One Valmont

Within the plants and offices at Valmont® Industries, Inc. it is common to hear the phrase “One Valmont”. This statement is a reflection of our organizational commitment to working together across boundaries to achieve common goals. We must not overlook, however, the importance of inviting our external providers to be part of “One Valmont” as well. We count on external providers for a range of products and services that are critical to the quality of our structures. Our success truly begins with you!

Our Supply Chain Strategy

In order to satisfy our customers, Valmont’s strategy for managing our supply chain is to build meaningful partnerships with our external providers, to minimize risk, and to foster continuous improvement. This handbook is designed to support that strategy and provide a roadmap for success as a supply chain partner. Please review the information carefully and contact us with any questions.

Using the Quality Handbook

This handbook is provided as a guide for external providers and includes the following sections:

1) Introduction to Valmont Industries
2) Expectations of External Providers
3) External Provider Code of Conduct
4) Quality Management System Requirements for Tier 1 External Providers

An appendix is also provided with key terms and definitions.

Thank you for your commitment to a strong, productive, and continually improving partnership! We look forward to working with you.

Respectfully yours,

Frank Kos
VP of Supply Chain
North American Pole Operations
Valmont Industries, Inc.
The latest version of this controlled document is available on the Valmont® Industries website at www.valmont.com/supplychain. While reasonable efforts will be made to notify external providers of any changes, it is the external provider’s responsibility to periodically check the Valmont Industries website to ensure that they are using the latest revision. If an external provider takes exception to any requirements presented in this handbook, it shall be the external provider’s responsibility to obtain written permission from Valmont Industries for any deviations.

This document is owned and controlled by the North American Pole Operations / Supply Chain Group at Valmont Industries. Requirements may be communicated to Valmont’s external providers via purchasing documents, agreements, specifications, and other documents. This handbook is intended to supplement these requirements, not to replace or alter them. If conflicting interpretations of the standards arise, the following order of precedence applies unless otherwise noted contractually:

1) Agreements
2) Specifications
3) Purchase Orders
4) Quality Handbook (this document)
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Valmont® Industries, Inc. is a leading producer and distributor of products and services for the infrastructure and agricultural markets.

Valmont began in 1946 when founder, Robert B. Daugherty, combined his $5,000 savings with a wholehearted belief that business could and should be done better. From those modest beginnings, the company grew into a global leader of engineered products and services for infrastructure, and water-conserving irrigation equipment and solutions for agriculture.

From lighting and traffic structures to guide the way, to communication towers that keep people connected, to utility structures that power homes and businesses, to irrigation equipment and technology that helps grow the world’s food, we are committed to Conserving Resources. Improving Life®.

Four primary business segments comprise Valmont: Engineered Support Structures; Coatings; Irrigation and Utility Support Structures. We manufacture products in over 80 different facilities spread across six continents and do business in over 23 different countries. Valmont is publicly traded on the NYSE under the symbol (VMI).

We are passionate about our products. We pride ourselves on being people of integrity who excel at delivering results. We pursue opportunities for growth by taking products and processes to new markets, developing new products for existing markets, and continually improving across the company to ensure that Valmont solutions are always the global industry leader.
Today, Valmont® is a globally recognized leader in the civil infrastructure and agriculture industries. Like most every great company, Valmont began with one man who had a vision, an entrepreneurial spirit and strong desire to create something of lasting value. So strong was that desire that he put his life savings—$5,000.00—on the line. That man was Robert B. Daugherty. In 1946, he founded what was to become the company we know as Valmont Industries today.

Born in Omaha, Nebraska in 1922, Bob Daugherty was a graduate of Omaha Central High School and later attended Carleton College in Northfield, Minnesota. After college, he served in World War II. He was commissioned a second lieutenant in the Marine Corps, first serving in the Pacific theatre and later in China.

In 1946, following the war, Frank Daugherty (Bob’s uncle and mentor) encouraged Bob to consider business opportunities. This led him to invest his life savings in a farm machine shop in Valley, Nebraska. In 1954, Daugherty purchased the licensing rights to manufacture the center pivot from inventor Frank Zybach and embarked on a journey that would revolutionize agriculture—in North America and throughout the world.

Under Daugherty’s leadership, Valmont later expanded into the tubing, galvanizing and engineered infrastructure products industries.

Daugherty retired from Valmont’s Board of Directors in 2004 after serving for 57 years, and continued to demonstrate his dedication to agriculture and water conservation well into his retirement. In April 2010, his charitable foundation committed $50 million to the University of Nebraska to found the Global Water for Food Institute. The multi-campus center for research, education and policy analysis relating to the use of water for agriculture will facilitate development of solutions to the challenges of hunger, poverty, farm productivity and water management. “I can’t think of a better investment to sustain [my life’s work],” he said.

