

## QUALITY MANUAL

ACCORDING TO API SPECIFICATION Q1-10TH EDITION  
AND ISO 9001:2015

PROCEDURE NO.

QM-01

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16

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PREPARE BY: \_\_\_\_\_



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QUALITY ASSURANCE MANAGER

REVIEWED AND APPROVED BY: \_\_\_\_\_



(MR. WICHIT RATTANASIRIVILAI)  
CHIEF EXECUTIVE OFFICER



Controlled



Un-controlled

**SAHATHAI**  
S T E E L P I P E

<b>SAHATHAI STEEL PIPE PCL.,</b>	<b>Revision No.: 16</b>	<b>Code No.: QM-01</b>
<b>QUALITY MANUAL</b>	<b>TITLE: API SPECIFICATION Q1-10TH EDITION AND ISO 9001:2015.</b>	

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REVISION HISTORY

Page	Revision No.	Revision Date	Revised Content
1-28/28	16	1 September 2024	- API Q1 9 <sup>th</sup> edition was updated to 10 <sup>th</sup> edition.

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## PREFACE

### General

The quality manual was written and updated based on ISO9001:2015 and API Specification Q1-10th:2023, and also connected with the actual situation and character of the company,

The quality manual is applicable for all kinds of industrial pipes and tubular goods including API 5L line-pipe producing by the company, also applicable for control process, promoting the quality activities, meeting customer's requirements and ensuring the satisfaction of customer.

### Introduction

Introduced steel pipe manufacture into Thailand Sahathai Steel Pipe Public Co., Ltd. (STS) was one of the leader steel pipe manufacturing in Thailand. The company was inaugurated on April 1st, 1968. The company was founded with the objective of producing quality steel pipe to be supplied as raw material to the furniture industry and to meet other market demands. We have dedicated over 4 decades to meeting the ever-growing demand for steel pipe, products that meet industry demands and earn the confidence of users.

Sahathai Steel Pipe has the second factory as below.

- 78 Moo 3 Poochaosamingprai Road, Bangyapraek, Phrapradaeng, Samuthprakarn, 10130.
- 224 Moo 5 Lamsai, Wangnoi, Phanakhonsriyutthaya, 13170

**Sahathai Steel Pipe is committed to develop high-quality products to achieve a high level of customer satisfaction and to remain at the forefront of the industry.**

Sahathai Steel Pipe has made the " Strategic Business Decision" to develop and implement an effective Quality Management Systems (QMS) across all areas of the Company. The implementation of the QMS is intended to improve and sustain the overall performance of our business, products and services.

The QMS Manual is considered the normative basis of reference to the International Standard and shall be used internally to provide and overview of ISO 9001:2015 and API Q1-10th requirements and how they apply at STS.

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## 0.1 Quality Management Principles

This International Standard is based on the quality management principles described in ISO 9000:2015. The descriptions include a statement of each principle, a rationale of why the principle is important for the organization, some examples of benefits associated with the principle and examples of typical actions to improve the organization's performance when applying the principle.

The quality management principles are:

- customer focus;
- leadership;
- engagement of people;
- process approach;
- improvement;
- evidence-based decision making;
- relationship management.

## 0.2 Scope of the Quality Management System

Scope of products: ERW Line Pipe, Industrial Tubular and Structural Pipes.

Exclusion of QMS: 5.4 Design (ISO 9001:2015, 8.3) 5.6.7 Externally Owned Property (ISO 9001:2015,8.5.3)

Reason of exclusion: The excluded items are not necessary for Sahathai Steel Pipe' QMS.

Special process: API 5L: electric resistance seam welding, weld seam heat treatment, Sizing,  
API Q1 10<sup>th</sup> edition: NDE, Welding and heat treating.

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### QUALITY POLICY

Sahathai Steel Pipe Public Company Limited is a steel pipe manufacturer with intention to be the world leading steel pipe maker and most satisfied our customers need. We bring quality management system ISO 9001:2015 and API Specification Q1-10<sup>th</sup> edition adapted into our mill. Our company, therefore, announce quality policies for every staff and operators to comply accordingly.

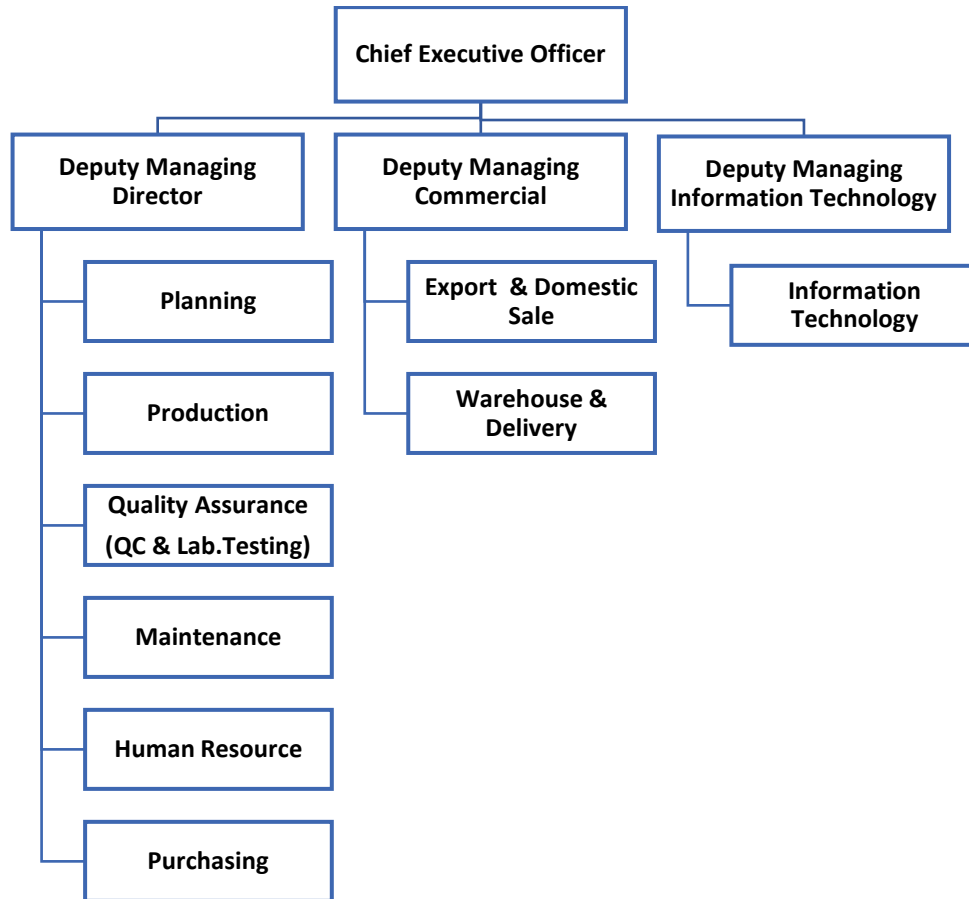
1. Sustainable development: We will continuously develop and improve our quality management system. By recognizing the needs and expectations of the interested parties to make the quality management most effective.
2. Product quality: We will promote and drive effective working processes both humans and working processes in order to produce and supply most quality products.
3. Delivery: Our goal is to achieve our customers trust not only the quality of products but also the commitment to ship products on time as well.
4. Customer satisfaction: We will support our customers and partners growth to enhance the level the level of satisfaction.

Approved by:

Mr Wichit Rattanasirivilai  
Chief Executive Officer  
1 September 2024

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## 2.0 Administration Organization



## 3.0 Terms and Definitions

For the purpose of this document, the terms and definitions provided in ISO 9000:2015 and API Specification Q1-10th:2023



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## 4.0 Quality Management System Requirements

### 4.1 Quality Management System

#### 4.1.1 General [ISO 9001:2015, 4.4.1]

Sahathai Steel Pipe has [plan](#), established, documented, implemented and maintained at all times our Quality Management System (QMS) [for all products provided within the scope defined in this document](#). The QMS is maintained and continually improved through the use of the Quality Policy, Quality Objective, Audit Results, Analysis of Data, Corrective and Preventive Action and Management Review in accordance with the requirement of ISO 9001:2015 and API Specification Q1-10th:2023.

#### 4.1.2 Quality Policy [ISO 9001:2015, 5.2]

Chief Executive Officer has initiated, [approved](#) and communicated the Quality Policy throughout the organization [including interested party, such as customers, suppliers, regulatory authorities](#). The Quality policy will be given to all employees at the start of their employment to ensure their awareness of their obligations to meet company objectives. The quality policy will be reviewed at Management Review Meetings to ensure continued focus on company objectives and to check the continued suitability of the policy to current company activity. The quality objectives built into the quality policy will be monitored by performance analysis in the appropriate areas.

#### 4.1.3 Quality Objectives [ISO 9001:2015, 6.2.1]

Each function managers, with the approval of Chief Executive Office, shall ensure that quality objectives, including those needed to meet requirements for the realization of the product, are established at relevant functions and levels within our company. The quality objectives [that be approved by Chief Executive Office](#) shall be measurable [communicated](#) and consistent with the quality policy. And monitored and communicated, and updated as appropriate.

