPW and Supplier can work together and execute a Rebate Agreement, this is optional and at the discretion of OPW/Supplier.
o. OPW and Supplier can work together and execute a Supply Agreement, this is optional and at the discretion of OPW/Supplier.

Reference OPW Supplier Requirements Document, reference **OPW519A** for a quick visual of breakdown of setup phases and what items are required.

3 Basic requirement of OPW Global Sourcing towards Part Quality

The basic quality of the parts supplied to OPW are defined through drawings, specifications, sampling plans, inspection standards, mutually agreed international/local standards, other customer specific quality documents, purchase orders, reference specifications, or other legally binding instruments executed as part of doing business. Compliance with this guide will not eliminate the supplier's responsibility for the compliance with product specifications and legal requirements such as REACH, ROHS, etc.

OPW owns the decision to continue dimensional inspection on receipt of production stock at any time if there are quality issues observed in the previous shipment or any other concerns reported.

If at any time during production (after the initial lots produced) a supplier finds a defect during production, they can take the below action to possibly salvage parts.

1) Supplier contacts OPW (SQE and design engineer) about the non-conformance to determine if the defect is critical or non-critical.
    a. If the dimension is critical, the OPW Engineering department can advise supplier on possible reworks, or the defective parts must be contained, sorted out and scrapped. Future shipments of parts will be evaluated for this defect at incoming inspection to ensure conformity.
    b. If the dimension is non-critical, supplier can raise a requisition for accepting parts temporarily on a deviation and OPW may approve or reject this request (see deviation request section above); however, the non-conformance must be corrected on future shipments. OPW will check for conformity of the defect in question on future incoming inspections at frequency determined by OPW.

For subsequent production lots, the supplier may be required to submit dimensional data, control plans, inspection reports, sampling plans for each lot.

OPW insists its suppliers follow the 1/10 rule of metrology while selecting a gauge or measurement instrument during the FAI as well as during production. Attribute Gauges are allowed for production lots provided it is communicated to OPW in their production control plan (submitted at FAI) and approval is given. The resolution of the gauge must be 1/10 of the tolerance that is allowed for a specific drawing feature.

For example,

A dimension of 10±0.1mm is to be measured

The total tolerance is 200 micron

The resolution (least count) of the gauge must be 1/10th of 200 micron which is 20micron

The gauge should be able to measure down to 20 micron.

4 Additional OPW Clean Energy Component Requirements

OPW is required to maintain traceability of clean energy component parts and their origins due to regulatory requirements.

1. Any components that have special "Clean Energy" requirements are issued a "Component Class" specification.
    a. If the part has a "Component Class", that class number will be provided on the OPW purchase order next to the revision level of the part.
    b. Requirements for each Class, "1 through 4", are provided on OPW Document OPW187A, attached below.
    c. If a component class is not listed, then no additional special requirements are needed.
2. OPW form number, given below, defines the required documentation submitted to OPW for CEFP component class parts.
    a. CEFP Document Requirements, reference **OPW187A**

5 Calibration

Each Gauge/Instrument used by the supplier shall have a unique identification number on it.

A calibration plan should be in place for all the gauges used by the supplier. All the Gauges and Instruments used for checking the conformance of the parts shall be calibrated internally or externally.

All the Gauges and Instruments should be affixed with stickers indicating the calibration status and the next calibration date

The supplier shall determine an acceptance criterion for calibration of each gauge/instrument based on the application and usage of the gauge.

The frequency of calibration shall also be fixed by the supplier depending on the usage of the gauge. Only certified/accredited labs shall be used for calibration.

The certificates of calibration which are obtained from the external labs should be verified and approved with a sign/seal by the QC in-charge and records be maintained

Calibration of master gauges which are used in the calibration of other instruments should be done once in a year and must be traceable to the National/International standards

6 Non-Conformance Management

When there is a Non-conformance reported by OPW, the supplier must initiate the following actions…

- Immediately raise a Quality Alert at relevant departments of your company
- The supplier should report a containment action to OPW within 48 hours from the receipt of the complaint
- The supplier shall submit a detailed CAR (8D Report) to OPW within 30 working days from the receipt of the complaint. This may vary based on the nature of the Complaint and can be extended and agreed upon with OPW.
- The supplier shall use the OPW 8D report format.

The supplier should have a designated area to display the NCRs received with relevant pictures

7 Identification and Traceability

The supplier should have ability to find out the history of a defective product at various stages of product life cycle with the aim to investigate the cause of occurrence and to take countermeasures to improve processes/systems.

7.1 Traceability requirements:

- In principle, parts manufactured by the supplier shall be marked with supplier/month, year code, and heat number at a location where it is easily visible and where it does not affect the function of the part. This rule is only required when it is stated on the print or by the OPW engineering team.
- The supplier shall obtain approval from the OPW engineering department regarding the method and location of marking supplier logo and month/year code on the part.
- For suppliers producing UL and ATEX approved completed products, they are required to add labelling on the product showing traceability as to the origin of manufacture.