Daugherty’s legacy will extend into the future as Valmont continues to grow and adapt to the global business environment.
Expectations of External Providers

This section of the handbook explains the expectations of Valmont® for external providers. The external provider should consult documents referenced in this section for more information.

Valmont Representatives

Valmont has a talented team of professionals who are tasked with supporting our relationships with external providers. Titles may vary, but the external provider can expect to interface with the roles identified below.

• The Sourcing Representative is the external provider’s primary point of contact at Valmont and is involved with purchasing-related matters, such as purchase orders, delivery, and forecasts. If you are not sure who to contact, please start with your Sourcing Representative.

• The Sourcing Manager or Commodity Manager is responsible for business-related matters such as contracts, agreements, cost, and relationship management.

• The Sourcing Quality Engineer is responsible for initial and ongoing evaluation of external providers, administering corrective and preventive action requests, and fostering quality improvements.

• The Responsible Engineer is the technical partner and is responsible for all matters related to product design and specifications, including approval of deviation requests.

There may be cases in which it is necessary to interface with other Valmont representatives. However, in order to promote effective and efficient communication, please defer to the Valmont personnel shown above.

Selection of External Providers

All external providers must be approved by Valmont before products or services are procured. Valmont considers several factors when selecting external providers, including but not limited to quality, delivery, capacity, integrity, financial strength, and geographic location. External providers are responsible for ensuring that their products and/or services conform 100% to specification and are delivered 100% on time. Approval of an external provider by Valmont does not absolve the external provider of this responsibility. Valmont classifies Tier 1 external providers into four categories – Developing, Established, Advanced, and Distinguished – which are used as a basis for sourcing decisions.

Initial and Ongoing Evaluation

As a basis for approval and classification, Tier 1 external providers are evaluated by Valmont at least annually against quality management system (QMS) requirements and benchmarks for QMS maturity, which are outlined in this handbook. Performance of external providers is monitored by Valmont and evaluated on the basis of quality, delivery, and responsiveness. The external provider is expected to participate actively in the evaluation process.

Production Part Approval Process (PPAP)

For purchased products, Valmont may require the submission and approval of a PPAP warrant before production begins. When specified, the Valmont sourcing representative will provide the necessary documentation and instructions for meeting PPAP requirements.
Demonstrated Statistical Process Control and Process Capability

Statistical process control (SPC) may be required on certain product characteristics, in order to verify that the manufacturing process is capable, and remains capable, of producing output that consistently meets specification. Valmont® is responsible to identify those items requiring SPC, and the external provider is responsible for properly applying SPC. Objective evidence of the proper application of SPC (e.g. control charts, capability analyses) shall be available upon request.

First Article Inspection

The external provider may be required to submit a first article inspection report. Examples of when a first article inspection report may be required include a new part, a change in design, a change in manufacturing process, a change in material, or a change in location.

Verification of Purchased Products and Services

Valmont reserves the right to verify the quality of purchased products and services at the external provider’s premises. This right to verify at the external provider’s premises shall also be extended to include Valmont customers if required by customer contract.

Corrective and Preventive Actions (CAPA)

Valmont will notify the external provider in the event that a nonconformance is identified in one of the external provider’s products (or services), processes, or systems. Based on the frequency and severity of a nonconformance, a corrective action request may be issued. Likewise, Valmont may issue a preventive action request in the event that an opportunity for improvement has been identified. The external provider is expected to respond in a timely fashion, based on deadlines established by Valmont, and to provide sufficient supporting information to enable Valmont to verify implementation and effectiveness.

Deviation Requests

Purchased products and services shall not be delivered to Valmont if they do not fully comply with the purchasing documents. Any deviation from these requirements must be approved in writing by Valmont. A deviation request should be submitted to the Valmont sourcing representative who issued the purchase order; this representative will consult with appropriate Valmont personnel and provide a timely response.
External Provider Code of Conduct

Introduction

Valmont® aims to enjoy the highest reputation worldwide for the professional, legal, and ethical way in which we conduct our business as stated in our Core Values.

Our Core Values:

• We have a passion for our products, services, and customers.
• We operate with absolute integrity.
• We strive for continuous improvement removing waste everywhere with a true sense of urgency.
• We consistently deliver results.

To provide products or services to Valmont, all external providers and each of their facilities that supply products or services to Valmont are required to comply with Valmont’s External Provider Code of Conduct (EPCOC), in addition to all applicable laws and regulations. All external providers are also expected to respond to reasonable requests for information from Valmont necessary to demonstrate compliance with the EPCOC or other pertinent requirements. We will assess conformance to these requirements, progress toward meeting these requirements, and ongoing performance in making sourcing decisions.

Valmont’s Commitment to Our External Providers

Valmont’s relationships with its external providers must be characterized by honesty and fairness. We are guided by the following standards of behavior:

• We will not make payments to any employees of external providers to attain lower prices for Valmont.
• We will not reveal an external provider’s pricing, technology, or other confidential information without prior written permission.
• We will not make false or misleading remarks to others about external providers or their products or services.