Quality Performance Objectives are measurable targets for improving operational performance to ensure process conformity and customer satisfaction.

#### Related Documents:

Quality Objectives

### 4.1.4 Planning the Quality Management System

#### 4.1.4.1 General [ISO 9001:2015, 4.3]

[Sahathai Steel Pipe has performed planning the quality management system as following;](#)

- defined the scope of the quality management system, that identifies product(s) covered and includes any limitations and exclusions (see 0.2)
- identified external and internal issues relevant to the organization's long-term or overall objectives and goals

#### *[ISO 9001:2015, 4.1 Understanding the Organization and Its Context]*

determined relevant external and internal issues and items that may become relevant to the company's purpose and strategic direction, and may affect our ability to achieve the intended results of the quality management system.

- determine relevant interested parties and their requirements for the quality management;

#### *[ISO 9001:2015, 4.2 Understanding Requirements and Expectations of Interested Parties]*

the effect or potential on our organizations ability to consistently provide products and services that meet our customer and applicable statutory and regulatory requirements, Sahathai Steel Pipe has determined the following:

- the interested parties relevant to the quality management system;
- the requirements of the identified interested parties relevant to the quality management system;

Sahathai Steel Pipe is committed to continually monitoring, reviewing and analyzing information and relevant requirements of the interested parties to assure their requirements are effectively managed in the QMS.

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- d) determined the sequence and interaction between the processes of the quality management system;
- e) determined and manage the criteria and methods needed for the effective operation and control of quality management system processes;  
*[ISO 9001:2015, 4.4 Quality Management System and its Process]*  
The utilizes Quality System Procedure to provide our employees and external provider (Suppliers), with detailed "How To" instructions and requirements. The documents support the achievement of quality compliance for each of the process steps. We retain Quality System Forms which provide documented information substantiating the process inputs and outputs have been accomplished as planned.
- f) identified quality objectives, including actions, resources, responsibilities, timeframe, and how results are monitored and evaluated;  
*[ISO 9001:2015, 6.2.2 Planning how to achieve quality objectives]*  
Sahathai Steel Pipe shall determine:
- what will be done;
  - how the results will be
  - who will be responsible;
  - when it will be completed;
  - how the results will be evaluated.
- g) addressed identified risks (see 5.3);
- h) address identified opportunities for improvement (see 6.4); and
- i) identified key personnel.

*[ISO 9001:2015, 6.1 Action to Address Risks and Opportunities]*

Sahathai Steel pipe shall consider the issues referred to in 4.1.6 and the requirement referred to in 4.1.7 and determine the risks and opportunities that need to be addressed to:

- give assurance that the quality management system can achieve its intended result(s);
- enhance desirable effects;
- prevent, or reduce, undesired effects;
- achieve improvement.

Sahathai Steel Pipe shall plan:

- actions to address these risks and opportunities
- how to:  
integrate and implement the actions into its quality management system processes  
evaluate the effectiveness of these actions.

#### Related Document

QPMQS-06 The Quality Management System.

#### **4.1.4.2 Exclusions**

The requirement related to Design and Externally Owned Property in API Q1 10<sup>th</sup> and ISO 9001:2015 were excluded.

### **4.1.5 Communication *[ISO 9001:2015, 7.4]***

#### **4.1.5.1 Internal**

Sahathai Steel Pipe has established internal communication process at relevant levels and functions within our company such as management review, function manager meeting, internal email, morning talk, announce etc. to ensure that:

- a) importance of satisfying customer, legal and other applicable requirements are communicated.
- b) results of analysis of data (improvement) are communicated (see 6.3)

#### **4.1.5.2 External**

Sahathai Steel Pipe has established and implemented a process for communicating with external company, including customers.

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The communication process shall address:

- a) execution of inquiries, contracts, or order handling and amendments (see 5.1);
- b) [determining and understanding requirements throughout contract execution and product realization \(see 5.1.2\);](#)
- c) [provision of product information, including nonconformities \(see 5.9.3 and 5.9.4\);](#)
- d) feedback and customer complaints (see 6.2.1);
- e) [communication of quality plans including subsequent changes \(see 5.6.2\); and](#)
- f) [communicating changes and associated risks \(see 5.10.3\).](#)

#### Related Document

QPMQS-06 The Quality Management System

## 4.2 Management Responsibility

### 4.2.1 General

Chief Executive Officer has [demonstrated leadership and commitment](#) to the establishment, implementation, maintenance, and improvement of the quality management system by:

- a) [approving establishment of quality objectives \(see 4.1.3\) at relevant functions and levels within the organization;](#)
- b) [providing resources needed for the quality management system;](#)
- c) [engaging and supporting personnel in the implementation and maintenance of the quality management system; and](#)
- d) [assigning responsibilities and authorities for ensuring the processes achieve intended outputs](#)

#### ***[ISO 9001:2015, 5.1.1 Leadership and Commitment]***

- a) taking accountability for the effectiveness of the quality management system;
- b) ensuring that the quality policy and quality objectives are established for the quality management system and are compatible with the context and strategic direction of the organization;
- c) ensuring the integration of the quality management system requirements into the organization's;
- d) promoting the use of the process approach;
- e) ensuring that the resources needed for the quality management system are available;
- f) communicating the importance of effective quality management and of conforming to the quality management system requirements;
- g) ensuring that the quality management system achieves its intended results;
- h) engaging, directing and supporting persons to contribute to the effectiveness of the quality management system;
- i) promoting improvement;
- j) supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.

#### ***[ISO 9001:2015, 5.1.2 Customer Focus]***

Chief Executive Officer ensure that all customer requirements and expectations are clearly defined, understood and achieved at all levels of the organization. Sahthai Steel Pipe are committed to achieving customer satisfaction and will accomplish this by understanding and mitigating risks and opportunities that may affect the conformity of products and services and to assure Statutory and Regulatory requirements are identified and achieved according to the applicable Clauses of the quality management system manual.

### 4.2.2 Responsibility and Authority

Responsibilities, authorities, and accountabilities of personnel within the scope of company's quality management system shall be defined, documented, and communicated throughout our company.

### 4.2.3 Management Representative ***[ISO 9001:2015, 5.3]***

Chief Executive Officer shall appoint QA Manager as the management representative, shall have responsibility and authority that includes:

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- a) ensuring that the quality management system conforms to the requirements of API Q1-10th, 2023 and ISO 9001:2015;
- b) ensuring that processes needed for the quality management system are established, implemented and maintained;
- c) reporting to top management on the performance of the quality management system and any need for improvement;
- d) ensuring initiation of action(s) to address nonconformities (see 6.4.2); and
- e) ensuring the promotion of awareness of customer requirements throughout the company
- f) ensuring that the processes are delivering their intended outputs;
- g) ensuring that the integrity of the quality management system is maintained when changes to the quality management system are planned and implemented.

#### Related Document

QPMQS-06 The Quality Management System

### 4.3 Organization Capability

#### 4.3.1 Resources and Knowledge

##### 4.3.1.1 Resources [ISO 9001:2015, 7.1]

Sahathai Steel Pipe is fully committed to providing adequate resources required for the establishment, implementation, maintenance and continual improvement the effectiveness of the quality management system. Our committed resources include competent employees, state of the industry equipment, well maintained work environment. The process for determining and communicating resource requirements is an integral part of our management review process.

##### 4.3.1.2 Knowledge [ISO 9001:2015, 7.1.6]

Sahathai Steel Pipe considers the specific knowledge necessary for each operation and considers this as an important resource to ensure our people and processes are consistent and will achieve conformity of the product and services provided by the Company. Specific organizational knowledge is defined, maintained and available to the extent necessary within appropriate procedures.

When addressing changing needs and trends, the organization shall consider its current knowledge and determine how to acquire or access any necessary additional knowledge and required updates.

#### 4.3.2 Human Resources

##### 4.3.2.1 Personnel Competence [ISO 9001:2015, 7.2]

Sahathai Steel Pipe shall determine and provide the persons necessary for the effective implementation of its quality management system and for the operation and control its processes. Personnel assigned to perform specific tasks, operations and processes are qualified on the basis of appropriate education, experience or training.

Sahathai Steel Pipe shall maintain a documented procedure for defining personnel competency to achieve the necessary competency of personnel whose responsibilities fall within the scope of the quality management system.

The procedure shall address:

- a) how required competencies are identified and documented;
- b) how required education, training, experience, or other actions to achieve competence are identified;
- c) evaluation of effectiveness of actions taken to acquire competencies;
- d) criteria and methods for assessing, maintaining and, re-assessing competencies; and
- e) personnel responsible for assessing competency.

Records of personnel competence shall be maintained.

##### 4.3.2.2 Training [ISO 9001:2015, 7.3]

Sahathai Steel Pipe shall develop and maintain a procedure for training that shall address;

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- a) identification of the content and frequency of training required;
- b) provision of quality management system training;
- c) provision of job training including personnel awareness of the relevance and importance of their activities; and how they contribute to the achievement of our company's quality objectives;
- d) provision of customer-specified training and/or customer-provided training, when required;
- e) evaluation of effectiveness of training; and
- f) [identification of required training records](#).

