**SUPPLIER QUALITY REQUIREMENTS**

**General Specification**

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# Scope

This specification provides the General Quality Requirements for Suez external direct material suppliers. This specification applies to purchased direct materials and services.

# Applicable Documents

## Documents

The following documents form a part of this specification to the extent specified herein. Alternate applicable business-specific specifications are communicated to Supplier as required (examples, ASME, API). Unless otherwise indicated, the latest document revision shall apply.

### Suez

P28A-AL-0203 Nondestructive Testing Process Qualification and Approval

206-009 Marking, Preservation, Packaging and Shipping Procedure

DS-06004 Painting Systems and Colors Specification

MS-07018 Lining Specification

1300983 Chemical Cleaning & Passivation of Stainless Steel Parts

MS-09004 Atmospheric FRP Tank Design Specification

MS-09008 Fiberglass Reinforced Plastic (FRP) Piping Design & Installation Specification

MS-09009 FRP Piping Specification Materials

### International Standards

ISO 9001:2008 Quality Management Systems Requirements

American Society of Mechanical Engineers (ASME)

ASME II Material Specification

ASME V Non-Destructive Examination

ASME VIII-Division 1 Rules for Construction of Pressure Vessels

ASME IX Welding and Brazing Qualifications

ASME X Fiber-Reinforced Plastic Pressure Vessels

ASME B31.1 Power Piping

ASME B31.3 Process Piping

American Welding Society (AWS)

AWS D1 Structural Welding Code(s)

Canadian Welding Bureau

CWB Structural Welding Code(s)

Canadian Standards Association (CSA)

CSA W59 Welded Steel Construction

## Hierarchy of Documents

Supplier – the Purchase order is the governing document which transmits Suez requirements to the Supplier.

In the event of a conflict between documents, the order of precedence from highest to lowest is as follows:

* Contract
* Purchase order
* Part Drawing / Material Specification
* Part Process Specification
* General Requirements Specifications