Confidentiality

Valmont external providers will keep all supply agreements and Valmont customer information confidential including pricing and Valmont Brand product specifications, and such information will not be released to third parties without the prior written consent of Valmont. This restriction will not apply to information known to an external provider which now or subsequently becomes known to the public through no fault of the external provider. It does apply to agents and employees of Valmont external providers, including brokers and their personnel.

Limitation on Gifts and Gratuities

To maintain high ethical standards and to avoid the appearance of impropriety, Valmont directors, officers, and employees will not give or receive payments or gifts in exchange for business opportunities with customers, external providers, government entities, or other Valmont employees.
Good Governance

Ethical behavior is an integral part of everything that we do. The application of strict standards to avoid bribery and corruption-related risks and compliance with our high ethical standards are essential to our continued success. As an international business, our policy is to follow our own internal procedures and guidelines while also respecting local legislation wherever we operate around the world.

In everyday business transactions, our external providers must be even-handed and fair without deception or dishonesty in their dealings with customers, external providers, and others with whom they work.

We expect all our external providers to:

- Accept personal responsibility for behaving professionally, ethically, fairly, and with integrity.

- Prohibit any actions that falsify or distort free competition or market access, or infringe the applicable legal rules concerning competition law.

- Prevent the offering, promising, or giving of a bribe and the requesting, agreeing to receive, or accepting of a bribe by any person associated with them.

- Notify Valmont immediately if they become aware that any of the external provider’s directors, officers, or employees are acting in the capacity of a Public Official where this could be relevant to their relationship with Valmont.

- Notify Valmont immediately if they become aware that any of the external provider’s directors, officers or employees have a relationship with any Valmont employee that could result in a conflict of interest.

- Comply with the fiscal obligations within all territories in which they operate.

- Operate and maintain an Employee Code of Conduct.

Social Responsibility

As a major international business, we have significant relationships across the world with our employees, the communities in which we operate, and the many stakeholders in our businesses. As a result we take our corporate social responsibilities seriously and acknowledge internationally proclaimed human rights.

All external providers must conform to the relevant International Labor Organization Labor Standards as a minimum requirement. This means external providers must strive to apply employment standards which promote the application of human rights. There should be no intentional discrimination for recruitments, promotions, job transfer, dismissal, and other employment related activities on the basis of race, color, creed, nationality, age, marriage or civil partnership, pregnancy and maternity, gender, gender reassignment, sexual orientation, religion or belief, ethnic or national origins, disability, union membership, political affiliation, or other status protected by law.
Social Responsibility (Continued)

Local laws on age discrimination must be observed. Abuse, harassment or intimidation will not be tolerated under any circumstances, nor will the act of pressuring or retaliating against the individual who reports such harassment.

We expect all our external providers to:

• Provide a safe and healthy working environment by minimizing, as far as is reasonably practical, the causes of hazards inherent in the working environment.
• Minimize the risk of exposure to harmful materials, machinery, or operations.
• Operate and maintain an effective safety policy.
• Respect national employment law on working hours. Valmont® will not engage with external providers who apply or support forced labor. Young people under the age of 15, or older if defined by law, must not be employed.
• Comply with legislation regarding slavery and human trafficking.
• Comply with local Valmont health and safety policies, including those related to alcohol and drug misuse, when working at or visiting VALMONT sites.

Environmental Responsibility

Valmont Industries is committed to providing products and services that enhance the lives of our customers, employees, and communities, and to do so in an increasingly efficient and environmentally friendly manner.

We expect all our external providers to:

• Comply with all applicable environmental legislation.
• Have an environmental policy that is proportionate to the environmental risk of their business.
• Manage hazardous material through compliance with applicable laws, regulations, and standards, as well as internal rules and procedures. External providers must seek to take every possible measure in order to prevent release of hazardous material, fire, explosion, and other major accidents that may cause severe damage to their own employees, premises, surrounding communities, and environment.
• Follow procedures that ensure existing plant and equipment are operated in ways which minimize any impact on the environment.
• Train employees and provide the necessary resources to make them aware of their personal responsibilities for protecting the environment.

Our external providers should uphold the same standards with regards to their own external providers.

Risk Management

We expect our external providers to demonstrate a responsible attitude towards risk and for them to expect the same from their own external providers.

We expect all our external providers to:

• Operate their business in a responsible and prudent manner to minimize the risk of financial failure.
• Inform Valmont of any issues or developments that significantly increase the level of risk in the supply chain to Valmont.
• Maintain their own external provider risk assessment process.
Quality Management System Requirements for Tier 1 External Providers

This section of the handbook explains quality management system (QMS) requirements for Valmont® Industries’ Tier 1 external providers – i.e. providers whose products become part of Valmont’s end product, or whose products or services are central to Valmont’s output and who meet certain risk-based criteria. The requirements are aligned with AISC 207-16 Certification Standard for Steel Fabrication and Erection, and Manufacturing of Metal Components. Recognized best practices are also included as benchmarks for QMS maturity.

