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**Project** **Quality Metrics Template**

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**Quality Metrics**

**<Project Name>**

**Company Name**

**Street Address**

**City, State Zip Code**

**Date**

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# Introduction

Quality metrics are a key component of an effective quality management plan and are the measurements used in ensuring customers receive acceptable products or deliverables. Quality metrics are used to directly translate customer needs into acceptable performance measures in both products and processes. Project managers must be able to assess the progress, efficiency, and performance of their projects and metrics are the means which allow project managers to do this. However, it is important to note that metrics must be established in an effort to directly improve the product or processes involved in the project. They must be attributable to an established goal, threshold, or customer requirement or else they provide no value.

ABC Corporation has approved the Beta Tool project which requires the design, building, testing of the Beta Tool to be used with Argo Tooling Company’s proprietary fastening device CamBolt. In accordance with the Beta Tool Quality Management Plan, ABC Corp. will use various metrics in order to ensure efficient processes are established and that the product meets the customer requirements for delivery. All metrics have been reviewed and approved by internal executive leadership and project sponsor as well as the customer, Argo Tooling Co.

# Metrics

This section should list the metrics chosen for this project and a description of each. These descriptions should include an explanation of how the metric applies to the quality of the product or process it is being used to measure. Additionally, any thresholds or limits should be clearly stated in this section. Metrics should always be clear, measurable, controllable, and reportable.

Based on customer product requirements, internal process standards, and applicable industry standards, the following metrics have been established for the Beta Tool Project. These metrics have been reviewed and approved internally and with the customer, Argo Tooling Co.:

1. **Tensile Strength**: The Beta Tool will be used in various industrial environments under high material stress loads. Based on anticipated customer usage and industry tooling standards, it has been determined that the tensile strength of the Beta Tool must meet or exceed 500 mega-pascals (MPa). Tensile strength will be measured for each prototype of ABC Corp.’s tensile bench. The results will be verified by ABC Corp.’s Material Testing Manager and presented to stakeholders in the monthly Beta Tool Quality Management Review.
2. **Shear Strength**: The Beta Tool will be subject to potentially high stress torque loads in various applications. Based on anticipated customer usage and industry tooling standards, it has been determined that the shear strength of the Beta Tool must meet or exceed 375 MPa. Shear strength will be measured for each prototype on ABC Corp.’s shear stress bench. The results will be verified by ABC Corp.’s Material Testing Manager and presented to stakeholders in the monthly Beta Tool Quality Management Review.
3. **Customer Satisfaction**: The Beta Tool is being developed for usage by Argo Tooling Co. technicians. Each prototype will be tested by a panel of Argo technicians on various criteria. Argo technicians will be asked to rate the Beta Tool on a scale of 1 to 10 for each criteria. The scores will then be calculated to determine a total average score. Customer satisfaction much be greater than or equal to 8 out of 10 for each criteria with no individual score lower than a 7. ABC Corp. will then solicit feedback from Argo technicians on areas for improvement.
   1. Customer Satisfaction Criteria: Comfort, Ergonomic Functionality, Adjustability, Aesthetics, Size, Dexterity
4. **Material Scrap:** In order to minimize costs and reduce waste, ABC Corp. has internally established metrics for measuring and controlling material scrap for its tool manufacturing efforts. The Beta Tool Project will be subject to internal guidelines regarding material scrap. The Beta Tool manufacturing process must result in material waste below 1% of the total material used in the manufacturing of one tool. Waste is defined as material that cannot be re-used or re-allocated for another purpose. Waste will be calculated for each prototype. No manufacturing process will be approved unless it yields less than 1% of waste material per unit manufactured. Only once this has been achieved will the process be approved for operations.
5. **Product Defect Rate:** In order to minimize costs, reduce waste, and achieve consistent quality, ABC Corp. has internally established metrics for measuring and controlling product defects. The Beta Tool Project will be subject to internal guidelines regarding product defects. The approved manufacturing process must be repeatable, produce a Beta Tool product which meets previous quality metrics, and incurs a defect rate less than one item per every five hundred. Product defects result in wasted costs for manufacturing personnel and equipment, material waste, and re-work. In order to minimize the impact of these costs all Beta Tools will be measured against approved specifications and metrics. Each tool must conform to the metrics herein while also meeting product specifications within the allowable tolerances contained in the project scope.