# Definitions

## Terms

|  |  |
| --- | --- |
| **Approved Supplier** | A supplier who has successfully completed the Approval process and has been enabled to receive Purchase Orders via electronic purchasing system. |
| **Commodity** | A grouping or family of parts that is similar in characteristics (an example would be pro equipment carbon steel skids). |
| **Direct Material** | Material that impacts the quality performance, or integrity of the end product to be delivered to the customer. |
| **First Piece Qualification (FPQ)** | The process by which a supplier produces an initial piece, set, or lot or provides a service as an element of the qualification process. |
| **Frozen Process** | A manufacturing method, process, procedure or control considered qualified by the appropriate Suez qualification team for a specific component or service. A frozen process cannot be changed without approval by the appropriate qualification team members. |
| **Raw Material** | A material utilized as a Suez re-label, intermediate or individual blend/reaction component. These raw materials may include but are not limited to chemicals, processing aids and packaging materials, which meet GE Betz specification |
| **Class D - Commodity Chemicals** | Basic chemical feed stocks and Chemical Industry bench marks (i.e. caustic, sodium molybdate and inorganic phosphates) |
| **Class C - Industry Standards Chemicals** | Raw material with industry-wide specifications (i.e. ethoxylated non-phenols and ethylene oxide/propylene oxide block copolymers, orange terpenes) |
| **Class B/A – Exclusive Specialty/Performance Chemicals** | Raw materials which require proprietary Suez application technology performance testing conducted by Technology and Product Design Groups. |
| **Supplier Quality Engineer (SQE)** | Suez Quality representative who defines the qualification and quality requirements and is the key interface with the supplier relative to the qualifications, process improvements, non-conforming materials, corrective actions and surveillance auditing. |
| **Inspection and Test Plan (ITP)** | Sometimes referred to as a Quality Plan, identifies project specific inspection and test requirements for buy-out (direct) materials, equipment, or services and includes the following information;   * Identifies reviews, inspections and test activities / milestones associated with the design, procurement and manufacture of the supplier goods or services. Activities should be listed in sequential order on the ITP. * Identifies Suez and client inspection and/or surveillance requirements of the activities. * Identifies the applicable procedures, documents, or specifications that explain the operation and acceptance criteria of the inspection or test activity. |
| **Item Type** | Suez production components/materials are classified into categories which determine the qualification requirements. Qualification requirements and inspection levels are not solely determined by these guidelines but may also include factors such as customer contracts and history. |
| **Manufacturing Process Plan (MPP)** | A detailed, step-by-step list of operations, requirements, and controls by which the product being manufactured is produced, inspected and tested. This may also be referred to as a Process Flow Diagram (PFD). |
| **Product Quality Plan (PQP)** | A detailed, step-by-step list of operations and requirements by which a supplier identifies a process of how, what, why, when and who will perform tests or inspections. PQP’s include list reviews, tests, inspections, and any other documents maintained to ensure quality during production. This may also be referred to as a Process Control Plan (PCP). |
| **Qualification Process** | Process to demonstrate the ability to fulfill specific requirements. The term “qualified” is used to designate the corresponding status. Qualification can concern a person, product, process or system. |
| **Qualified Supplier** | A Supplier who has successfully completed the Qualification Process and is authorized to receive future orders for a specific material, parts, part families, commodities, or services for which it has been qualified. |
| **Special Process** | Process for which the resulting output cannot be verified subsequent monitoring or measurement. This includes any processes for which deficiencies are only apparent after the product is in use or the service has been delivered. |
| **Supplier Compliance Plan** | A document provided by the supplier which outlines the plan that will be used to demonstrate compliance to the requirements for qualification of specific material, parts, part families, commodities, or services. |
| **Nonconformance Report (NCR)** | A Suez nonconformance report initiated during processing through a Suez factory or location. This may also be referred to as a Quality Control report (QCR) or Nonconformance report (NCN). |
| **Field Service Notice (FSN)** | A Field Service Notice documents nonconformances identified by Suez field engineers and authorizes the field to perform warrantable equipment repairs. This is also referred to Customer Issue Tracking (CIT). |
| **Quality Incident (QI)** | A Quality Document used to communicate a quality incident to a supplier requiring a formal root cause investigation and appropriate corrective and preventive actions response. |
| **Supplier Deviation Request (SDR)** | If the supplier needs clarification on a dwg/spec during an RFQ or after a PO is issued or if at any point prior to shipment, the supplier identifies a non-conformant condition that it believes may still be acceptable, the supplier can request permission to ship the product, through the Supplier Deviation Request**.** |

## Acronyms

|  |  |
| --- | --- |
| **CTQ** | Critical to Quality |
| **ITP** | Inspection and Test Plan |
| **MPP** | Manufacturing Process Plan |
| **NCR** | Nonconformance Report |
| **PQP** | Product Quality Plan |
| **PS** | Product Support |
| **SQE** | Supplier Quality Engineer |
| **TRS** | Technical Regulations and Standards |

## Item Type Classifications

One of three categories into which Suez production components/materials are classified. These categories are Chemicals, Standard Flow parts, and Custom Project components. Determination of specific item classification type is made by the Suez qualification team.

### **Chemicals**

New or existing chemical materials, such as intermediate or individual blend / reaction components and also re-label or packaging materials for use in Suez products.

Examples: Class A, B, C, D raw materials

### **Standard Flow Components**

These components are designed by Suez per detail drawings.

Examples: Fabrications, RO skid frames, F&M components, spacers, ATD, Permeate headers,

### **Project Specific Custom Components**

Project or customer specific components, may be designed by Suez or designed by the supplier to a Suez functional specification

Examples: Project specific fabrications, pressurized vessels, HDPE/LDPE Tanks, Titanium tubes.

# Requirements

## Introduction

### Purpose

The purpose of this Supplier Quality Requirements specification is to establish a set of procedures, practices and expectations pertaining to the quality of items purchased by Suez. The requirements set forth herein will ensure a consistent, quality-based relationship between Suez and all its direct material suppliers.

### General Guidelines

It is the responsibility of the supplier to define and implement a detailed quality system that ensures all products supplied to Suez is of the highest quality possible by conforming to Suez drawings and/or applicable specifications and meeting all the requirements set forth in this document. Any applicable industry standards (such as ANSI, AGMA, API, etc.) must also be incorporated into the system. This system must be made available to Suez for review upon request.