Records of personnel training shall be maintained.

#### Related Document

QMPMA-01 Recruitment

QMPMA-02 Training

### **4.3.3 Work Environment [ISO 9001:2015, 7.1.3, 7.1.4]**

Sahathai Steel Pipe has determined, provided, managed and maintain the work environment needed to [achieve conformity of product](#).

Work environment shall includes:

- a) buildings, workspace, and associated utilities;
- b) process equipment (both hardware and software) (see 5.6.10);
- c) supporting services (e.g. transport, communication, information systems); and
- d) conditions under which work is performed such as physical, environmental, or other factors.

#### Related Document

QPMQS-06 The Quality Management System

QPMIT-01 Control of IT System

## **4.4 Documentation Information Requirements [ISO 9001:2015, 7.5]**

### **4.4.1 General**

The quality management system documentation shall include:

- a) [the scope of the quality management system that identifies product\(s\) covered and includes justification for any exclusions; \(see 0.2 Scope of the Quality Management System\)](#)
- b) statements of quality policy and quality objectives;
- c) identification of legal and other applicable requirements to which the company claims compliance that are needed to achieve product conformity;
- d) identification of how the quality management system addresses each requirement of this specification;
- e) the processes requiring validation of our company are sizing, HFW seam welding, weld seam heat treatment, eddy current testing and hydrostatic test (see 5.6.4); and
- f) [procedures, documents, and records](#) necessary for the planning, operation, and control of its processes and conformance with specified requirements.

### **4.4.2 Procedure**

All procedures referenced within ISO 9001 and API Q1 shall be established, documented, implemented, and maintained for continued suitability.

Annex 4 List Procedure Manual

### **4.4.3 Control of Internal Documents**

Sahathai Steel Pipe shall maintain a documented procedure for the identification, distribution, and control of [internal documents](#) required by the quality management system and API Q1 10<sup>th</sup> edition, including revisions, translations, and updates.

The procedure shall address:

- a) responsibilities for approval and re-approval;
- b) review and approval for adequacy prior to issue and use;

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- c) reviews for continued suitability and revision(s) as necessary;
- d) identification of changes and current revision status;
- e) legibility and identification of documents; and
- f) availability where the activity is being performed.

Obsolete documents shall be removed from all points of issue or use, or otherwise identified to prevent unintended use if they are retained for any purpose

Procedures, work instructions, and forms required by the quality management system shall be controlled.

A master control list of documents showing the current status will be maintained.

#### Related Document

QPMQS-03 Control of Documents and Records

#### **4.4.4 Control and Use of External Documents**

Sahathai Steel Pipe shall maintain a documented procedure for control of documents of external origin required for product realization and used by our company, including API or other external specifications.

The procedure shall address:

- a) identification and documentation of required documents;
- b) access and distribution of required documents, including relevant versions;
- c) integration of requirements into product realization and any other affected processes;
- d) process for identifying when changes to required documents have occurred, including addenda, errata, and updates;
- e) [assessment of impact of changes; and](#)
- f) [integration of applicable changes.](#)

#### Related Document

QPMQS-03 Control of Documents and Records

#### **4.4.5 Control of Records**

Records, including those originating from outsourced activities (see 5.5.1.7), shall be established and controlled to provide evidence of conformity to requirements and company's quality management system.

Sahathai Steel Pipe shall maintain a documented procedure to identify the controls and responsibilities for records.

The procedure shall address:

- a) identification;
- b) collection;
- c) legibility;
- d) [collection;](#)
- e) storage;
- f) protection from unintended alteration, damage, or loss;
- g) retrieval;
- h) retention time; and
- i) disposition.

[Records shall be retained for a minimum of ten years](#) or as required by customer, legal, and other applicable requirements, whichever is longer.

#### Related Document

QPMQS-03 Control of Documents and Records

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## 5.0 Product Realization

### 5.1 Contract Review [ISO 9001:2015, 8.2]

#### 5.1.1 General

Sahathai Steel Pipe shall maintain a documented procedure for the review of requirements relate to the [provision of products](#).

The procedure shall address;

- a) determination of requirements;
- b) review of requirements; and;
- c) changes to requirements.

#### Related Document

QPMEX-01 Contract Review and Export Sale Process

QPMDS-01 Domestic Sale Process

#### 5.1.2 Determination of Requirements

Sahathai Steel Pipe shall determine:

- a) requirements specified by the customer;
- b) legal and other applicable requirements; and
- c) requirements not stated by the customer but considered necessary by Saha Thai Steel Pipe for the provision of the product.

Where the customer provides no documented statement of the requirements, the customer confirmed by the Saha Thai Steel Pipe and records maintained.

#### 5.1.3 Review of Requirements

Sahathai Steel Pipe shall review the requirements related to provision of products. This review shall be conducted prior to our company's commitment to deliver product to the customer and shall confirm that:

- a) requirements are identified and documented;
- b) requirements differing from those previously identified are resolved; and
- c) Sahathai Steel Pipe has the capability to meet the documented requirements.

Where contract requirements are changed, Sahathai Steel Pipe shall amend that relevant documents and make relevant personnel aware of the changed requirements.

Records of the results of the review, including resulting actions, shall be maintained.

### 5.2 Planning [ISO 9001:2015, 8.1]

Sahathai Steel Pipe shall identify and plan the processes and documents needed for product realization. In planning, Sahathai Steel Pipe shall address the following:

- a) required resources and work environment management (see 4.3);
- b) product and customer-specified requirements (see 5.1)
- c) legal and other applicable requirements;
- d) design requirements (see 5.4);
- e) contingency planning (see 5.3.3);
- f) required verification, validation, monitoring, measurement, inspection, and test activities specific to the product and the criteria for acceptance;
- g) management of change (MOC) (see 5.10); and
- h) records needed to provide evidence that product realization conforms to requirements (see 4.5).

The output of planning shall be documented and updated as changes occur. The plans shall be maintained in a structure suitable for Sahathai Steel Pipe's method of operations.

#### Related Document

QPMPN-01 Production Plan



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### 5.3 Risk Management

#### 5.3.1 General

Sahathai Steel Pipe shall maintain a documented procedure to identify and control risk associate with [product delivery and product quality](#).

The procedure shall address:

- risk identification and assessment techniques;
- risk assessment tools and their application;
- [criteria to determine risk severity including potential consequences of product failure](#);
- risk mitigation actions;
- assessment of remaining risk; and
- [contingency planning, including when a contingency plan is required based on assessment of remaining risks](#).

Note 1 Risk assessment can include consideration of severity, probability of occurrence, and detectability.

Note 2 Risk assessment can be an activity associated with corrective action.

#### Related Document

QPMQS-02 Risk Assessment and Contingency.

#### 5.3.2 Risk Assessment

##### 5.3.2.1 Product Delivery

Risk assessment associated with product delivery shall include:

- facility/equipment availability and maintenance; and
- supplier delivery performance and material availability/supply.

##### 5.3.2.2 Product Quality

Risk assessment associated with product quality shall include:

- delivery of nonconforming product (see 5.9); and
- availability of competent personnel.

##### 5.3.2.3 Changes Impacting Product Quality

Sahathai Steel Pipe shall use the MOC process for any of the following that may negatively impact the quality of the product (see 5.10.2), risk assessment associated with product quality (see 5.3.2.2) shall be performed:

- changes in the organizational structure (see 4.2.2);
- changes in key personnel (see 4.1.4.1);
- changes in the supply chain of critical products, components, or activities (see 5.5.1.1);
- changes to the management system scope or procedures (see 4.4.1); and
- [changes to the organization's capability to perform the process\(es\) required for product realization](#)

#### 5.3.3 Contingency Planning

Contingency planning shall be based on assessed risks, the contingency plan shall include, at a minimum:

- actions required to reduce effects of disruptive incidents;
- identification and assignment of responsibilities and authorities; and
- internal and external communication controls (see 4.1.5).

The contingency plan(s) shall be documented, communicated to the relevant personnel, and updated as needed.

#### 5.3.4 Records

Records of risk assessment and management including actions taken shall be maintained.

### 5.4 Design

The design process is not necessary for pipe and tubular products. API product spec 5L specified the detailed requirements for materials, manufacturing, inspection and testing acceptance criteria, quality records, marking/storing/shipping.



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## 5.5 Purchasing

### 5.5.1 Purchasing Control [ISO 9001:2015, 8.4.1 and 8.4.2]

#### 5.5.1.1 Procedure

Sahathai Steel Pipe shall maintain a documented procedure for the purchase of products, components and /or activities required for product realization.

The procedure shall address:

- determination of critical products, components, and/or activities;
- initial evaluation and selection of suppliers;
- use of identified risk to determine initial assessment method of supplier's capability for critical purchases (see 5.5.1.2 c);
- type and extent of control applied to the supply chain for critical products, components, or activities; Note Section 5.5.1.7 contains additional requirements for outsourced activities.
- criteria, scope, frequency, and methods for re-evaluation of suppliers;
- identification of approved suppliers and scope of approval; and
- identification of customer specified suppliers and suppliers limited by proprietary, and/or legal requirements when 5.5.1.3 applies.