Requirements in this section are grouped into the following four parts:

**Part A: Quality Assurance**

Based on AISC 207-16 clauses on Management Responsibility, Corrective Action, Training, and Internal Audit

**Part B: Document Review and Communication**

Based on AISC 207-16 clauses on Construction Document Review and Communication, Control of Management System Documents and Project Documents, and Maintenance of Quality Records

**Part C: Materials and Traceability**

Based on AISC 207-16 clauses on Purchasing, Material Identification, Control of Nonconformances, and Handling, Storage, and Delivery of Products and Materials

**Part D: Quality Control**

Based on AISC 207-16 clauses on Process Control, Inspection and Testing, and Calibration of Inspection, Measuring, and Test Equipment

As used in this section, the words **shall** or **will** denote a mandatory requirement. The word **should** denotes a guideline or recommendation. The words **may** or **can** denote an opportunity to make a choice.
Part A: Quality Assurance

Based on AISC 207-16 clauses on Management Responsibility, Corrective Action, Training, and Internal Audit

A1. Quality Goals

Executive management shall establish goals to improve quality. Goals shall be measurable and documented through objective evidence. As quality goals are achieved, new goals shall be set that demonstrate commitment to continuous improvement. In addition to high-level quality goals established by executive management, corresponding department-specific goals should be established. Quality goals should incorporate recognized quality metrics, such as DPMO (or DPPM), FTY (or RTY), or costs of poor quality (COPQ).

Management shall establish a policy authorizing personnel to stop work in order to remedy nonconforming product or nonconforming work.

A2. Periodic Management Review

Executive management shall conduct periodic review of the QMS at least annually and document the results, including decisions and actions necessary for implementing improvements to the effectiveness of the QMS and its processes, improvements to product quality, and provision of resources to support quality.

Management review should encompass, assess and report the following:

A. A summary of previous management reviews.
B. Results of any internal and external audits conducted since the previous management review.
C. An assessment of customer feedback and feedback mechanisms, identifying opportunities for improving quality.
D. An assessment of product or work nonconformances, including consideration of frequency and severity of these nonconformances.
E. An assessment of process nonconformances, including compliance with the documented procedures comprising the QMS.
F. An assessment of the effectiveness of the corrective actions taken.
G. An assessment of the results of equipment performance, including the adequacy of equipment resources.
H. An assessment of the adequacy of the training program to support required competencies.
I. An assessment of any proposed or required modifications to the QMS.
A3. Responsible Quality Personnel

Executive management shall designate a management representative for quality who shall report directly to (or be a part of) executive management. The designated management representative for quality may perform other functions within the company, provided that those functions do not conflict with the quality responsibilities. The designated management representative(s) shall have the ability, responsibility and authority to:

A. Ensure that documented procedures needed for the QMS are established, implemented and maintained in accordance with this section.
B. Report to executive management on the performance of the QMS and any need for improvement.
C. Communicate with external parties on matters relating to the QMS.

A4. Resource Management

Resources necessary to comply with customer requirements shall be available. Resources shall include, but are not limited to, the resources described in this section. Personnel shall possess the required qualifications and the ability to successfully perform the work.

A5. Quality Management System (QMS)

The external provider shall maintain a QMS that satisfies all of the requirements of this section. The QMS shall include a quality manual, procedures, and forms as necessary to support consistent quality. The QMS should be certified to ISO 9001, AISC 207-16, or another recognized national or international QMS standard.

A6. Internal Communication

Executive management shall ensure that appropriate communication processes are established and that communication takes place on a regular basis regarding the effectiveness of management systems. Formal communications shall be available to personnel in a manner that they can readily understand. The activities of formal meetings including start-up meetings or toolbox talks, should be documented.


A fabrication facility shall consist of areas and buildings that provide the necessary space and resources for the assigned work. The work areas and buildings shall be conducive to achieving consistent quality work. The external provider shall have under their control the equipment and technology necessary to perform work consistent with Valmont® Industries’ quality requirements.

A8. Corrective and Preventive Actions

A documented procedure shall be developed for corrective action to improve quality. Any corrective action taken shall be to the degree appropriate to the magnitude of problems and commensurate with the risks to quality. The corrective action procedure shall address these steps:
A8. Corrective and Preventive Actions (Continued)

A. Document a corrective action request (CAR) that includes the nonconformance to be addressed by the corrective action and the requirement that has not been met. The corrective action procedure shall define the functional positions authorized to issue a CAR and initiate the corrective action process.

