Xylem Inc.

Supplier Quality Manual

xylem
Let's Solve Water

Under the Xylem Supplier Quality Program, we are deploying our new Supplier Quality Manual.

At Xylem we recognize the very important role our Suppliers have in the value we offer our Customers. Products and Services from Suppliers contribute strongly to the high quality products and services we offer, and our customers expect and deserve quality that is unparalleled.

We are committed to establishing and developing long term partnerships with our Suppliers, and establishing a common, sustainable growth with our Suppliers.

The purpose of this Supplier Quality Manual is to describe Xylem's standard approach toward Supplier quality. Its primary purpose is to communicate to our Suppliers the minimum requirements necessary to assure that the quality of supplied products and services, both to our factories and our Customers' sites, meet or exceed our Customers' expectations.

Tony Milando

Senior Vice President, Continuous Improvement & Business Transformation

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1. Introduction

1.1 List of Abbreviations, Acronyms, Definitions & Terms

Approved Supplier List	Identifies the group of Suppliers Xylem has approved to supply a given commodity segment. The approval process for these Suppliers is based on thorough analysis of the Supplier's capability to consistently meet requirements including quality requirements.
Cpk	Process Capability Index. Adjustment of Process Capability for the effect of non-centered distribution.
CTQ	Critical to Quality. The key measurable characteristics of a product or process whose performance standards or specification limits must be met in order to satisfy Xylem's customers.
containment	Action taken to minimize the risk and impact to Xylem or its customers associated with a non-conformance. Containment actions may be focused on (a) the product/service in which the non-conformance is suspected or identified, and/or (b) similar products or product families in which the non-conformity may occur.
corrective action	Action to eliminate the cause(s) of an existing non-conformance and prevent recurrence.
NCR	Non-Conformance Report. Document issued by Xylem to document identified non-conformances.
PPAP	Production Part Approval Process. The industry standard for defining the production part approval process to ensure engineering design record and specification requirements are consistently met.
8 Disciplines (8D)	The Eight Disciplines of Problem Solving is a problem solving methodology designed to find the root cause of a problem, devise a short-term fix and implement a long-term solution to prevent recurring problems.
repair	Action performed on a product to rectify the non-conformance so that the product meets functional and appearance-related requirements for its intended purpose.
rework	A type of correction performed to a non-conformance that completely eliminates the nonconformance such that the product conforms to the specifications and requirements.
replacement	Action performed to replace a product with a new product that meets all requirements.
scrap	Disposition of a non-conforming product that is not useable for its intended purpose and cannot be economically reworked or repaired in an acceptable manner.
Supplier Deviation Request	A request initiated by the Supplier for approval to deviate from a specific requirement following a suspected or identified product non-conformance.
XGP	Xylem Global Procurement

1.2 Objective and Scope

This manual's objective is to unify Xylem's supplier requirements and core expectations in a single document. By sharing this manual with our Suppliers, we hope to both thoroughly educate our Suppliers and build the foundation for a successful and transparent relationship.

The scope of this manual extends to all Xylem's suppliers ("Suppliers") and the Suppliers' subcontractors or sub-suppliers ("Sub-Suppliers"). The requirements contained in this manual do not supersede or replace any contractual terms or legal or regulatory requirements with which Xylem or Supplier must comply, which will apply and prevail if more stringent. Implementation of quality requirements does not grant suppliers additional rights (including as to intellectual property rights, claims for additional costs or extension of time). Supplier's rights are governed solely by the relevant contractual terms and conditions in the applicable contracts or agreements between Supplier and Xylem.

1.3 Supplier Integrity

Suppliers must be ethical in their relationship with Xylem, which includes protecting Xylem's confidential information and intellectual property. Xylem fosters a culture of anti-bribery and anti-corruption and embeds and enforces procedures designed to prevent bribery and corruption by employees. A complementary code of ethics is expected from all parties interacting with Xylem, including Supplier, and appropriate measures must be adopted by Supplier to comply with applicable laws and regulatory requirements.