#### Related Document

QPMPC-01 Purchasing

QPMPC-02 Evaluation and Selection of Suppliers

#### 5.5.1.2 Initial Supplier Evaluation—Critical Purchases

For the purchase of critical products, components or activities, the initial evaluation of suppliers (not previously approved) by Sahathai Steel Pipe shall address the scope of supply, be site-specific for each supplier and include the following:

- verification of the supplier's quality management system implementation and conformity to the quality system requirements specified for suppliers;
- verification of the type and extent of control applied by the supplier, internally and to their supply chain, to meet Sahathai Steel Pipe's requirements [see 5.5.1.1, Item d)];
- assessment of the supplier's capability to meet company's specified requirements by one or more of the following based on identified risk [see 5.5.1.1, Item c)]:
  - performing an on-site assessment to verify that relevant product realization processes are being performed in accordance with process controls, and are effective in achieving conformity to requirements,
  - performing a remote assessment to verify that relevant product realization processes are being performed in accordance with process controls and are effective in achieving conformity to requirements,
  - performing inspection, testing, or verification of relevant characteristics of a received product.

For suppliers of critical purchases with high-risk severity [see 5.3.1 Item c)] identified by Sahathai Steel Pipe for which an on-site assessment per 5.5.1.2, Item c) 1) is not performed, the assessment of the supplier's capability [see 5.5.1.2, Item c)] shall include performing a remote assessment per 5.5.1.2, Item c) 2) and performing inspection, testing, or verification per 5.5.1.2, Item c) 3).

When performed, remote assessment [see 5.5.1.2, Item c) 2)] shall include verification of objective evidence through real-time audio/visual observation of required activities and documentation using information and communication technology.

#### 5.5.1.3 Initial Supplier Evaluation – Critical Purchases – Customer Specified, Proprietary, and/or Legal Limited

For the purchase of critical products, components, or activities where the supplier is specified by the customer or involves proprietary and/or legal requirements that limit application of 5.5.1.2, the initial evaluation shall include the following:

- verification of the supplier's quality management system implementation and conformity to quality system requirements specified for suppliers by Sahathai Steel Pipe and/or the customer's requirements; and
- identifying how the supplied product, component or activity conforms to specified requirements.

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The scope of approval for customer-specified suppliers shall be limited to the relevant customer contract when assessment per 5.5.1.2, Item c) has not been performed.

#### 5.5.1.4 Initial Supplier Evaluation—Noncritical Purchases

For purchase of noncritical products, components, or activities that impact product realization or the final product, the criteria for evaluation of suppliers by Sahathai Steel Pipe shall meet the requirements of 5.5.1.2 or satisfy one or more of the following:

- verification that the supplier's quality management system conforms to the quality system requirements specified for suppliers;
- assessment of the supplier to meet Sahathai Steel Pipe's purchasing requirements;
- assessment of the product or component upon delivery, or activity upon completion.

#### 5.5.1.5 Supplier Reevaluation

For previously approved suppliers of products, components, or activities Sahathai Steel Pipe shall determine the supplier reevaluation frequency based on identified risk (see 5.3) and supplier quality performance.

For the re-evaluation of suppliers of critical products, components or activities, the requirements of 5.5.1.2 shall apply.

For the re-evaluation of suppliers of critical products, components or activities for customer specified suppliers and suppliers limited by proprietary, and/or legal requirements, the requirements of 5.5.1.3 shall apply.

For the re-evaluation of suppliers of noncritical products, components, or activities that impact product realization or the final product, the requirements of 5.5.1.4 shall apply.

#### 5.5.1.6 Records

Records of the results of evaluations including objective evidence and any necessary actions arising from the evaluations shall be maintained (see 4.5).

Records of identification of approved suppliers, customer specified suppliers, and suppliers limited by proprietary, and/or legal requirements shall be maintained.

#### 5.5.1.7 Outsourcing

When Sahathai Steel Pipe chooses to outsource a process or activity of its quality management system, Sahathai Steel Pipe shall verify that the supplier satisfies the applicable requirements of the company's quality management system.

When Sahathai Steel Pipe chooses to outsource a product realization process or activity, Sahathai Steel Pipe shall maintain responsibility for product conformance to specified requirements, including applicable API or other external specifications.

Records of outsourced activities shall be maintained and shall include evidence of conformity.

### 5.5.2 Purchasing Information [ISO 9001:2015, 8.4.3]

Sahathai Steel Pipe shall ensure the adequacy of specified purchasing information prior to communication to the supplier. Purchasing information provided to the supplier shall be documented and describe the product, component, or activity to be purchased, including as applicable:

- acceptance criteria;
- requirements for approval of supplier's procedures, processes, and equipment;
- applicable version of specifications, drawings, process requirements, inspection instructions, traceability requirements, and other relevant technical data;
- requirements for qualification of supplier's personnel;
- quality management system requirements;
- requirements for approval of product release; and
- the intended verification requirements if company or customer performs verification (see 5.5.3) on the supplier's premises.

Note Applicable specifications may include or be derived from the customer, API product specifications, design output, and/or industry standards.

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### 5.5.3 Verification of Purchased Products, Components or Activities

#### 5.5.3.1 General

Sahathai Steel Pipe shall maintain a documented procedure defining the verification necessary for or other determining that purchased products, components, or activities meet specified purchase requirements.

#### 5.5.3.2 Critical Purchases

For critical products, components, or activities, the procedure for verification shall address:

- review of Sahathai Steel Pipe's required documentation from the supplier;
- verification that the applicable versions were used when specifications, drawings, process requirements, inspection instructions, traceability requirement, and other relevant technical data are specified per 5.5.2 c); and
- inspection, testing and/or verification requirements including methods, frequency, and responsible party. Sahathai Steel Pipe shall determine the methods, frequency, and responsible party based on identified risk (see 5.3) and supplier quality performance.

#### 5.5.3.3 Noncritical Purchases

Noncritical products, components or activities shall be verified in accordance with Sahathai Steel Pipe 's documented procedure.

#### 5.5.3.4 Records

Records of verification activities and evidence of conformity to specified requirements shall be maintained.

#### Related Document

QPMPC-01 Purchasing

### 5.6 Control of Product Realization [ISO 9001:2015, 8.5]

#### 5.6.1 General [ISO 9001:2015, 8.5.1]

Sahathai Steel Pipe shall maintain a documented procedure that describes controls associated with product realization. The procedure shall address the following:

- determination and implementation of manufacturing acceptance criteria (MAC);
- identification and documentation of processes critical to product realization;
- implementation of the quality plan, when applicable;
- conformance to design requirements and related changes, when applicable;
- the availability and use of product realization equipment and TMMDE (unless TMMDE has been excluded);
- the use of applicable work instructions;
- process control documents;
- maintenance of identification and traceability requirements throughout product realization;
- implementation of monitoring and measurement activities;
- implementation of product release, including applicable delivery and post-delivery activities; and
- review and control of product realization changes, required approvals, and records.

#### 5.6.2 Quality Plan

When required by contract, Sahthai Steel Pipe shall develop a product quality plan that specifies the processes of the quality management system (including the product realization processes) and the resources to be applied to a product.

The quality plan shall address each of the following as a minimum:

- description of the product or scope of quality plan;
- required processes and documentation, including required inspections, tests, and records, for conformance with requirements;
- identification of outsourced activities and reference to their control;
- identification of each procedure, specification, or other document referenced or used in each activity; and
- identification of the required hold, witness, monitor, and document review points.

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These product quality plans and any revisions to them shall be documented and approved by Saha Thai Steel Pipe and shall be communicated to the customer.

Related Document

Quality Plan.

### 5.6.3 Process Control Documents

Process controls shall be documented in routings, travelers, checklists, process sheets, or equivalent controls required by Sahathai Steel Pipe and shall include requirements for verifying conformance with applicable product quality plans, API product specifications, customer requirements, and/or other applicable product standards/codes. The process control documents shall include or reference instructions and acceptance criteria for processes, tests, inspections, and required customer's inspection hold or witness points.

### 5.6.4 Validation of Processes [ISO 9001:2015, 8.5.1 g)

Sahathai Steel shall validate processes for production where the resulting output cannot be verified by subsequent monitoring or measurement, and as a consequence, deficiencies become apparent only after the product is in use has been delivered. Validation shall demonstrate the ability of these processes to achieve planned results.

Sahathai Steel Pipe shall validate those processes identified by the applicable product specification as requiring validation. The processes requiring validation of our company are sizing, HFW seam welding, weld seam heat treatment, eddy current testing, hydrostatic test and painting.

Saha Thai Steel Pipe shall maintain a documented procedure to address methods for review approval of the processes including:

- required equipment;
- qualification of personnel;
- use of specific methods, including identified operating parameter;
- identification of acceptance criteria;
- requirements for records; and
- revalidation.