B. Assign responsibility and establish a time frame for the response to a CAR.

C. Investigate and document the scope of the nonconformance, root causes, corrective measures taken, and list the actions to be taken to prevent recurrence.

D. Communicate the corrective action request and resolution to executive management and appropriate members of the organization.

E. Follow up the corrective action taken with periodic monitoring to assure the corrective action is implemented and is effective.

Corrective action shall be applied when:

A. There is a nonconformance that is repetitive in nature as identified by periodically reviewing nonconformance reports or summaries for negative trends.

B. Process nonconformances are found during the internal or external quality audits indicating that the QMS may not be implemented and functioning as stated in the quality manual.

C. Nonconformance with the QMS is found during the day-to-day execution of the system.

D. Nonconformance is unacceptable as determined by management.

E. A complaint from Valmont® has been investigated and corrective action has been determined necessary.

When periodically reviewed, nonconformances should be analyzed through the use of a Pareto chart, or similar quality tool, in order to guide the problem-solving process and prioritize actions that will have the greatest impact on quality improvement. The corrective action process should follow a recognized problem-solving process, such as PDCA, 8D, DMAIC, or Kaizen.

Preventive actions should also be incorporated in this process, in order to anticipate and prevent possible nonconformances.

A9. Training

Personnel responsible for functions that affect quality shall receive appropriate initial and periodic documented training on the quality requirements for the assigned work. Personnel who facilitate training shall have appropriate training or experience in the subject they are teaching. A documented assessment of employee competency for all personnel whose work affects quality should be conducted at least annually, in order to identify training needs.

A10. Internal Audit

In accordance with a documented procedure, an internal audit of each section of the QMS shall be performed at least annually to evaluate the compliance and the effectiveness of implementation. The management representative or a qualified individual, independent of the function being audited, shall perform the audit and produce a written record of the audit result from each section. The internal audit program should involve routine auditing of systems, processes, and products and be facilitated by auditing personnel who are certified to a national or international standard for quality auditing, such as ASQ CQA or an ISO lead auditor certification.
Part B: Document Review and Communication

Based on AISC 207-16 clauses on Construction Document Review and Communication, Control of Management System Documents and Project Documents, and Maintenance of Quality Records

B1. Quality Policy

Executive management shall ensure that the policy for quality is understood, implemented, and maintained. It shall be posted conspicuously where the work is performed. The quality policy shall include:

A. A commitment to quality that includes a commitment to meet customer requirements and a commitment to continuous improvement.

B. A QMS that provides a framework for establishing, communicating and reviewing quality goals.


The quality manual shall include a page showing the current revision date and the name and location of the facility or organization. The quality manual shall include or reference the quality policy, quality goals, and all QMS documents necessary to support quality. The quality manual should also include or reference the following items:

A. Organizational chart describing the interrelationship of functional positions that manage, perform and verify work affecting quality.

B. Job descriptions outlining responsibilities, authority and required qualifications for key positions.

C. Qualification evidence for individuals in key positions/ functions.

D. Equipment list.

E. Facility plan.

Executive management shall define additional documented procedures or other documents that are required beyond the minimum requirements set by this section to meet the needs of the organization and its customers. The highest ranking member of executive management shall sign and date the quality manual. The quality manual shall include the scope of the QMS and provide justification for any exclusions.

B3. Contract and Specification Review

A documented procedure shall be developed for contract and specification review. The procedure shall require these reviews for each order or project, and the review shall begin no later than the acceptance of responsibility for performing the work.

B4. Quality Management System (QMS) Documents

A documented procedure shall be developed to control QMS documents. Documents covered by this section shall include, but are not limited to, the quality manual and any documented procedures. QMS documents shall be summarized in a matrix or log, in order to support document control.

“How-to” documents like work instructions and visual aids are recommended as a means to support standard work of manufacturing operations. These “how-to” documents should incorporate effective use of multimedia to support comprehension and engagement for the learner.

An up-to-date library of relevant external standards shall be maintained. A comprehensive library of relevant training materials should also be maintained. In either case, all personnel whose work affects quality shall have appropriate access.
B5. Review and Approval of QMS Documents

Documents shall be reviewed and approved by the same function and authority level that authorized the original document. The function and authority levels that have responsibility for review and approval of QMS documents shall be designated. Revisions to the quality manual and other QMS documents shall be reviewed for adequacy and approved by the same function and authority level that authorized the original document. Requirements for the frequency of review and the process for revising documents shall be documented and shall include a mechanism for identifying changes.

B6. Project Documents

A documented procedure shall be developed to control project documents. Documents covered by this section shall include, but are not limited to, original and revised purchasing documents, drawings, RFIs, and Valmont® specifications.

B7. Revision Control for QMS Documents and Project Documents

Revisions shall be clearly identifiable, and there shall be a method for monitoring and identifying the latest revision. The documented procedure shall include provisions to prevent inadvertent use of obsolete documents. Documents shall remain legible and easily identifiable. Documents shall be available and readily accessible to all personnel whose work affects quality. Changes and revisions shall be clearly communicated to all personnel whose work affects quality. Paper-less documentation is recommended.