### Communication

The Suez purchase order designates the Sourcing Representative who is the primary contact with the supplier for commercial issues. The SQE is the primary quality and technical contact. Changes to purchase order requirements shall not be accepted by the supplier without a formal purchase order change, an approved SDR or through cleared non-conforming material reports (e.g., NCR). The supplier must identify and notify Suez of its designated point of contact for the qualification process.

## Quality System

### Minimum Quality System Requirements

The supplier must maintain a documented quality system to ensure control and conformance to the requirements of Suez’s drawings and specifications. Suez requires that this quality management system meet the requirements of ISO 9001:2015 or an equivalent applicable standard (as determined by Suez). Compliance to this requirement must be demonstrated by either of the following:

Provide a copy of *the supplier’s Quality Manual and* current certifications, or

Successful completion of a quality management systems audit

### Control of Special Processes

Suppliers must have specific, documented and controlled procedures for each special process performed. Special processes include, but are not limited to:

* Welding
* Surface Preparation and Painting
* Pickling and Passivation
* Shot-peen
* Brazing
* Non-Destructive Evaluation
* Rubber Lining
* Printed Circuit Board Manufacture
* Wiring
* Castings
* Machining
* Surface Treatment
* Injection Molded

#### Process Specific Approval Requirements

**Welding**

For suppliers performing welding as a primary value-added process, certification as a qualified fabricator is required. This certification may be performed by a third party, as required by Suez, and may include:

* AWS (American Welding Society) Certified Fabricator
* ASME (American Society of Mechanical Engineers) boiler and pressure Vessel Fabrication Stamp Holder
* CWB Certification
* Major proof of qualification (Class E) in accordance with DIN 18800 part 7 “Steel structures, execution and manufacturer qualification”
* PED (Pressure Equipment Directive) Certification
* AISC (American Institute of Steel Construction) Certification
* Other suitable certifying bodies as determined by Suez

**NDE**

Suppliers, including sub-tier suppliers, performing NDE shall be qualified in accordance with P28A-AL-0203, as applicable. Submittal of procedures for review and approval may be required.

Where positive material identifications (PMI) is required, the supplier will follow Suez WTS sampling test plan which is 100% for a lot of 25 pieces or less; 50% for a lot of 26 to 50 pieces; 35 pieces for a lot of 51 to 150 pieces; 45 pieces for a lot of 150 to 2,000 and 75 pieces for a lot of 2,001 to 5,000 pieces.

### Record Retention

The supplier shall have a written procedure for the documentation and retention of quality and product records for products supplied to Suez. The record retention period shall be a minimum of ten (10) years unless otherwise specified by Suez. Records shall include, but are not limited to, product quality or inspection and test plans and results, material specifications, qualification documentation and certificates of conformance. Specific component record requirements may be specified in Suez purchase orders, contracts or specification. It is the responsibility of the supplier to determine the appropriate storage means to meet the retention requirement and allow for timely retrieval of records.

## Supplier Approval

In order to receive a Suez production purchase order, a supplier must be approved per Suez Global Sourcing Quality Management System procedures.

Criteria for approval could include, but is not limited to, the following:

* properly executed Mutual Non-Disclosure Agreement (MNDA),
* acknowledgement of compliance with Suez integrity guidelines,
* a documented quality system,
* technical capability,
* EHS compliance/employment practices,
* financial viability,
* customer service aptitude,
* and strategic value.

The supplier approval process is performed prior to a purchase order being issued to the supplier. Once the approval process has been successfully completed, a supplier code will be issued to the supplier.

## Supplier Qualification

### General Requirements

Once approved the supplier must be qualified for a specific process, raw material, part or commodity family. Through the qualification process, the supplier demonstrates ability to repeatedly provide high quality parts in accordance with requirements and expectations of the Suez business purchasing the material. A qualification program is defined and documented by a Suez qualification team. The supplier is required to perform the qualification using the documented qualification program plan as communicated by the SQE. Once the qualification program has been completed to the satisfaction of the qualification team and the supplier has received the signed Supplier Qualification Approval form the supplier is then considered qualified to provide the specific process, part or commodity family.

