

# Metfab Safety Manual

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## 1. Purpose and Scope

Metfab's goal as a fabricator is to consistently produce items meeting or exceeding the highest standards of quality. This manual assists us in achieving that quality goal.

This quality control manual is for the internal use of Metfab Toolworks, Inc. (Metfab). It is created to assure that the products of Metfab are created in accordance with high standards of quality. This manual may also be shown to customers of Metfab to let them know that Metfab believes and practices

This manual includes guidance on production process and internal workflow process. It does not include guidance on weld design, design control, or design review. This manual draws on a number of nationally promulgated specifications referenced but not included herein.

## 2. Quality System Operated by Personnel

Metfab's quality system is completely dependent upon the personnel operating within the framework of that quality system. Metfab employees are to be adequately qualified and sufficiently trained in their duties. Job functions, interrelationships and limits are to be completely understood by every member of the Metfab team. It is the obligation of each team member to seek guidance if job functions are unclear or contradictory.

The Metfab dedication to quality and safety has the full support of corporate management. Team members are required to make decisions based upon producing a quality product. Any potential shortfall in quality is to be brought to the attention of management immediately.

Metfab team members will be periodically trained in various disciplines in order to maintain proficiency and expand new abilities.

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## 3. Job Planning

Planning any job is the first step in ensuring a quality outcome. Job planning shall include consideration of the following:

- a) Personnel involved in the project
- b) Materials required for the project
- c) Resources required to complete the project
- d) Specifications governing the project
- e) Metfab's ability to complete the project safely, timely, and profitably.
- f) Consideration of required outside resources (subcontractors, rental equipment, etc.)

## 4. Facility and Resources

Metfab has a constantly changing ability to provide solutions based upon available resources and facilities. Part of the quality process requires the proper allocation of resources to a project to ensure a quality outcome. The resources allocated will include a combination of the following:

- a) Personnel (both production and administrative)
- b) Machines and workstations
- c) Facility square footage
- d) Capacity of the lighter or heavier duty machines
- e) Size of the largest fabrications possible given other constraints
- f) Typical items fabricated for other customers
- g) Precision levels attainable

A regular maintenance program is required to ensure that machinery and facility are working at designed levels of safety, accuracy and efficiency.

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## 5. Subcontracted Services

Metfab shall notify and obtain permission in writing from customers before using any subcontracted services.

Metfab shall have a system of quality assurance which covers subcontractors. For example, when selecting an outside welding inspector, copies of the inspector's certifications shall be obtained.

The level of supervision and control exercised over a subcontractor shall be commensurate with the criticality and risk of the assigned tasks. For example, a subcontracted welder needs to be monitored more closely than a subcontracted janitor.

## 6. Documentation of Quality Control

Metfab has a system of documentation which defines work quality. This system usually includes the following:

- a) Shop drawings approved for fabrication, provided by the customer.
- b) Specifications and procedures for the materials.
- c) Specifications for welding and other work to be performed.
- d) Work instructions.
- e) Handling instructions.

## 7. Quality Records

Metfab quality records may include, but are not limited to:

- a) Welder Performance Qualification Records
- b) Material certifications
- c) Non-destructive examination and other inspection reports
- d) Manufacturer test reports
- e) Mill test reports
- f) Records and documentation from subcontractors

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## **8. Materials and Parts Control**

The purchase of all materials, supplies and related parts used in the production process is done in a system designed to ensure the quality of such purchased items. Metfab must define situations where traceability is required for materials or consumables on a particular job or project.

The procurement system includes consideration of how materials are received, handled, and stored. Where necessary, consideration is given to how materials are identified upon receipt, inspected, and checked for conformity with specifications.

## **9. Welding and fabrication procedures**

The customer on a process-by-process basis shall define welding and other fabrication procedures in writing. Where deemed necessary, Procedure Qualification Records shall be created.