2. General Supplier Requirements

2.1 Language

English is Xylems preferred language. Subject to Xylem's approval, local languages may be permitted in some cases.

2.2 Quality Management System Requirements

The Supplier shall maintain a documented quality system to ensure control and conformance with Xylem's quality requirements and its customers' requirements. Xylem expects its Suppliers to have effectively implemented a quality management system in compliance with the ISO9001:2015 standard, or an equivalent standard.

2.3 Restricted Substances and Product Safety

All materials supplied shall satisfy applicable governmental and Xylem constraints on toxic or otherwise restricted materials, along with environmental, electrical and electromagnetic considerations. The Supplier shall implement and maintain a process to ensure that purchased products and relevant manufacturing processes comply with any toxic or otherwise restricted substance requirements.

2.4 Customs and Export Control

The Supplier shall notify Xylem about any items (e.g., goods, software, technology) supplied to Xylem that are subject to export controls under any laws of the United States of America, the European Union or its member countries, or any other countries. This includes goods derived from controlled technology, or software co-mingled with controlled software. The Supplier will provide country of origin information or certification in a manner that meets import requirements at destination. The Supplier will also provide documentation requirements for Xylem, including but not limited to: issuing certificates of origin, origin determination, and preferential origin calculation, etc.

2.5 Conflict Minerals

Suppliers must fully comply with the Xylem Conflict Minerals Policy. The Xylem Conflict Minerals Policy is accessible on the Xylem webpage https://www.xylem.com/en-us/about-xylem/conflict-minerals-policy-statement/

2.6 Environment, Health & Safety

The Supplier shall comply with all applicable environment, health and safety-related regulations.

Xylem expects that its Suppliers are actively engaged in environmental concerns. Evidence of this commitment may include the establishment and adherence to an environmental management system such as the latest ISO 14001 standard or an equivalent standard.

Xylem expects that its Suppliers have a system for managing health, safety and promoting safe work environments by providing a framework that allows the organization to consistently identify and control risks related to health and safety, reduce potential accidents, support policy enforcement and improve overall performance. Compliance with the OHSAS 18001 standard is preferred.

2.7 Control of Sub-Suppliers

The Supplier is responsible for ensuring this Xylem Supplier Quality Manual, applicable procedures and product/service documentation and subsequent changes are provided to Sub-Suppliers. If a Supplier chooses to subcontract or outsource a process, the Supplier shall inform Xylem of any such outsourcing or subcontracting arrangement. The Supplier is fully responsible for the qualification and surveillance of all Sub-Suppliers with respect to Xylem's requirements and Supplier's obligations.

2.8 Risk Management

The Supplier shall establish a risk management process to effectively assess and control elements of its business that could negatively affect the quality of the products, services and delivery to Xylem.

2.9 Business Continuity

The Supplier shall have a business continuity plan containing contingency plans that satisfy Xylem's production and quality requirements in the event of significant or repeated utility interruptions, labor shortages, equipment failure, field returns or natural disasters. The plan should also allow for the safeguarding, storage and recovery of documentation pertaining to any contract, including but not limited to: engineering drawings, electronic media, and production tooling in the event of damage or loss of product. The Supplier's Business Continuity Plan shall be periodically reviewed, updated and shared with Xylem upon Xylem's request.

2.10 Record Storage & Retrieval

The Supplier is responsible for record storage and retrieval in compliance with requirements shared and agreed upon with Xylem. Relevant production and process records defined during the qualification process must be available for a minimum of five years after their creation or as otherwise agreed upon by Xylem.

2.11 Xylem Owned Fixtures, Tooling and Equipment

The Supplier shall have a documented process for the handling and treatment of consigned fixtures, tools, and equipment utilized for Xylem products. The Supplier shall immediately notify Xylem if the fixture, tool, or equipment (as applicable) is lost, damaged, unsuitable for use, or moved to a different manufacturing facility. All fixture, tool, and/or equipment maintenance and servicing must be traceable back to the manufacturer's recommendations, with records that are made available for audit by Xylem.