Related Document

QPMFM-01 Forming Process

QPMFM-02 Hydrostatic Testing

QPMFM-03 Heat Treatment

QPMQC-15 Automatic eddy current weld examination HFW

WIMPT-01 Using painting machine no.B & C (Only Samutprakarn facility)

WIMPT-02 Using painting machine no.1 (Only Samutprakarn facility)

### 5.6.5 Identification and Traceability [ISO 9001:2015, 8.5.2)

For Identification and Traceability, Sahathai Steel Pipe shall:

- establish and maintain identification throughout product realization, including applicable delivery and postdelivery activities;
- identify the traceability requirements as specified by the organization, the customer, and/or the applicable product specifications;
- maintain a documented procedure for identification and traceability while the product is under control of Sahathai Steel Pipe that addresses:
  - methods of identification;
  - when required, information needed for traceability;
  - requirements for maintenance and/or reapplication of identification and/or traceability; and
  - actions required to address loss of identification and/or traceability.

Records of traceability shall be maintained.

Related Document

QPMFN-01 Identification and Traceability.

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#### 5.6.6 Inspection/Test Status [ISO 9001:2015, 8.5.2]

Sahathai Steel Pipe shall maintain a documented procedure for the identification of inspection and/or test status throughout product realization process that indicates the conformity or nonconformity.

##### Related Document

QPMQC-05 Inspection and Testing Status.

#### 5.6.7 Externally Owned Property [ISO 9001:2015, 8.5.3]

The requirement related to Externally Owned Property in ISO 9001:2015 and API Q1 10th edition was excluded, because Sahathai Steel Pipe produces and supplies pipes and tubular products that are made of Hot rolled Coils purchased by Sahathai Steel Pipe.

#### 5.6.8 Preservation of Product [ISO 9001:2015, 8.5.4]

Sahathai Steel Pipe shall maintain a documented procedure describing the methods used to preserve the product and constituent parts throughout product realization and delivery. The procedure shall address the following:

- identification and traceability marking;
- storage, including the use of designated storage areas or stock rooms;
- assessment of condition at intervals specified by Sahathai Steel Pipe;
- transportation;
- handling
- packaging; and
- protection.

Records of the results of assessments shall be maintained.

##### Related Document

QPMWH-01 Handling, Storage and Preservation of Products.

QPMWH-02 Handling, Storage and Preservation of Raw Material.

#### 5.6.9 Inspection, Testing, and Verification [ISO 9001:2015, 8.5.1 c]

##### 5.6.9.1 General

Sahathai Steel shall maintain a documented procedure for inspection and testing to verification of product to confirm that requirement have been satisfied.

The procedure shall address:

- in-process inspection, testing, and/or verification methods and their application;
- final inspection, testing, and/or verification methods and their application; and
- record(s) creation and retention.

Note In-process and final inspection can be performed as one or more activities. Some product characteristics can require final inspection/verification during product realization.

##### Related Document

QPMQC-02 In-process inspection.

QPMQC-03 Final Inspection.

QPMQC-08 API 5L Pipe Marking

##### 5.6.9.2 In-process Inspection, Testing, and Verification

Sahathai Steel Pipe shall inspect, test and/or verify product at planned stages as required by quality plan, process control documents, and/or documented procedures. Evidence of conformity with the acceptance criteria shall be maintained.

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#### 5.6.9.3 Final Inspection, Testing, and Verification

Sahathai Steel Pipe shall perform all final inspection, testing and/or verification of product in accordance with the product quality plan, process control documents, and/or documented procedures to [determine](#) and document conformity of the finished product to the specified requirements.

[Unless performed by an automated system](#), personnel other than those who performed or directly supervised the product realization shall perform final acceptance inspection at planned stages of the product realization process.

#### 5.6.9.4 Records

Records of all required inspection, testing, verification, and final acceptance shall be maintained.

#### 5.6.10 Preventive Maintenance *[ISO 9001:2015, 7.1.3]*

Sahathai Steel Pipe shall maintain a documented procedure for preventive maintenance of equipment used for product realization. The procedure shall address requirements for:

- type of equipment to be maintained;
- frequency; and
- responsible personnel.

Records of preventive maintenance shall be maintained.

#### Related Document

QPMMT-01 Maintenance

#### 5.7 Product Release *[ISO 9001:2015, 8.6]*

Sahathai Steel Pipe shall maintain a documented procedure to ensure release of product to the customer shall not proceed until the planned arrangements have been satisfactorily completed, unless otherwise approved by a relevant authority and, where applicable, by the customer.

Records shall be maintained to enable identification of the individual releasing the product.

#### *[ISO 9001:2015, 8.5.5 Post-delivery activities]*

Sahathai Steel Pipe shall meet requirements for post-delivery activities associated with the products and service. In determining the extent of post-delivery activities that are required, Saha Thai Steel Pipe shall consider:

- statutory and regulatory requirements;
- the potential undesired consequences associated with its products and services;
- the nature, use and intended lifetime of its products and services;
- customer requirements;
- customer feedback.

#### Related Document

QPMEX-01 Contract Review and Export Sale Process

#### 5.8 Testing, Measuring, Monitoring, and Detection Equipment (TMMDE)

##### 5.8.1 General

Sahathai Steel Pipe shall determine the testing, measuring, monitoring, and detection requirements and the TMMDE needed to provide evidence of conformity to those requirements.

[TMMDE shall be calibrated at specified intervals. When the specified interval is based on the date of first use, the date of first use shall be documented.](#)

#### *[ISO 9001:2015, 7.1.5.1]*

Sahathai Steel Pipe shall determine and provide the resources needed to ensure valid and reliable results when monitoring or measuring is used to verify the conformity of products and services to requirements.

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Sahathai Steel Pipe shall ensure that the resources provided:

- are suitable for the specific type of monitoring and measurement activities being undertaken;
- are maintained to ensure their continuing fitness for their purpose.

Sahathai Steel Pipe shall determine the testing, monitoring, and measurement requirements and the associated equipment needed to provide evidence of conformity to those requirements.

#### 5.8.2 Procedure [ISO 9001:2015, 7.1.5.2]

Sahathai Steel Pipe shall maintain a documented for the control of TMMDE. procedure shall include requirements for the specific equipment type and shall address:

- unique identification;
- calibration statut
- traceability to international or national measurement standards; where no such standards exist, the basis used for calibration shall be recorded;
- calibration method and acceptance criteria;
- frequency of calibration, and when the calibration interval begins;
- documentation of the calibration measurements prior to adjustment and measurements after any adjustments during calibration;
- actions taken to prevent unintended use of TMMDE identified as out-of-calibration, beyond calibration interval, or not in-service;
- when the TMMDE is found to be out of calibration, an assessment of the validity of previous measurements and actions to be taken on the TMMDE and product, including maintaining records and evidence of notification to the customer if suspect product has been shipped;
- use of third-party, proprietary, employee-owned, and customer-owned TMMDE;
- maintenance; and
- suitability for the planned monitoring and measurement activities.

#### Related Document

QPMQC-04 Calibration

#### 5.8.3 Equipment [ISO 9001:2015, 7.1.5.2]

TMMDE identified shall:

- be calibrated;
- have the calibration status identifiable by the user prior to and during use;
- be safeguarded from adjustments or modification that would invalidate the measurement result or the calibration status;
- be protected from damage and deterioration during handling, maintenance, and storage; and
- be used under environmental conditions that are suitable for the calibrations, inspections, measurements, and tests being performed.

When used in the testing, monitoring, measurement, or detection of specified requirements, the ability of computer software to satisfy the intended application shall be confirmed prior to initial use and reconfirmed, as necessary.

#### 5.8.4 TMMDE Equipment from Other Sources

When TMMDE is third-party, proprietary, or customer-owned, Sahathai Steel Pipe shall confirm the equipment is in calibration prior to use. When limited by customer, contract, or licensing agreement, the requirements of 5.8.2, Item c), 5.8.2, Item d), 5.8.2, Item e), 5.8.2, Item f), 5.8.2, Item j), and 5.8.2, Item k) shall not apply.

#### 5.8.5 Records

Sahathai Steel shall maintain a registry of TMMDE that includes a unique identification, specific to each piece of equipment.

Records of the results of calibration and verification shall be maintained.



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## 5.9 Control of Nonconforming Product [ISO 9001:2015, 8.7]

### 5.9.1 Procedure

#### 5.9.1.1 General

Sahathai Steel Pipe shall maintain a documented procedure addressing the controls and related responsibilities and authorities for nonconforming product during product realization and after delivery.