B8. Quality Records

A documented procedure shall be developed for the retention of quality records that provide for record identification, collection, storage and retrieval, retention, and disposition.

Quality records may include but are not limited to:

A. Certificates of conformance
B. Corrective action requests
C. Equipment maintenance records
D. Inspection and testing reports
E. Internal and external audit reports
F. Purchase orders
G. Material test reports (MTR's)
H. Personnel certifications
I. Nonconformance reports
J. Revisions to purchasing documents
K. RFI’s and related documentation
L. Evaluations of external providers
M. Training records

B9. Retention, Storage, and Retrieval of Quality Records

Quality records shall be retained for at least ten years. The documented procedure for the control of quality records shall contain provisions for the disposition of the records at the end of the retention period. Quality records shall be stored in a manner that minimizes potential for damage, deterioration and loss. They shall be accessible in a reasonable time frame. Paper-less recordkeeping is recommended.
Part C: Materials and Traceability

Based on AISC 207-16 clauses on Purchasing, Material Identification, Control of Nonconformances, and Handling, Storage, and Delivery of Products and Materials.

For the purposes of Part C, “external provider” should be understood as a sub-tier supplier or subcontractor – i.e. a firm that sells a product or service to Valmont® Industries’ external provider.

C1. Purchasing

A documented procedure shall be developed to ensure that purchased products and services meet customer requirements.

Purchasing documents shall clearly describe purchased products and services and provide sufficient detail to ensure that customer requirements are understood. This information shall include, but shall not be limited to:

A. The type of service, material, class, grade, and other unique identification
B. The applicable specifications, drawings, process requirements, inspection instructions, and any witness points
C. Delivery instructions and date
D. Required quality reports, certified test reports, and certificates of compliance/conformance of purchased materials

C2. Selection of External Providers

External providers shall be evaluated and selected on the basis of their ability to meet customer requirements. A documented procedure shall be developed that describes how initial and ongoing evaluation of external providers is conducted.

Management shall determine:

A. Evaluation criteria
B. Reevaluation interval
C. Personnel involved in the evaluation process

External providers shall be evaluated via an audit or documented acceptable past experience. Quality of product and services, as well as timely and proper delivery, shall be part of the evaluation. The external provider should limit selection of its external providers to organizations with a QMS certified to a recognized national or international standard, such as ISO 9001:2015. Evaluation should be conducted at least annually based on performance against quality and delivery requirements.

C3. Verification of Purchased Products and Services

The documented procedure for purchasing shall identify the activities necessary for ensuring that purchased products and services meet customer requirements.
C4. Control of Valmont®-Furnished Material
If materials are furnished by Valmont, including tooling, these materials shall be verified, stored, and maintained in an appropriate fashion. Valmont-furnished material shall be protected to prevent use for other than its intended purpose. Any such product that is lost, damaged, or otherwise unsuitable for use shall be documented and reported to Valmont.

C5. Material Identification and Traceability
A documented procedure shall be developed for the identification of material. Records that provide a basis for material identification shall be retained. The external provider shall develop a documented procedure to maintain traceability of materials from the point of receipt, throughout the course of fabrication, and to the point of delivery to the customer (or shipment as applicable). A detailed status of each customer order should be readily available in real time to the customer, including the current operation (e.g. cutting, forming, assembly).

C6. Control of Nonconformances
A documented procedure shall be developed to identify and control nonconformances.

A nonconformance related to the performance of the management system shall be documented to the detail level described by the documented procedure. These nonconformances may be identified during the management review process, through a quality audit (whether conducted by 1st, 2nd, or 3rd party), or through day-to-day execution of the QMS.

The documented procedure for nonconforming product shall provide for identification, documentation, evaluation, treatment of nonconforming product, and notification of the relevant functions concerned.

Nonconforming product shall be clearly marked as soon as practical after it is discovered. Records shall be kept of the pieces affected, the nature of the nonconformance, the treatment selection, authorization, and re-inspection results if applicable. The treatment of nonconforming product and may include:

A. Rework
B. Use as-is
C. Scrap

If the treatment is rework, the result will be inspected in accordance with customer requirements.

Nonconforming product should be controlled via an appropriate, designated storage space; a classification in the ERP system; and physical labeling of the product (e.g. hold tag).

Records of nonconformances should be routinely incorporated in communication and training with all personnel whose work affects quality.