2.12 Packaging, Labels, Storage Shelf Life

All packaging, labels, and storage shelf life requirements shall be reviewed and agreed upon by Xylem. The Supplier shall work with Xylem to reduce the impact of packaging waste. The Supplier shall use First-In-First-Out (FIFO) methodology to manage its physical inventory.

2.13 Date Sensitive Materials / Obsolescence Management System

The Supplier shall not ship date sensitive materials older than 20% of the manufacturer's shelf life as defined by and agreed upon by Xylem. Suppliers must indicate whether shelf life control must be applied on a shipped part or material (e.g., varnish, paint material, coating material, resins, some sensitive electronic components like electrolytic capacitors, etc.).

3. Supplier Qualification

3.1 Approved Supplier

Suppliers are approved by XGP and/or Xylem site sourcing teams for designated categories and/or processes. Suppliers will be added to the Xylem Approved Supplier List when they demonstrate compliance with Xylem's business criteria and quality requirements.

3.2 Supplier Self-Assessment

Supplier may supply general information for initial screening using the Self-Assessment Survey. If requested by Xylem, Supplier must fully complete this Self-Assessment Survey. Self-Assessment Surveys may be requested for new and existing suppliers based on approval status and ongoing performance.

3.3 Supplier Quality Audit

A Supplier Quality Audit may be conducted at the supplier site to qualify the Supplier. Xylem, its affiliates, and Xylem customers reserve the right to perform audits and/or inspections at Suppliers' facilities and/or Sub-Suppliers' facilities in order to:

- Examine all pertinent documents, data and other information relating to Xylem products, tooling or any Xylem purchase order.
- View any facility or process relating to Xylem products or any Xylem purchase order.
- Audit any facility or process to determine compliance with the requirements of any Xylem purchase order.
- Perform Xylem-directed independent verification of Suppliers' product at the Suppliers' premises and with Suppliers' inspection equipment.

When a Supplier Quality Audit is required, the audited Supplier must provide: full access to its equipment and facilities, complete and accurate paperwork, and the personnel necessary for Xylem representatives to verify compliance. Any such audit activity will be conducted during normal business hours and with advance written notice to Suppliers. Supplier shall act promptly to resolve all adverse findings as a result of the above audit activity.

3.4 Certifications and Supporting Documentation

Xylem may request, and Supplier shall provide, copies of certificates and supporting documentation, including but not limited to:

- Cleanliness certifications (clean room, IPC, etc.)
- Regulatory listings (UL, CSA, etc.)
- Material composition, declaration or certificate
- ISO certifications
- Quality Management System (QMS) related documentation

3.5 Maintaining Approved Supplier Status

At any time Xylem may, at its sole discretion, remove the Supplier from the Approved Supplier List. In making such a decision, Xylem may consider any criteria deemed relevant, including but not limited to:

- Quality and delivery non-performance of supplier: NCRs and On Time Delivery (OTD) statistics.
- Unsatisfactory response, late response, or failure to respond to Corrective Action requests or other legitimate Xylem requests.
- No business activity for 24 months.
- Change in Supplier's manufacturing or processing capability.
- Unsatisfactory or insufficient response following a Supplier Quality Audit or other audit.
- Major changes to ownership
- Changes to facility
- Significant or frequent quality/delivery issues

4. Product Part Qualification

The Supplier must immediately notify its responsible buyer at Xylem if it has questions or concerns about requirements for engineering drawings and/or specifications. Handwritten, lined-out or initialed changes to engineering drawings, specifications or technical data are prohibited by Xylem.

4.1 Production Part Approval Process (PPAP)

The purpose of performing the PPAP is to document objective evidence that Xylem's Suppliers' products conform to the relevant engineering drawings and meet the applicable design specification requirements. The PPAP procedure has been developed to enhance conformity to Xylem's customers' specifications and Critical to Quality (CTQ) characteristics, thereby resulting in customer satisfaction and continuous improvement. Xylem requires different levels of PPAP (Table 1) depending on the relevant product characteristics. PPAPs are unique by drawing revision, supplier, tool and equipment. Suppliers are responsible for ensuring all applicable PPAP requirements have been completed and submitted to Xylem as indicated on the cover page of the Part Submission Warrant (PSW) or equivalent document.