#### 5.9.1.2 Nonconforming Product During Product Realization [ISO 9001:2015, 8.7.1]

The procedure for addressing nonconforming product identified during product realization shall include requirement for:

- product identification and control to prevent unintended use or delivery;
- addressing the detected nonconformity;
- taking action to preclude its original intended use or delivery; and
- authorizing its use, release, or acceptance under concession by relevant authority and, when required, by the customer

#### 5.9.1.3 Nonconforming Product After Delivery [ISO 9001:2015, 8.7.2]

The procedure for addressing nonconforming product delivered to the customer shall include requirements for:

- identifying, documenting, and reporting nonconforming product;
- the analysis of nonconforming product, provided the product or documented evidence supporting the nonconformity is available to facilitate the determination of the cause;
- taking action appropriate to the effects, or potential effects, of the nonconformity; and
- authorizing its use or acceptance under concession by relevant authority and, when required, by the customer

#### Related Document

QPMQC-06 Control of Non-conforming products

### 5.9.2 Nonconforming Product

Sahathai Steel Pipe shall address nonconforming product by performing one or more of the following:

- repair or rework with subsequent inspection to meet specified requirements;
- re-grade for alternative applications;
- release under concession; and/or
- reject or scrap

### 5.9.3 Release of Nonconforming Product Under Concession

The release under concession of nonconforming product that does not satisfy manufacturing acceptance criteria (MAC) shall be permitted when Sahathai Steel Pipe's relevant authority has conducted an evaluation, and authorized release provided that:

- products continue to satisfy the applicable DAC and customer criteria; or
- the violated MAC is determined as unnecessary to satisfy the applicable DAC and/or customer criteria;
- the DAC is changed and the affected products satisfy the revised DAC and associated MAC requirements. When the DAC was previously agreed with customer, the DAC change shall be authorized by the customer.

Sahathai Steel Pipe shall not release product not conforming to DAC or contract requirements without customer authorization.

### 5.9.4 Customer Notification of Nonconforming Product

Sahathai Steel Pipe shall notify customers of product not conforming to DAC or contract requirements, that has been delivered. Sahathai Steel Pipe shall maintain records of such notifications.

### 5.9.5 Records

Records of nonconformities shall be maintained and shall include:

- the description of the nonconformity;



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- b) subsequent actions taken, including concessions obtained;
- c) rationale to support release of product under concession; and
- d) relevant authority.

## **5.10 Management of Change (MOC) [ISO 9001:2015, 6.3]**

### **5.10.1 General**

Sahathai Steel Pipe shall maintain a documented procedure for MOC to maintain integrity of the quality management system when changes occur. The MOC procedure shall address:

- a) description of, and the need for, the change;
- b) availability and allocation of resources (including personnel);
- c) potential risks that may arise from implementing the change;
- d) review, approval, and implementation of the change;
- e) notifications; and
- f) verification of the completion of MOC activities and impact on the QMS.

#### Related Document

QPMQC-07 Management of Change

### **5.10.2 MOC Application**

Sahathai Steel Pipe shall use MOC for changes that may negatively impact the quality of the product.

#### **[ISO 9001:2015, 8.5.6 Control of changes]**

Saha Thai Steel Pipe shall review and control changes for production or service operations to the extent necessary to ensure continuing conformity of customer or internal requirements.

### **5.10.3 MOC Notification**

Sahathai Steel shall notify relevant internal personnel of the change and associated risk, including the customer when required by contract, of the change and associated risk. MOC Notifications shall be documented.

### **5.10.4 Records [ISO 9001:2015, 8.5.6 Control of changes]**

Saha Thai Steel Pipe retain documented information describing the results of the review of changes, the person(s) authorizing the change, and any necessary actions arising from the review.

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## 6.0 Quality Management System Monitoring, Measurement, Analysis, and Improvement

### 6.1 General

Sahathai Steel Pipe shall plan and implement the monitoring, measurement, analysis, and improvement processes needed to ensure conformity of the quality management system to the requirements of API Q1 10<sup>th</sup> edition including ISO 9001:2015 and to continually improve the effectiveness of the quality management system.

Quality management system monitoring, measurement, analysis, and improvement shall include determination of applicable methods, including techniques for the analysis of data, and the extent of their use.

Sahathai Steel Pipe shall determine: *[ISO 9001:2015,9.1.1]*

- what needs to be monitored and measured;
- the methods for monitoring, measurement, analysis and evaluation needed to ensure valid results;
- when the monitoring and measuring shall be performed;
- when the results from monitoring and measurement shall be analyzed and evaluated.

Sahathai Steel Pipe shall evaluate the performance and the effectiveness of the quality management system and retain appropriate documented information as evidence of the results.

### 6.2 Monitoring, Measuring, and Improving

#### 6.2.1 Customer Satisfaction *[ISO 9001:2015,9.1.2]*

Sahathai Steel Pipe shall maintain a documented procedure to monitor customer satisfaction.

The procedure shall address:

- the frequency and methods of determining customer satisfaction; and
- key performance indicators of customer satisfaction.

Records of the results of customer satisfaction information shall be maintained.

#### Related Document

QPMEX-01 Contract Review and Export Sale Process.

QPMDS-01 Domestic Sale Process

#### 6.2.2 Internal Audit *[ISO 9001:2015,9.2]*

##### 6.2.2.1 General

Sahathai Steel Pipe shall conduct internal audits to provide information on whether the quality management system is implemented, maintained, and conforms to the requirements of API Q1 10<sup>th</sup> edition and ISO 9001:2015.

Sahathai Steel Pipe shall maintain a documented procedure to define responsibilities for planning, conducting, and documenting internal audits.

Sahathai Steel Pipe shall identify the audit criteria, scope, frequency, and methods. *The planning of audits shall take into consideration the results of previous audits (internal and external), the criticality of the process being audited, and changes made to the quality management system.* All processes of the quality management system shall be audited at least every 12 months (not later than the end of the same calendar month as the prior year audit)

*When the entire quality management system is not audited as one consolidated audit, the time between audits of each part of the quality management system shall not exceed 12 months.*

For those processes performed by Sahathai Steel Pipe and identified as critical to product realization, audits shall include observation of the activity being performed and evaluate whether the activity conforms with requirements.

#### Related Document

QPMQS-04 Internal Audit

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#### 6.2.2.2 Performance of Internal Audit

Audits shall be performed by competent personnel independent of those who performed or directly supervised the activity being audited to ensure objectivity and impartiality of the audit process.

Records of the audits shall provide objective evidence that the quality management system is implemented and maintained.

#### 6.2.2.3 Audit Review and Closure

Sahathai Steel Pipe shall identify response times for addressing detected nonconformities. The management responsible for the area being audited shall ensure that any necessary corrections and corrective actions follow the requirements of 6.4.2.

Records of internal audits shall be maintained.

### 6.3 Analysis of Data [ISO 9001:2015, 9.1.3]

Sahathai Steel Pipe shall maintain a documented procedure for the identification, collection, and analysis of data to demonstrate the suitability and effectiveness of the quality management system. The analysis shall include data generated from monitoring and measurement, internal audits, [audits from external party](#), management reviews, and other relevant sources.

The data analysis output shall provide information, including trends, relating to:

- customer satisfaction
- [nonconformity](#) to product requirements during product realization;
- nonconformities and product failures identified after delivery or use, provided the product or documented evidence is available to facilitate the determination of the cause;
- [process performance](#);
- supplier performance; and
- achieving quality objectives

Sahathai Steel Pipe shall use data to evaluate where continual improvement of the effectiveness of the quality management system can be made.

#### Related Document

QPMQS-06 The Quality Management System

### 6.4 Improvement [ISO 9001:2015, 10.0]

#### 6.4.1 General

Sahathai Steel Pipe shall continually improve the effectiveness of the quality management system by evaluating, selecting, and implementing opportunities for improvement through the use of the quality objectives, internal audit, analysis of data, corrective action, and management review.

#### 6.4.2 Corrective Action

Sahathai Steel Pipe shall maintain a documented procedure to address nonconformities, including any resulting from customer complaints, and to take corrective actions, both internally and with suppliers. Corrective actions shall be appropriate to the effect(s) of the nonconformity encountered.

Note Corrective action can apply to both quality management system processes and nonconforming product trends.

The procedure shall address:

- [criteria for determining when the corrective action process is initiated](#);
- reviewing the nonconformity;
- determining and implementing corrections;
- identifying the root cause of the nonconformity and evaluating the need for corrective actions;
- implementing corrective action to reduce the likelihood that a nonconformity recurs;
- identifying the timeframe and responsible person(s) for addressing corrections and corrective action;
- verification of the effectiveness of the corrections and corrective action taken;
- [updating risks and opportunities determined during planning](#);

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- i) MOC when the corrective actions require new or changed controls within the quality management system; and
- j) evaluating similar, potential nonconformities and implementing action to reduce the likelihood of occurrence, as appropriate.

Records of corrective action process activities shall be maintained. Records shall identify the activities performed to verify effectiveness of the corrective actions taken.

#### Related Document

QPMQS-05 Corrective Action

## 6.5 Management Review

### 6.5.1 General

Sahathai Steel Pipe's quality management system shall be reviewed at least every 12 months (not later than the end of the same calendar month as the prior year review) by Sahathai Steel Pipe's management to evaluate the quality management system's continuing suitability, adequacy, and effectiveness. This review shall include assessing opportunities for improvement, adequacy of resource, and the need for changes to the quality management system, including the quality policy and quality objectives.

### 6.5.2 Input Requirements [ISO 9001:2015, 9.3.2]

The input to management review shall include, as a minimum:

- a) status and effectiveness of actions resulting from previous management reviews;
- b) results of internal audits and audits of the organization by external parties;
- c) changes that could affect the quality management system, including;
  - 1) changes to legal and other applicable requirements (such as industry standards); and
  - 2) changes in external and internal issues that are relevant to the quality management system.
- d) analysis of customer satisfaction;
- e) relevant feedback from customers and other interested parties;
- f) process performance;
- g) results of risk assessment and the effectiveness of actions taken to address risks;
- h) status of corrective actions;
- i) analysis of supplier performance;
- j) review of the analysis of product conformity, including nonconformities identified after delivery or use;
- k) actual performance compared with quality objectives; and
- l) recommendations for improvement.