Welding procedures shall be available to welders at all times. Welders and other production personnel are directed to seek guidance whenever questions arise as to proper and safe procedures.

Welding procedures shall be qualified by an AWS Accredited Test Facility or other Accredited Welding Inspector. Other fabrication procedures shall be performed in accordance with governing specifications such that the resulting product is created in conformity with the authoritatively approved design.

## **10. Control of Production Consumables**

Part of the job planning process is the determination as to which base metals, bolts or attachments, filler materials, welding wire and gasses, paints and finishes, and other consumables are used.

Consumables shall be stored with a consideration as to their preservation and use suitability.

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## 11. Supervisory Personnel Requirements and Qualifications

Metfab's quality control system is designed to have adequate supervision and inspection from inside or outside authorities.

Fabrication and welding coordinators:

Such coordinators are Metfab personnel with experience and expertise required as appropriate for the circumstances of the job or project. Such coordinators are authorized to call on the experience of outside fabrication or welding resources as required. Additionally, such coordinators are required to bring to the attention of management any deficiencies noticed in welding or fabrication performance.

Currently at Metfab, coordinators are James Murray and Edward Hunecke.

Fabrication and welding inspectors:

Coordinators may designate inspectors on a job-by-job basis who are qualified to judge work product in terms of quality and procedural performance and safety. Such inspectors shall immediately notify the responsible coordinator if deficiencies are identified in fabrication procedure or welding performance.

The Metfab quality control system has provision for tracking which job functions and operations are performed by which qualified personnel.

## 12. Welder and Fabricator Performance Qualification

Metfab shall qualify all fabricators, welders and finishers for work to be performed. The qualification system encourages certifications in the case of welders, and appropriate experience and training for machine operators and painters.

One component of the job planning process is to consider the assignment of appropriately qualified personnel to individual project processes.

Metfab's performance qualification system requires that personnel be reviewed periodically as to skills obtained, maintained, and / or not yet achieved. Metfab maintains a log of welding certifications and other job qualifications.

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## 13. Inspection and Examination

Work product inspection is performed internally and / or by independent inspectors.

The quality control system requires that acceptance criteria be understood in the planning process. The planning process also defines the frequency and level of inspection to be performed.

## 14. Nonconformance

In the potential situation where product quality (as defined by the acceptance criteria in section 13) is not attained, this quality control system is designed to prevent the use of non-conforming products in Metfab's final products. A nonconformance situation could occur, but is not limited to the following situations:

- a) Base metal identification and inspection before fabrication or welding is not performed, or,
- b) Required preparation of the base metal or consumables is not properly followed prior to fabrication, or,
- c) Required welding or fabrication procedure is not followed, or,
- d) Finishing or assembly procedures are not properly completed, or,
- e) Products do not meet acceptance criteria.

Metfab requires that the company owner be notified in the situation where any nonconforming work has been performed. Only the owner has the authority to devise a remediation scheme for such nonconformance.

Available remediations for nonconforming work include the following:

- a) Deviation ó accept the product as it is.
- b) Rework ó correct the product to bring it to full compliance.
- c) Repair ó modify the product to bring it to acceptable quality, which may not be in full compliance with specification or acceptance criteria.
- d) Scrap ó discard the nonconforming product and remake it.

Metfab's quality control system require that any nonconformance situation be identified, investigated and analyzed so that the root cause of the problem is addressed.

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## 15. Customer Satisfaction

A customer who receives quality products in a timely manner is usually a satisfied customer. Metfab monitors customer satisfaction for the purpose of identifying and correcting deficiencies in quality or timeliness.

### Employee Statement

I have received a copy of the Metfab Procedures Manual. I read it and understand its contents. If I encounter safety problems in the course of my work, which were not covered by the manual of my supervisor, I will discuss them with my supervisor.

I understand that compliance with Metfab procedures is a condition of my employment.

I am aware that this signed page will be placed in my personnel file.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Employee Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Supervisor Signature