For some products, where qualifications are executed per commodity families, drawing numbers may change from project to project, with little to no variation between drawing numbers. For these products, the qualification team shall decide if a new qualification is required for new drawing numbers

Qualification is required in, but not limited to, the following cases:

1. A new or existing supplier is manufacturing production material for the first time for Suez.
2. A design or process change has occurred at the supplier or at Suez, significantly changing the processing, form or function of the product.
3. An existing supplier or critical sub-tier supplier changes its manufacturing location.

Note: Reassessment of supplier approval will also be required when a manufacturing location is changed.

1. Quality issues arise at the supplier, putting current qualifications in doubt.
2. As required by Suez.

### Sub-tier Suppliers

If a supplier chooses to outsource a process, the supplier is fully responsible for qualifying all sub-tier suppliers to Suez requirements and notifying Suez of this qualification. Suez reserves the right to 1) review the supplier’s process for selection, qualification, and surveillance of sub-tier suppliers, 2) to approve, or disapprove, sub-tier supplier qualifications, 3) audit and monitor the sub-tier supplier’s processes and facilities when deemed necessary. This requirement also applies if the supplier is a sales representative or distributor that procures from sub-tier suppliers for manufactured parts or assemblies.

The planned use and manufacturing location of any sub-tier supplier must be clearly identified in the MPP during the qualification process. Upon successful completion and qualification of the primary supplier, the sub-tier supplier identified as part of that qualification must not be changed without prior approval from Suez. This requirement shall also be applicable to Suez directed sub-tier suppliers.

### First Piece Qualification (FPQ)

When required as part of a qualification program, an FPQ must be performed. This requires the supplier to manufacture a first (or in some cases only) piece of the item as outlined in the applicable Suez specifications and/or as defined by the appropriate Sourcing Quality and Engineering personnel. First Piece Qualification documentation must be submitted to Suez for review and approval.

Upon successful completion of the FPQ, a supplier may request release of the material for shipment to Suez. Confirmation of this release must be documented and placed with the item to be shipped, as well as retained for the supplier’s record. If the qualification program has been successfully completed, the supplier will receive an approved qualification form from the SQE. If the qualification program has not been completed, this release must be received from the SQE in the form of an approved SDR or other business specific document for accepting material noncompliant with Suez specifications and/or procedures prior to shipment. Materials shipped without written authorization from the SQE will be considered non-conforming material and may be shipped back to the supplier at their expense or incur additional labor back charges to the supplier.

### Critical-to-Quality Characteristics (CTQs) and Reporting Process Capability

Suppliers must provide process capability for CTQs identified when requested by the qualification team.

### Process Risk Assessment

When required by the qualification program, the supplier must perform a risk assessment of its manufacturing and quality assurance processes to evaluate the effectiveness of these processes to consistently produce the component or provide the qualified service. The appropriate cross-functional supplier personnel must perform this risk assessment with the assistance and participation by the Suez Qualification team members as necessary. One format for this assessment is a Failure Modes & Effects Analysis (FMEA).

### Detailed Drawing, Manufacturing and Producibility Review

Prior to part manufacturing, the supplier may be required to participate in a detailed drawing review with the Suez Qualification Team to ensure suppliers’ thorough understanding of drawing requirements and specifications during the qualification process. For Supplier Designed, non-Build to Print (Functional Spec/Sourcing Controlled), the supplier may be required to participate in an Engineering Capabilities Assessment and Supplier Design Reviews with the Suez Qualification Team

### Manufacturing Process Plan (MPP)

An **MPP** must, at a minimum contain the following information:

1. A list of all applicable Suez specifications, ordering sheets, outline drawings, and special process specifications/instructions along with the latest revision letter/number.
2. List of Weld Procedure Specifications (WPS) and Procedure Qualification Records (PQR) used in the manufacture of the part, when applicable.

NOTE: Welders and procedures must be qualified in accordance with ASME Section IX or similar governing agency specified on purchase order from Suez business.

1. Identification of all component parts and sources.
2. Identification of all critical sub-tier suppliers. Critical sub-tiers include but are not limited to Raw Material and any special process supplier.
3. A sequence plan of all major and critical manufacturing and inspection steps with appropriate sign-off documentation. Supplier proprietary processes may be handled with the SQE directly.
4. The manufacturing location

Once the MPP is approved, the MPP shall be considered part of the purchase order requirements even if not explicitly referenced on the purchase order.