C7. Handling, Storage, and Delivery
Products and materials shall be stored, loaded, and shipped to avoid damage and deterioration. Products and materials shall be protected to prevent use in other than its intended purpose. Any such material that is lost, damaged, or otherwise unsuitable for use shall be recorded and reported as appropriate Personnel responsible for material handling shall be qualified to safely and effectively operate assigned equipment.
Part D: Quality Control

Based on AISC 207-16 clauses on Process Control, Inspection and Testing, and Calibration of Inspection, Measuring, and Test Equipment

D1. Process Control

Documented procedures shall be developed for fabrication processes necessary to produce a consistent, acceptable level of quality of the completed work in accordance with customer requirements.

Routing of product through multiple operations shall be documented and clearly communicated to personnel responsible for the work. These routings should be controlled systematically to eliminate the chance of an operation or verification being skipped.

Effective quality planning should be facilitated using failure modes and effects analysis (FMEA) and corresponding control plans (or similar plan based on the FMEA results). Processes should be clearly mapped out and should be analyzed with value stream mapping.

The external provider should establish a comprehensive program for continuous improvement led by a full-time certified Six Sigma Black Belt (or Master Black Belt). All personnel whose work affects quality should be engaged in these continuous improvement activities.

D2. Control of Special Processes

The external provider must have specific, documented, and controlled procedures for each special process performed. Special processes include, but are not limited to, detailing, welding, hot-dip galvanizing, painting, and non-destructive evaluation. Please see the corresponding audit checklists for additional requirements that apply to special processes.

D3. Equipment Maintenance

The external provider shall develop a documented procedure for equipment maintenance. This procedure shall define the evaluation of, and preventive maintenance for, equipment necessary to meet quality and delivery requirements. Work instructions should be provided to support major equipment-related tasks such as set-up, shut-down, changeover, and maintenance. Overall equipment effectiveness (OEE) should be evaluated for all major manufacturing equipment and utilized as a means of maximizing productivity.

D4. Inspection and Testing

A documented procedure for inspection and testing shall be developed to ensure that the completed work meets the requirements of purchasing documents.

Materials shall be inspected before the work begins. The external provider shall employ in-process inspection to verify process requirements are met that are not readily verifiable at final inspection. Processes shall be monitored for conformance to documented process control procedures. Final inspection shall be conducted before release of product by qualified and responsible personnel. Product that passes final inspection shall be conspicuously labeled to show this approval.
D5. Assignment of QC Inspections and Monitoring

Qualification requirements for QC inspectors (or personnel responsible for quality control) shall be defined and documented. Production personnel may be assigned to QC inspection duties under the following conditions:

A. They are knowledgeable in proper inspection methods and acceptance criteria specified for the material or products they are inspecting and hold the required certification as applicable.
B. They are aware of their responsibilities and are given time to perform them.
C. They do not inspect their own work.
D. Their inspections are monitored by qualified quality control personnel.

D6. Inspection Records

The inspection and testing procedure shall indicate what records and marks are used to document inspections. In-process inspections shall be verifiable until the final inspection of the piece. Inspection records shall clearly show what was inspected, the result of the inspection, and who performed the inspection.

D7. Calibration

A documented procedure shall be developed to calibrate and maintain inspection, measuring and testing equipment (IM&TE), in order to ensure that measurements are accurate, precise, and traceable to a national standard. The procedure shall define equipment calibration frequency and track all calibrations, adjustments, and repairs. The documented procedure should include provisions for:

A. A unique identifier for each piece of equipment.
B. An equipment list.
C. Service use for each piece of equipment, including the required precision for the types of inspections, measurements or tests made.
D. Calibration or adjustment instructions in accordance with the manufacturer’s recommendations.
E. Storage and handling of IM&TE to maintain accuracy and fitness for use.
F. The action to be taken when equipment does not meet the calibration requirements. This action includes disposition of the measuring device and an evaluation of the impact to product that was measured using the device.
G. Method of preventing inadvertent use of uncalibrated equipment where calibration is required.

For IM&TE that is damaged, dropped, knocked over or functioning improperly, the documented procedure shall include provisions for prominently marking or tagging such equipment to preclude usage and removing the equipment from service until it can be recalibrated, adjusted or repaired. Whenever the accuracy of IM&TE is in question, proactive calibration shall occur, regardless of manufacturer’s recommendations.
Appendix: Terms and Definitions

AISC. American Institute of Steel Construction.

ASNT. American Society for Nondestructive Testing.

ASTM. American Society for Testing and Materials.

Audit. See quality audit.

AWS. American Welding Society.

Calibration. The comparison of a measurement instrument/system of unverified accuracy to a measurement instrument/system of a known accuracy to detect any variation from the true value. For the purposes of this document, calibration includes the necessary adjustment of the instrument/system to provide accurate and precise measurements.

Coating. A material applied to the product surface to prevent corrosion in service and/or enhance the quality of the surface.

Competency Assessment. A system for measuring employee competency, typically to identify gaps in employee performance and to correct them through corrective action.

Control Plan. A document that identifies key manufacturing process steps, critical inputs and critical variables of such steps, and that defines process control strategies and tools.