7.2 Non-Feasible parts for traceability

For such parts, on which it is not possible to mark the identification code, the supplier must control lots in such a way that it would be possible to trace manufacturing history and date of supply to OPW from the records. Suppliers must ship using FIFO at their location and from any warehouses the product is stocked prior to shipment to OPW.

In case of raw material analysis/test reports you shall record details of date & shift of production.

7.3 Identification

1. All components, semi-finished and finished products are identified at each production stage.
2. All equipment (tools, patterns or molds) related to a specific model/product shall be identified based on input by OPW or by product part number with OPW's name.
3. All the rejected/suspected components shall be quarantined away from shipping and production areas into a designated quality hold location. They must be isolated and identified separately to prevent their mix up with the good pieces.

8 Packaging and Delivery

All the products shipped from your facility to OPW shall be free from any chemical contamination, coolant/water droplets, corrosion, dust, impurities, chips, burrs, etc. In case of wooden packaging, the packaging material shall be properly fumigated and shall be certified. It is the supplier's responsibility to use suitable packaging methods to prevent handling damages and part corrosion/part contamination during transit.

The Supplier shall submit a packaging plan to OPW before the first production lot and OPW will determine if it is suitable.

Labelling, packaging slips, or tags attached to the delivered parts shall contain the following information: supplier name, supplier location or part country of origin, part number, part revision, part description, PO number, quantity shipped, quantity in box, box number, invoice number (only necessary on packing slip) and manufacture date (only necessary on box). **Please see additional labelling requirements for FAI and T1/T2 samples in section 4b**.

9 Preservation of Customer Property

It is the responsibility of the Supplier to identify and preserve all gauges, fixtures, component samples, mating parts, tooling provided by OPW. When OPW provided gauges, fixtures, and tooling are nearing toward end of life, it is the responsibility of the supplier to notify OPW.

10 Archiving

All quality and OPW product relevant documentation shall be archived at supplier for period of 1 year, unless there is a specific retention period requested.

11 OPW Supplier Forms

All OPW form numbers given in this supplier quality manual are controlled by OPW, they cannot be edited or modified by anyone except OPW and must be officially released by OPW under a new revision if changed. Please ask the OPW SQE for the current form revision on file when needed.

12 Revision History

REV LEVEL	DN #	CHANGE DETAILS	DATE	WRITTEN BY
00	3279	Initial Release	4/23/2019	S. Miles
01	3279	Updates to section 9, Clean Energy requirements	3/17/2020	S. Miles
02	3279	1. Moved section 1.1 to section 3	02/03/2022	S. Miles

		2. Added Supplier Setup and Supplier Maintenance-OPW Supplier Requirements into section 2. - Explained the OPW Supplier Setup process and Supplier Requirements, it is a 5 phase program, see OPW519A for quick visual. - Moved section 3, 4, 5, 6, 7, 8, 10 16, 17, 18, 21, 22 into this section, - Added more detail to the FAI process. - Added supplier scorecard review section - Added more detail to transparency section - Added Sampling plan, Supplier change request form, etc 3. Moved section 11 into section 3. 4. Added "return signed scanned copy by email to OPW Supplier Quality & Compliance opwrf-sqc@opwglobal.com" to section 13.		
03	3279	Changed written by title. Added to section 4B …. Supplier is now provided shipping labels for FAI sample submission (OPW570A) and T1/T2 sample submission (OPW571A), please complete these labels as provided and attach to shipment prior to submission. Some buyers will provide an FAI number on the PO, you can add this to the FAI label template (OPW570A). If the FAI number is not provided on the PO, please feel free to request the FAI number from the Quality Department, this will ensure it is properly routed when it arrives at OPW. For T1/T2 samples, these will not be routed the same way as FAI, there is a separate label template (OPW571A) for this. As well as… iv. After the completion of sample development, the supplier shall inspect the samples and submit the following to OPW. If Supplier has any questions on the below requirements, please reach out to the OPW Quality Manager. a. A 5-piece sample for each cavity (if produced through multiple cavity tooling), To section 4 b.		
04	3279	Removed section 4 line 3. OPW187A provides all this detail, and it has recently been updated, no need to have all details in 2 documents.	12/24/2023	S. Miles

13 Supplier Acknowledgement

Please return signed scanned copy by email to OPW Supplier Quality & Compliance opwrf-sqc@opwglobal.com

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We hereby confirm receipt of the forward Supplier Quality Requirements Manual and agree to comply with the requirements.

SUPPLIER NAME ____

ADDRESS ____

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SUPPLIER SIGNATURE ____

(AUTHORIZED SIGNATURE)