### Product Quality Plan (PQP)

The **PQP** must, at a minimum, contain the following information:

1. Clear identification of the item, component, or system to which the PQP is applicable
2. Listing of all technical documents that govern the inspection or test activity (i.e. supplier documents, Suez specifications, industry codes/standards).
3. Identification of the test or inspection criteria in an itemized listing. Each line item must identify what is to be inspected (to the characteristic level), how it is to be inspected, what frequency it is to be inspected, when the inspection or test is to be performed (in the sense of the manufacturing process), who is to perform the inspection (e.g., Operator, Inspector, etc.), and the acceptance criteria. Each item must include provision for sign off by the party performing the inspection.
4. Identification of Project specific inspections and tests.
5. Completion of each inspection and test will be accompanied by appropriate sign-off documentation. Each inspection and test must be signed-off during the execution of the PQP.
6. Clear definition of Suez and customer involvement in the inspection and test activities. This includes but is not limited to in–process inspections, customer witness and hold points, document reviews and Suez and/or customer release inspections.
7. Identification and verification of CTQs and inspection methods. CTQs can be identified by purchase orders, specifications, drawings, or by the appropriate SQE.
8. Detailed planning of packaging and preservation for shipment and storage.

The PQP or ITP maybe be included as part of the MPP or submitted as a separate document. In all cases, the PQP must be approved by the SQE.

### Specific Item Type Qualification Requirements

#### Chemicals Qualification Requirements

For chemical materials, the following must be submitted:

* 1. Proposed QC specification (i.e. Manufacturing QC specifications and/or technical data sheet including material ‘grade’ and regulatory approval status such as potable or biocide registrations)
  2. Material Safety Data Sheets (MSDS)
  3. Product samples (1 kg or 1000 ml representing three lots)
  4. Certificate of Analysis (example format or actual COA) if available
  5. Evidence of historical data such as SPC charts or other supporting QC data
  6. Supplier TRS Regulatory Compliance Form

#### Standard Flow Components Qualification Requirements

An MPP and PQP must be submitted to Suez for an SQE review and approval prior to manufacture of the product. If required by the qualification team, the supplier must not change the MPP after completion of the qualification process without notifying and obtaining the approval of SQE. A Supplier Compliance Plan may be required.

#### Project Specific Components Qualification Requirements

Project specific inspection and test requirements will be presented by the SQE and/or Engineering representative. Supplier will submit their detailed ITP incorporating the following for SQE approval prior to manufacture of the product:

* Manufacturing Milestones of the sourced component, assembly/system
* Suez and client inspection and/or surveillance visits of all activities
* Applicable procedures, documents and specifications that explain the acceptance criteria of the inspection or test activity.
* TRS Supplier Compliance plan if required

### Qualification Documentation

Qualification records, MPPs, material certifications, and related documentation records may be subject to periodic review by Suez. Suez also reserves the right to request submittal of these records at any time.

### Qualification Approval Form

Upon successful completion of the qualification program and receipt of the Supplier Qualification Approval Form, the supplier is released to fulfill subsequent purchase orders received from Suez. This qualification form indicates that, at the time of qualification and based on data provided by the supplier, the manufacturing process used to produce the component(s) or perform a process was capable of complying with Suez drawing and specification requirements. Qualification approval does not relieve the supplier of the full responsibility, on subsequent orders, to assure the manufacturing processes remain in control and the product or process supplied meets all drawing and specification requirements, unless formal, written approval for a deviation is obtained from Suez via an SDR process.

## Suez Supplier Policies and Requirements

### Source Inspection and Test Witness Requirements

4.5.2.1 Suez and/or its customer may elect to inspect parts, and/or witness subassemblies at the supplier’s facility during processing, testing, or at final inspection. All source inspection and test witness requirements are to be identified and coordinated through the Suez SQE, Quality Assurance, quality representative or other designated representative.

4.5.2.2 It will be the responsibility of the supplier to notify Suez in advance, when material will be ready for inspection. The timing of this advance notification will be at minimum 20 days (unless otherwise approved by Suez) prior to any scheduled test/inspection/witness points.