Corrective Action. An action taken to identify and eliminate the root cause of an existing nonconformance, thereby preventing recurrence.

Corrective Measure. A measure taken to bring a nonconforming product or process into conformance with defined requirements, such as rework.

Cost of Poor Quality (COPQ). The costs incurred to provide a quality product or service. These are generally classified as failure costs (costs associated with defects found – further classified as internal or external, depending on whether defects are found before or after delivery), appraisal costs (costs to verify conformance to specification), and prevention costs (costs to minimize appraisal and failure costs).

Documentation (Documented). Material that provides information or evidence. Documentation may include written instructions, drawings, diagrams, charts, photographs, electronic media, specifications, and references to or excerpts from appropriate technical standards and codes.
Documented Procedure. A procedure that is established, documented, implemented, and maintained. The documentation provides information about how to perform an activity or process consistently. Documentation shall contain:

(a) The purpose of the procedure
(b) Process definition that includes steps required for completion
(c) Assignment of responsibility for performance
(d) Assignment of responsibility for review, revision, and/or approval of the procedure
(e) Identification of records that are generated
(f) For inspection and testing, frequency and documentation of the activities

Documented Training. Training in which there is a record of the course outline, a record of who attended, the date it was given, and the instructor who provides the training.

Drawings. Generally refers to shop drawings. In the context of special process requirements for detailing, refer to AISC terms and definitions.

Executive Management. The highest ranking official(s) in the company, e.g., CEO, President, General Manager, Owner, etc. Executive management has full authority in final decision making for all aspects of the QMS.

External Provider. The firm selling a product or service to another company.

Fabrication. A general term used in the structural steel industry that refers to manufacturing processes performed to prepare a single piece or assembly for erection. Examples of fabrication processes include, but are not limited to, thermal and mechanical cutting, assembly, welding, and coating.

Failure Modes and Effects Analysis (FMEA). A method designed to identify and understand potential failure modes and their causes, and the effects of failure on the system or end users, for a given product or service. The process includes assessment of risk associated with the identified failure modes, effects, and causes, in order to prioritize issues for corrective action.

Key Position. Executive management and positions in the external provider’s quality management system that manage work affecting quality, including but not limited to detailing, purchasing, quality assurance, quality control, or fabrication.

MTR. A material test report, or certificate of conformance, as defined in ASTM A6.

Nonconformance. An attribute of a product, process, or system that fails to meet defined requirements.

NDT. Non-Destructive Testing (also Non-Destructive Evaluation).
Objective Evidence. Data supporting the existence or verification of something. Records, statements of fact, or other information that are relevant to the audit criteria and are verifiable. In this context, it is evidence of whether the quality management system is functioning properly. Objective evidence may be obtained through observing performance of a task, inspecting or testing product, reviewing documentation, or interviewing personnel.

Overall Equipment Effectiveness (OEE). A measure of how effectively a manufacturing operation is utilized based on availability, productivity, and quality.

Preventive Action. An action taken to identify and eliminate the root cause of a potential nonconformance, thereby preventing it from occurring.

Procedure. See documented procedure.

Project Documents. Documents that communicate requirements for a product or service for a given project (or order), including but not limited to, original and revised contract documents, specifications, and drawings.

Purchasing Documents. The documents issued by the customer to define requirements for purchased products or services.

Quality Assurance (QA). The planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy given needs.

Quality Audit. A systematic, independent, and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

Quality Control (QC). The operational techniques and the activities that sustain a quality of product or services that will satisfy given needs; also, the use of such techniques and activities.


Quality Management System. A system to establish policy, goals, plans and resources to direct and control an organization with regard to quality.

Quality Record. A document that provides objective evidence of activities performed or results achieved.

Rework. Action taken on a nonconforming product to make it conform to the requirements.

RFI. A documented request for information or clarification, typically in relation to quality requirements.
**Special Process.** A process that Valmont® has identified as requiring validation to ensure that outputs conform to specification, and are therefore subject to special process requirements. Examples of special processes include, but are not limited to, welding, painting, galvanizing, detailing, and non-destructive evaluation.

**Specifications.** Written requirements, typically referenced by purchasing documents or drawings.

**SSPC.** The Society for Protective Coatings, formerly known as the Steel Structures Painting Council.

**Statistical Process Control (SPC).** A method of quality control which employs statistical methods to monitor and control a process. This helps to ensure that the process operates efficiently, producing more outputs that meet specification and reducing waste.

**Subcontractor.** See external provider.

**Supplier.** See external provider.

**Tier 1.** In general, a classification of external providers whose products become part of Valmont’s end product or whose products or services are central to Valmont’s output. This classification also incorporates other criteria based on risk assessment.

**Training.** See documented training.

**Value Stream Mapping.** A technique for mapping the value stream (the primary actions required to produce a product or service), typically to compare current state and future state.
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