### 6.5.3 Output Requirements [ISO 9001:2015, 9.3.3]

The output from the management review shall include:

- a) a summary assessment of the effectiveness of the quality management system;
- b) any required changes to the processes;
- c) decisions and actions;
- d) required resources, and
- e) any improvement to products in satisfying customer requirements.

Top management shall review and approve the output of management reviews.

Management reviews shall be documented, and records of these reviews shall be maintained.

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## Annex 1

### API Monogram Program

#### 1. Quality Management System Requirements

Sahathai Steel Pipe shall develop, maintain, and operate at all times a quality management system conforming to API Spec Q1.

#### 2. Control of the Application and Removal of the API Monogram

Sahathai Steel Pipe shall control the application and removal of the API Monogram in accordance with the following:

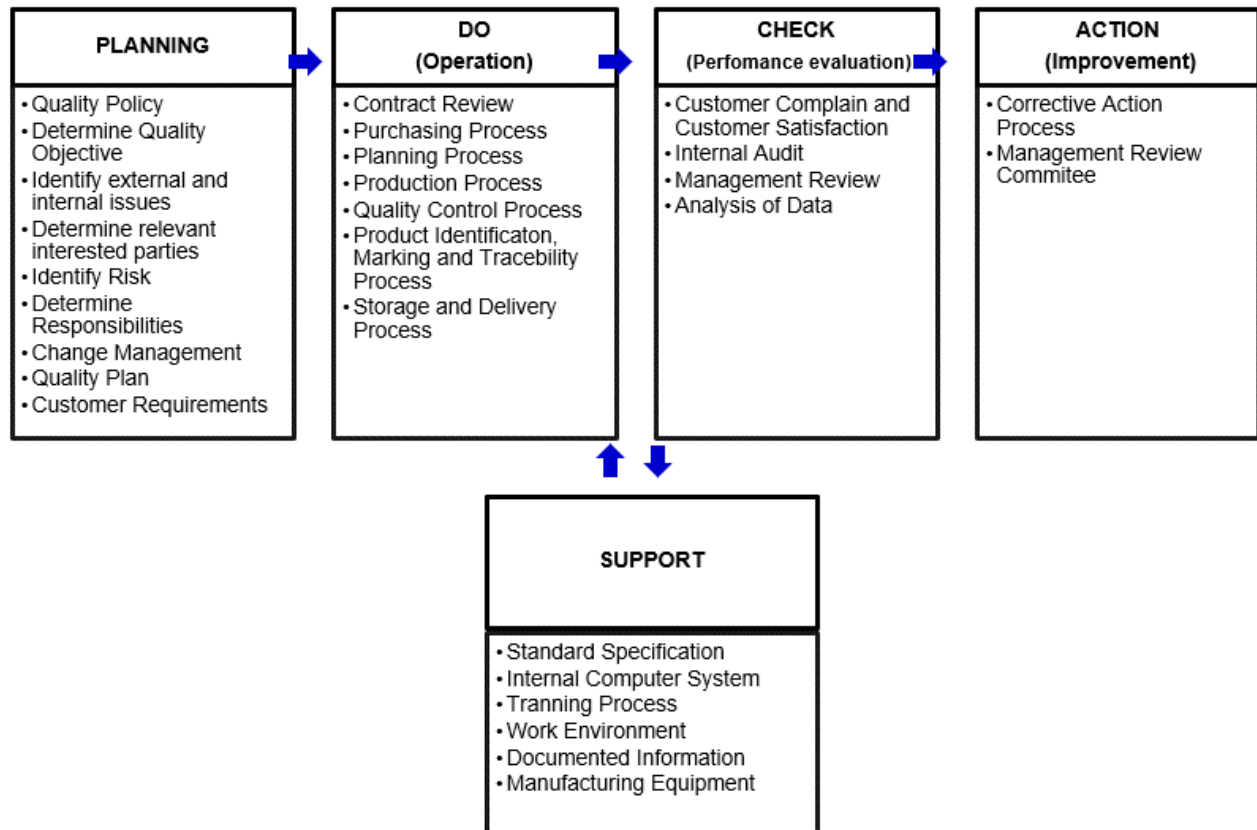
- a) Products that do not conform to API specified requirements shall not bear the API Monogram.
- b) Sahathai Steel Pipe shall develop and maintain an API Monogram marking procedure that documents the marking/monogramming requirements specified by this annex and any applicable API product specification(s) and/or standard(s).  
The marking procedure shall:
  - 1) define the authority responsible for application and removal of the API Monogram and license number;
  - 2) define the method(s) used to apply the Monogram and license number;
  - 3) identify the location on the product where the API Monogram and license number are to be applied;
  - 4) require the application of the date of manufacture of the product in conjunction with the use of the API Monogram and license number;
  - 5) require that the date of manufacture, at a minimum, be two digits representing the month and two digits representing the year (e.g. 05-12 for May 2012) unless otherwise stipulated in the applicable API product specification(s) or standard(s); and
  - 6) define the application of all other required API product specification(s) and/or standard(s) marking requirements.
- c) Sahathai Steel Pipe shall apply API Monogram after get the license from API, and designated license number shall be used together with Monogram when it may be used.
- d) API monogram shall be applied at that site specific Sahathai Steel Pipe's licensed facility location.
- e) The API Monogram may be applied at any time appropriate during the production process but shall be removed in accordance with Sahathai Steel Pipe's API Monogram marking procedure if the product is subsequently found to be out of conformance with any of the requirements of the applicable API product specification(s) and/or standard(s) and API monogram program.

#### 3. API License Number and Monogram

Sahathai Steel Pipe shall ensure that API Monogram license shall not be used unless in conjunction with the API monogram. The license number shall be marked in close proximity with the monogram.

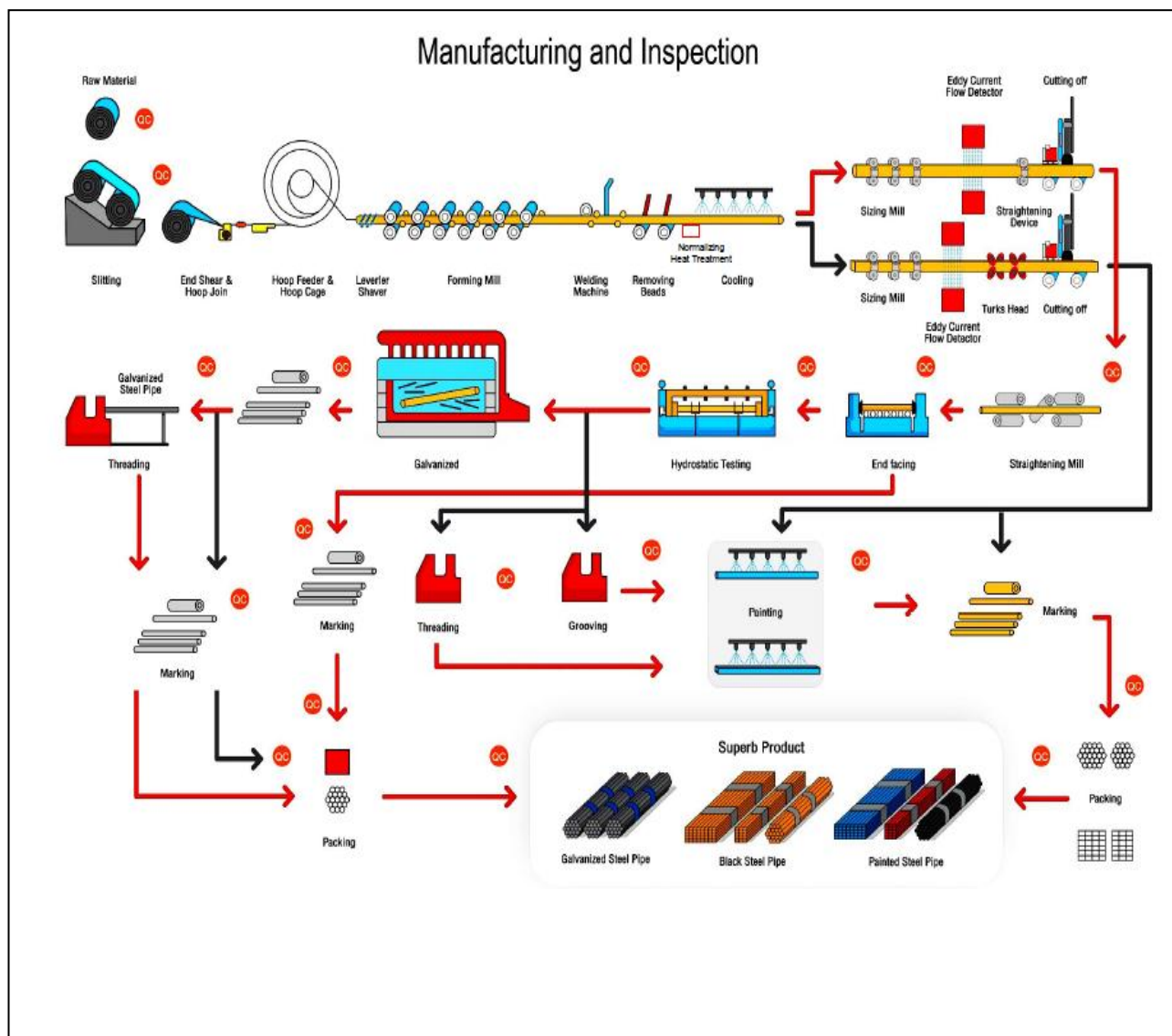
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**Annex 2**  
**Model Of System Realization**



