QUALITY MANAGEMENT

Key Revision Facts: GCSE Technology

Quality control

Quality control (QC) is a process through which a business seeks to ensure that product quality is maintained or improved. Quality control involves testing units and determining if they are within the specifications for the final product. Products that are outside of the tolerance will be rejected or re-worked. Some quality control techniques are

- **Inspection** is a critical part of measuring quality, and for small operations, random product testing can be an effective technique for large-volume production. The inspection process can include:
    - Visual Inspection
    - Inspection using Ultrasound or x-rays
    - Weight checking
    - Dimensional accuracy checking using a go / no go fixture
    - Dimensional accuracy checking using a depth stop
    - Dimensional accuracy checking by selecting correct laser settings
- **Failure testing** where the product is tested to its limits and beyond to evaluate where it will stop functioning as intended. These usually include stressing the product's mechanical properties such as material strength, elasticity, and impact resistance. Tests for vibration and temperature might also be conducted.

Quality Assurance

Quality assurance (QA) refers to the implementation of well-defined standard practices and methods. It is a pro-active quality process. This process is controlled and determined at the management level. Quality assurance focuses on process checklists, process standards, project audits, methodology, and development procedures.

What are the Differences between Quality Assurance and Quality Control?

The difference between Quality Assurance and Quality Control is that the Quality Assurance activities are conducted **during** the product development. Quality Control activities are performed **after** the product has been produced.

Tolerance

“Tolerance” in engineering and manufacturing is the extent by which a value is permitted to vary. Specifying tolerance defines the acceptable limits of variance required for a particular project. For example, if a project requires pipes of 12.2m in length, the specified tolerance, or allowable variation from that value, may be ±100mm.

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VERSION INFORMATION

Date	Arthur	Comment
13-Mar-2021	Andrew Seaford	Initial release.