|  |  |  |  |
| --- | --- | --- | --- |
| **Metric** | **Standard** | **Frequency** | **Report** |
| Tensile Strength | ≥500 MPa | Per prototype | Monthly Quality Management Review (QMR) |
| Shear Strength | ≥ 375 MPa | Per prototype | Monthly QMR |
| Customer Satisfaction | 8/10 or higher with no individual score below 7 | Per prototype | Monthly QMR |
| Material Waste | < 1% based on total material used per tool | Per prototype | Monthly QMR |
| Product Defect Rate | < 1 out of 500 | Per production of 500 tools | As achieved |

# Metrics Measurement and Data Collection

This section should describe in detail how metrics measurements will be taken and what will be done with the data. These measurements are key to the success of the product and project and there must be clear documentation on how the data will be used.

As each Beta Tool prototype is completed the project’s quality manager will measure the tool against the customer specifications contained in the project scope. These specifications pertain to the specific dimensions of the tool and its total weight. The quality manager will ensure that the prototype falls within the allowable specification tolerances and document the findings on the quality inspection form contained in the Project Quality Management Plan. Additionally, the manufacturing line manager and Project Manager will calculate material waste by determining the percentage of waste as compared to the total amount of material used for the tool. The Project Manager will document these findings and consolidate them to present at the Quality Management Review.

Once the tool is determined to meet the customer specifications, it will be submitted to the Argo Technical Manager where Argo technicians will test the tool for 2 days. Upon completion of testing the Argo Technical Manager will return the tool to the ABC Project Manager along with the completed customer satisfaction forms contained in the Project Quality Management Plan.

Once the tool is determined to meet customer satisfaction requirements the Project Manager will submit the tool to the Materials Testing Manager where it will undergo tensile and shear strength tests in the Material Lab. The Materials Testing Manager and Project Manager will verify and document all findings and consolidate the data for presentation at the Quality Management Review.

Once all measurements are completed for each prototype, the Project Manager, Quality Manager, and Project Team will meet to review and compile data and develop their recommendations based on the findings. If any of the metrics have not been satisfied, the Project Manager will include recommendations for correcting the metric in the Quality Management Review. This may be a small change to a process parameter or consist of a larger scale process or product quality improvement initiative.

# Quality Management Review

This section includes a description of what will be included in the Quality Management Review as well as the frequency of the meetings and who will participate. Some of this information may also be included in the Quality and Communications Management Plans.

The Beta Tool Quality Management Reviews (QMRs)will be scheduled on a monthly basis throughout the project lifecycle. The Project Manager is responsible for scheduling the meetings and ensuring a room is reserved as well as all necessary audio/visual support. The Project Manager is also responsible for ensuring all required attendees are notified in advance of the meeting.

Required attendees include the Beta Tool Project Team, ABC Corp. Materials Testing Manager, ABC Corp. Quality Manager, Beta Tool Project Sponsor, ABC Corp. Manufacturing Manager, Argo Co. Technical Manager, and Argo Co. Customer Representative. Other stakeholders may be invited at the Project Manager’s discretion.

The QMR will consist of a presentation of all metrics and specifications measurements and a comparison to previous prototype iterations to show progress. Cumulative data will also be presented to provide a status of process and product repeatability. For any metrics which did not meet the established standards, the Project Manager will present recommended course(s) of action to correct the fault(s). The Project Sponsor is the approving authority for implementation of any recommended course of action or corrective measures.

Based on the QMR results and corrective measures, the Project Manager is responsible for updating all project documentation, submitting any changes through the change control process, and communicating changes to all stakeholders.

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