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### Annex 3 Product Realization



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API Q1 10 <sup>th</sup> edition [ISO 9001:2015]	Procedure Manual
<u>4.0 Quality Management System Requirements</u>	
4.1 Quality Management System	
4.1.1 General [ISO 9001:2015, 4.4.1]	
4.1.2 Quality Policy [ISO 9001:2015, 5.2]	Quality Policy Document / Quality Manual
4.1.3 Quality Objectives [ISO 9001:2015, 6.2.1]	Quality Objectives Document
4.1.4 Planning the Quality Management System	
4.1.4.1 General [ISO 9001:2015, 4.1, 4.2, 4.3, 4.4, 6.1, 6.2.2]	QPMQS-06 The Quality Management System
4.1.4.2 Exclusions	Quality Manual
4.1.5 Communication [ISO 9001:2015, 7.4]	QPMQS-06 The Quality Management System
4.1.5.1 Internal	
4.1.5.2 External	
4.2 Management Responsibility	
4.2.1 General [ISO 9001:2015, 5.5.1, 5.5.2]	
4.2.2 Responsibility and Authority	QPMQS-06 The Quality Management System
4.2.3 Management Representative [ISO 9001:2015, 5.3]	QPMQS-06 The Quality Management System
4.3 Organization Capability	
4.3.1 Resources and Knowledge	
4.3.1.1 Resources [ISO 9001:2015, 7.1]	
4.3.1.2 Knowledge [ISO 9001:2015, 7.1.6]	
4.3.2 Human Resources	
4.3.2.1 Personnel Competence [ISO 9001:2015, 7.2]	QPMQA-02 Training
4.3.2.2 Training [ISO 9001:2015, 7.3]	QPMQA-02 Training
4.3.3 Work Environment [ISO 9001:2015, 7.1.3, 7.1.4]	QPMQS-06 The Quality Management System QPMIT-01 Control of IT System
4.4 Documentation Information Requirements [ISO 9001:2015, 7.5]	
4.4.1 General	
4.4.2 Procedure	
4.4.3 Control of Internal Documents	QPMQS-03 Control of Documents and Records
4.4.4 Control and Use of External Documents	QPMQS-03 Control of Documents and Records
4.4.5 Control of Records	QPMQS-03 Control of Documents and Records
<u>5.0 Product Realization</u>	
5.1 Contract Review [ISO 9001:2015, 8.2]	
5.1.1 General	QPMEX-01 Contract Review and Export Sale Process QPMDS-01 Domestic Sale Process
5.1.2 Determination of Requirements	
5.1.3 Review of Requirements	
5.2 Planning [ISO 9001:2015, 8.1]	QPMPPN-01 Production Plan
5.3 Risk Management	
5.3.1 General	QPMQS-02 Risk Assessment and Contingency
5.3.2 Risk Management	
5.3.2.1 Product Delivery	
5.3.2.2 Product Quality	
5.3.2.3 Change Impacting Product Quality	
5.3.3 Contingency Planning	
5.3.4 Records	
5.4 Design [ISO 9001:2015, 8.3]	Exclusions
5.5 Purchasing	
5.5.1 Purchasing Control [ISO 9001:2015, 8.4.1, 8.4.2]	
5.5.1.1 Procedure	QPMPC-01 Purchasing QPMPC-02 Evaluation and Selection of Suppliers
5.5.1.2 Initial Supplier Evaluation-Critical Purchases	
5.5.1.3 Initial Supplier Evaluation-Critical Purchases-Customer Specified, Proprietary, and/or Legal Limited	
5.5.1.4 Initial Supplier Evaluation-Noncritical Purchases	
5.5.1.5 Supplier Reevaluation	



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5.5.1.6 Records	
5.5.1.7 Outsourcing	
5.5.2 Purchasing Information [ISO 9001:2015, 8.4.3]	
5.5.3 Verification of Purchased Products, Components or Activities	
5.5.3.1 General	QPMPC-01 Purchasing
5.5.3.2 Critical Purchases	
5.5.3.3 Noncritical Purchases	
5.5.3.4 Records	
5.6 Control of Product Realization [ISO 9001:2015, 8.5]	
5.6.1 General [ISO 9001:2015, 8.4.1, 8.4.2]	Quality Plan
5.6.2 Quality Plan	Quality Plan
5.6.3 Process Control Documents	5.6.2 Quality Plan
5.6.4 Validation of Processes [ISO 9001:2015, 8.5.1g]	QPMFM-01 Forming Process QPMFM-02 Hydrostatic Testing QPMFM-03 Heat Treatment QPMQC-15 Automatic eddy current weld examination HFW WIMPT-01 Using painting machine no. B&C WIMPT-02 Using painting machine no.1
5.6.5 Identification and Traceability [ISO 9001:2015, 8.5.2]	QPMFN-01 Identification and Traceability
5.6.6 Inspection / Test Status [ISO 9001:2015, 8.5.2]	QPMQC-05 Inspection and Testing Status
5.6.7 Externally Owned Property [ISO 9001:2015, 8.5.3]	Exclusions
5.6.8 Preservation of Product [ISO 9001:2015, 8.5.4]	QPMWH-01 Handling, Storage and Preservation of Products QPMWH-02 Handling, Storage and Preservation of Raw Material
5.6.9 Inspection, Testing, and Verification [ISO 9001:2015, 8.5.1 c]	
5.6.9.1 General	QPMQC-02 In-process inspection QPMQC-03 Final Inspection QPMQC-08 API 5L Pipe Marking
5.6.9.2 In-process Inspection, Testing, and Verification	
5.6.9.3 Final Inspection, Testing, and Verification	
5.6.9.4 Records	
5.6.10 Preventive Maintenance [ISO 9001:2015, 7.1.3]	QPMMT-01 Maintenance
5.7 Product Release [ISO 9001:2015, 8.6]	QPMEX-01 Contract Review and Export Sale Process
5.8 Testing, Measuring, Monitoring, and Detection Equipment (TMMD)	
5.8.1 General [ISO 9001:2015, 7.1.5.1]	
5.8.2 Procedure [ISO 9001:2015, 7.1.5.2]	QPMQC-04 Calibration
5.8.3 Equipment [ISO 9001:2015, 7.1.5.2]	
5.8.4 TMMD Equipment from Other Sources	
5.8.5 Records	
5.9 Control of Nonconforming Product [ISO 9001:2015, 8.7]	
5.9.1 Procedure	QPMQC-06 Control of Non-conforming products
5.9.1.1 General	
5.9.1.2 Nonconforming Product During Product Realization [ISO 9001:2015, 8.7.1]	
5.9.1.3 Nonconforming Product After Delivery [ISO 9001:2015, 8.7.2]	
5.9.2 Nonconforming Product	
5.9.3 Release of Nonconforming Product Under Concession	
5.9.4 Customer Notification of Nonconforming Product	
5.9.5 Records	
5.10 Management of Change (MOC) [ISO 9001:2015, 6.3]	
5.10.1 General	QPMQS-07 Management of Change
5.10.2 MOC Application [ISO 9001:2015, 8.5.6]	
5.10.3 MOC Notification	
5.10.4 Records [ISO 9001:2015, 8.5.6]	
6.0 Quality Management System Monitoring, Measurement, Analysis, and Improvement	
6.1 General [ISO 9001:2015, 9.1.1]	
6.2 Monitoring, Measuring, and Improving	

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6.2.1 Customer Satisfaction <i>[ISO 9001:2015, 9.1.2]</i>	QPMEX-01 Contract Review and Export Sale Process QPMDS-01 Domestic Sale Process
6.2.2 Internal Audit <i>[ISO 9001:2015, 9.2]</i>	
6.2.2.1 General	QPMQS-04 Internal Audit
6.2.2.2 Performance of Internal Audit	
6.2.2.3 Audit Review and Closure	
6.3 Analysis of Data <i>[ISO 9001:2015, 9.1.3]</i>	QPMQS-06 The Quality Management System
6.4 Improvement <i>[ISO 9001:2015, 10.0]</i>	
6.4.1 General	
6.4.2 Corrective Action	QPMQS-05 Corrective Action
6.5 Management Review	
6.5.1 General	
6.5.2 Input Requirements <i>[ISO 9001:2015, 9.3.2]</i>	
6.5.3 Output Requirements <i>[ISO 9001:2015, 9.3.3]</i>	