Table 1: PPAP Retention/Submission Requirements

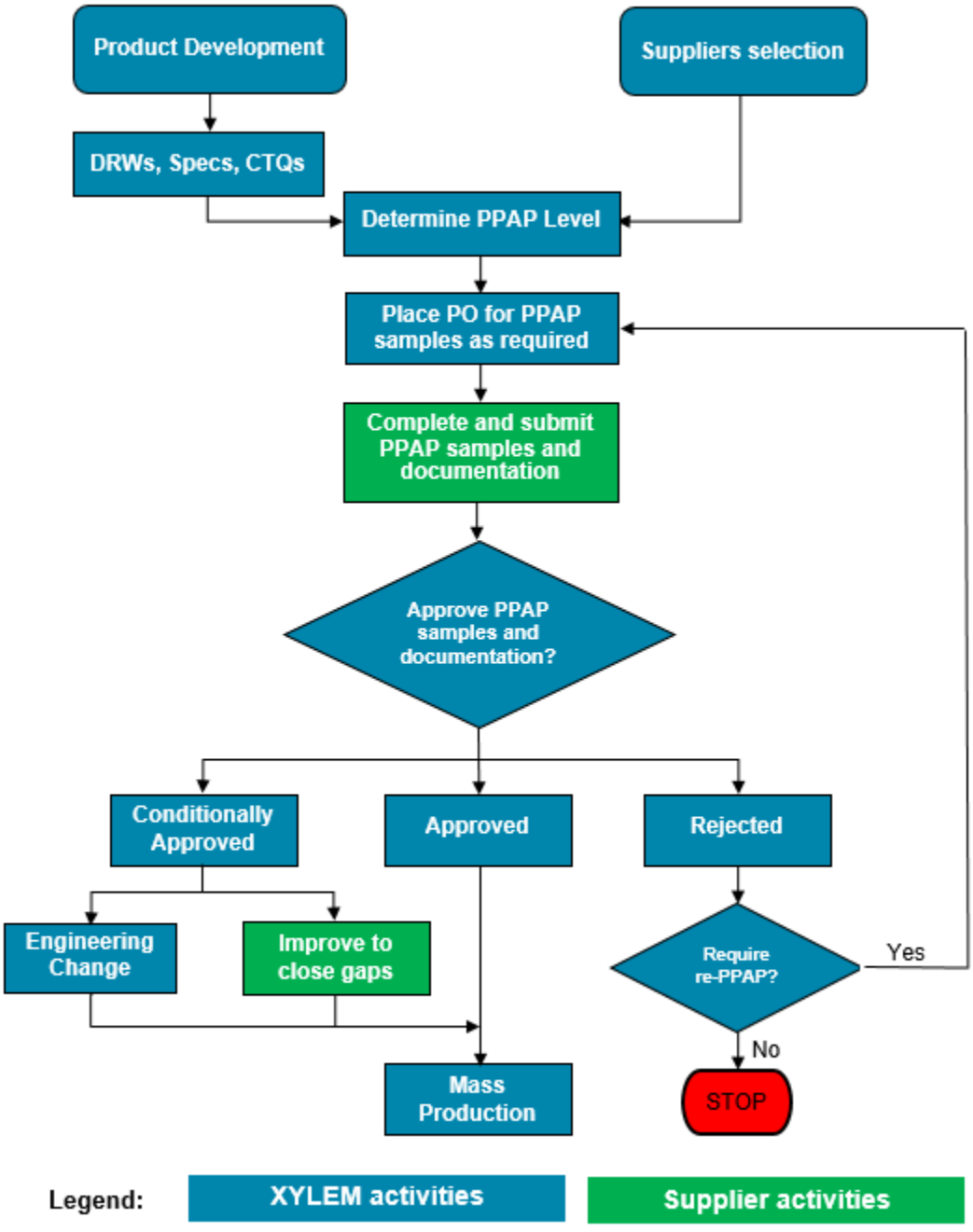
Retention/Submission Requirements						
Requirement		Submission Level AIAG Level				
		1	2	3	4	5
1.	Design Records of Salable Product	R	S	S	*	R
	- for proprietary components/details	R	R	R	*	R
	- for all other components/details	R	S	S	*	R
2.	Engineering Change Documents, if any	R	S	S	*	R
3.	Customer Engineering approval, if required	R	R	S	*	R
4.	Design FMEA	R	R	S	*	R
5.	Process Flow Diagrams	R	R	S	*	R
6.	Process FMEA	R	R	S	*	R
7.	Dimensional Results	R	S	S	*	R
8.	Material, Performance Test Results	R	S	S	*	R
9.	Initial Process Study	R	R	S	*	R
10.	Measurement System Analysis Studies	R	R	S	*	R
11.	Qualified Laboratory Documentation	R	S	S	*	R
12.	Control Plan	R	S	S	*	R
13.	Part Submission Warrant (PSW)	S	S	S	S	R
14.	Appearance Approval Report, (AAR) if applicable	S	S	S	*	R
15.	Bulk Material Requirements Checklist	R	R	R	*	R
16.	Sample Product	R	S	S	*	R
17.	Master Sample	R	R	R	*	R
18.	Checking Aids	R	R	R	*	R
19.	Records of Compliance with Customer-Specific Requirements	R	R	S	*	R