4.5.2.3 Suez and/or customer acceptance of product does not relieve the supplier of its obligations to supply components that meet drawing and purchase order requirements.

### Supplier Deviation Request (SDR) Procedure

4.5.3.1 The supplier must submit an electronic Supplier Deviation Request (eSDR) to the SQE or business specific designate, for material which is identified as non-conforming. In the event that the electronic system is not available, supplier may, forward the SDR to the business specific designate.

4.5.3.2 The supplier is to promptly notify the Suez SQE of any quality related issues that develop with regard to Suez purchase orders.

4.5.3.3 The supplier shall not presume approval of the SDR until a dispositioned copy is made available to the supplier.

4.5.3.4 SDRs are “one-time” exceptions to Suez requirements. Unless the SDR involves a drawing change, Suez, expects the non-conformance(s) to be eliminated on subsequent deliveries.

SDRs should be submitted by the primary supplier (the Seller on the Purchase Order). Any deviations (e.g. drawing changes, material substitutions, etc.) related to a sub-tier supplier’s scope should be submitted through the primary supplier.

An SDR can also be submitted by the supplier for clarification requests on Suez drawings or specifications on submit improvement suggestions on quality, delivery and/or cost.

### Corrective Action Procedure and Requirements

All suppliers are required to identify cause and actions for containment, correction, and prevention for any nonconformance to prevent recurrence. When a nonconformance Notice (NCN) at a Suez location or factory, a Field Service Notice (FSN) at a customer site, or other equivalent non-conforming material control document is initiated, the supplier may receive a copy of the document along with a formal request for cause and containment action. All reports are tracked by Suez and response is required. Actions remaining open longer than the specified period may result in disqualification of the supplier.

A cause and corrective action response must include the following:

* 1. Identified root cause(s) of the non-conformance.
  2. Short & Long-Term Action Plans

a. Actions to identify, locate, and contain any components or materials that have shipped or are in process that may have similar nonconformances (Containment). If such material is already at a Suez or a customer site location, contact the Sourcing Quality Engineer immediately.

1. Corrective actions to address the existing nonconformances. These are actions intended to minimize the impact of the nonconformances on the customer in terms of quality and delivery.
2. Preventive actions designed to eliminate the root cause(s) and prevent future recurrence of the non-conformance. The supplier must provide and maintain documented evidence that the actions have been accomplished.
   1. Owner and completion dates of the actions’ implementation.

If the nonconformance is incorrectly charged to a supplier, this should be denoted on the corrective action request and sent to both the Sourcing representative and the SQE.

### Packaging and Preservation Requirements

Preservation and Packaging must be in accordance with Suez drawings and specifications 206-009 unless otherwise specified in the purchase order. It is the supplier’s responsibility to assure that the shipment will arrive at destination in an undamaged condition and be ready for the part’s intended use. The “ready for use” requirement must include provisions for a reasonable period of storage at destination prior to use.

### Supplier Manufacturing Location Change Requirements

All suppliers are required to notify their respective Sourcing representatives and SQEs in the event the supplier’s manufacturing location changes from that specified on the approved MPP for a given item. Notification must take place prior to manufacturing product and must be in writing. Suez reserves the right to reject any and all products not meeting the location requirements stated on the qualification form and/or approved MPP. The supplier will be responsible for shipping and handling charges that will be applied to any products rejected for this criterion. This requirement also applies to sub-tier supplier relocations.

### Process Capability

When required, the supplier must measure and record data for all CTQ / CTPs identified on the drawings and specifications and by the SQE. The supplier must regularly analyze the CTQ data for process capability and supply periodic reports to the SQE. Under the direction of the SQE, the supplier may be requested to execute improvement projects based on the process capability analysis.

# Revision History

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Rev | Revision Description | Change Category | Date | Revised by | DCO |
| Rev  Letter | Brief description – purpose of change and main effects  Add rows as needed | Minor, Significant or Major | Effective Date | Who Revised | DCO# with embedded link |
| C | Manually rebranded to SUEZ. | Minor | 18-Sept-2018 | SR | N/A |
|  |  |  |  |  |  |