***S** = the Supplier shall submit to designated customer product approval activity and retain a copy of records or documentation items at appropriate locations (including manufacturing locations).*

***R** = the Supplier shall retain at appropriate locations (including manufacturing locations), and make available to the customer representative upon request*

*** = The Supplier shall retain at appropriate locations and submit to customer upon request.*

The PPAP may be requested by Xylem at its sole discretion pursuant to the guidelines listed in this section. Sample parts must be representative of mass production equipment, tooling, fixtures and processes. The PPAP is to be applied both for buy and re-sale finished products. All sample parts will be requested through a formal Purchase Order. ***Figure 1: Supplier Production Part Approval Process Flowchart***



4.2 Process Capability for CTQ Characteristics

The Supplier must control and sustain the key parameters of the process affecting CTQs. The Supplier must retain process control and capability records related to the relevant product. The control process must be illustrated by key performance indicators (e.g. Cpk indices). In order to be considered an acceptable process capability, the applicable Cpk must be greater than 1.33 unless specified otherwise by Xylem.

- **Where a design is owned by Xylem:** CTQs defined in Xylem documents (i.e. drawings, specifications), which are shared and reviewed with the Supplier.
- **Where a design is owned by the Supplier:** Xylem will work with the Supplier in order to establish proper CTQs to meet Xylem's expectations.

4.3 When a PPAP is Required

The Supplier must notify Xylem immediately, in writing, of any of the events identified in Table 2, and obtain approval prior to manufacturing and delivery. If the Supplier is uncertain whether a PPAP is required, the Supplier should promptly contact the associated Quality and Procurement contact within Xylem.

Table 2: Instances in which a PPAP is Required

When a PPAP is Required
Initial submission
Engineering change (i.e. material, fit, form, function)
Supplier/Sub-Supplier tooling transfer, Replacement, refurbishment, or Repair
Correction to discrepancy (when CTQ)
Change to optional construction or material
Sub-Supplier or material source change
Change in part processing
Parts produced at additional location
Other, if required by Xylem

4.4 Shipment Approval during Mass Production

Under special circumstances and as required by Xylem, Suppliers will be asked to provide additional documents (Certificate of Conformance, test data, etc.) before shipping products to Xylem.

5. Non-Conforming Material

5.1 Non-Conformance Management

The Supplier is responsible for the quality of its parts, equipment, products and services. When a non-conformance is detected at Xylem sites, Xylem will notify the Supplier of the non-conformance. A non-conformance report (NCR) may be issued based on the severity and urgency of the non-conformance. Suppliers must take immediate action to identify and contain any material suspected of being non-

conforming to prevent its use, shipment, and/or mixing with conforming material. Areas of containment include, but are not limited to:

- Finished or incoming warehouses
- Work-in-process
- Transit to Xylem

The Supplier must notify Xylem within 24 hours of any suspected non-conforming material that has been shipped. The notification includes part number, lot size, lot number, ship date, and quantity. The Supplier may be asked to support any or all of the following at Xylem's discretion:

- Immediate return of the entire affected delivery to the Supplier, which must then provide a Replacement delivery.
- Sorting activities carried out by the Supplier at the Xylem site.
- Sorting activity carried out by Xylem personnel or by a third party company approved by Xylem. After approval of this option by the affected Xylem site(s), the Supplier shall provide clear inspection instructions and agrees to bear the full cost of the operation.
  Note: The Supplier must notify Xylem as to the disposal of non-conforming products, parts or components: return, scrap, repair, rework, etc.
- The Supplier must notify Xylem when the first batch of conforming products will be delivered.

When a non-conforming report is issued to the Supplier, the Supplier must submit a Corrective Action plan within 10 working days. An extension of time may be granted by Xylem depending on the nature of the non-conformance. The report should follow the principles of 8 Disciplines (8D) method, or an equivalent methodology of the Supplier, and must conform to Xylem requirements. The Supplier should close Corrective Actions within 20 working days after notification of non-conformance. The final validation of a Corrective Action must be confirmed through comprehensive monitoring of the effectiveness of the action plan, which may be verified by Xylem. Once Corrective Actions have been validated, the Supplier must take appropriate actions to prevent reoccurrence.

5.2 Supplier Deviation Requests

A deviation is considered negligible from a form, fit, function and reliability point of view. A deviation is also considered a temporary solution. The Supplier shall not ship product that deviates from the drawing, specification limits, or design intent without prior consultation with, and written authorization from Xylem. The Supplier shall notify Xylem in the event of potential or actual concern regarding product non-conformance. Xylem may request samples, data, documents or other evidence in order to determine the acceptability of the deviation.

5.3 Recovery

Xylem reserves the right to charge back the Supplier for any costs related to non-conformance.

6. Supplier Performance and Continuous Improvement

6.1 Supplier Performance Monitoring

The performance of the Supplier is monitored by Xylem. This performance is primarily measured by the following metrics:

- Supplier PPM: This metric calculates the total number of verified defective parts received by Xylem compared to the total number of parts received by Xylem during a specific reporting period.
- On Time Delivery (OTD): This metric calculates the percent of product received on time compared to Xylem required date.

Additional performance criteria may be added at Xylem's discretion. Supplier Performance may be communicated through a scorecard or other means. In the event of poor Supplier performance, a plan for improvement should be developed and agreed upon between the Supplier and Xylem. Xylem reserves the right to perform periodic on-site audits of the Supplier's facility, quality systems, records, and product ready for shipment.

6.2 Continuous Improvement Program

The Supplier shall have a continuous improvement program aimed at improving its quality, cost and service performance over time. The Supplier's continuous improvement program must be made available to Xylem upon request.

For example, the Supplier is expected to:

- Have an adequate employee training plan
- Work on eliminating performance issues
- Work on the early identification and prevention of failure
- Work on increasing the value added by its products/services
- Work on generating Value Analysis and Value Engineering ideas
- Improve On Time Delivery performance
- Decrease number of NCRs
- Elimination of Scrap and Rework
- Minimize process variation
- Improve productivity

Xylem values collaboration with Suppliers that have a strong continuous improvement culture and may request joint continuous improvement initiatives such as: lead time improvement, increased efficiencies, defect elimination, Lean or Kaizen events etc.

7. Revision History

Revision Number	Revision date	Reason for new revision
01	04/30/2018	Initial Release
02	09/30/2018	Multiple minor revisions
03	2/28/2019	Update Supplier Production Part Approval Process Flowchart
04	5/14/2019	Revisions by McDermott Will & Emery LLP