SOP: Defect Classification and Acceptance Criteria Guidelines

This SOP provides comprehensive **defect classification and acceptance criteria guidelines** to standardize the identification, categorization, and evaluation of defects in products or materials. It defines the types and severity levels of defects, establishes clear acceptance limits, and sets procedures for inspection and decision-making to ensure quality control and compliance with industry standards. The guidelines aim to enhance product reliability, reduce rework and waste, and maintain customer satisfaction by ensuring consistent quality assessment and defect management throughout the production process.

1. Purpose

To define standardized criteria and methods for classifying, evaluating, and accepting or rejecting defects in products or materials to maintain consistent quality and compliance.

2. Scope

This SOP applies to all products/materials subject to inspection within the production process and is applicable to quality assurance, quality control, and production staff.

3. Definitions

Term	Definition
Defect	An imperfection or nonconformance in material, design, manufacture, or workmanship.
Major Defect	A defect likely to result in product failure or to reduce usability or safety.
Minor Defect	A defect that does not affect usability or function but may affect appearance or aesthetics.
Critical Defect	A defect that is hazardous or unsafe, or results in legal noncompliance.
Acceptable Quality Level (AQL)	The maximum number of defects allowed during random sampling inspection for batch acceptance.

4. Defect Classification

Class	Description	Examples
Critical	Defects causing hazardous or unsafe conditions; non-compliance with legal requirements	Electrical shock risk, toxic material, missing child-safety feature
Major	Defects likely to result in failure or significantly reduce usability/function	Non-functional part, major visual flaw, leaking container
Minor	Defects not affecting function but impacting aesthetics or minor details	Small scratch, light discoloration, minor cosmetic blemish

5. Acceptance Criteria

- **Critical defects:** 0 accepted per batch; any presence causes batch rejection.
- **Major defects:** Accepted up to maximum AQL (typically 2.5%) per batch.
- **Minor defects:** Accepted up to maximum AQL (typically 4.0%) per batch.

6. Procedures

1. **Inspection:** Perform sampling inspection according to company or industry standard.
2. **Identification:** Log all observed defects and classify as critical, major, or minor.
3. **Evaluation:** Count defects and compare against established AQL for each category.
4. **Decision-making:**
    - If critical defect found: **reject batch**.
    - If major/minor defects exceed AQL: **reject batch** or rework.
    - If within AQL: **accept batch**.
5. **Documentation:** Record inspection results, defect classifications, and decisions for traceability.

7. Responsibilities

- **Quality Control (QC):** Conduct inspections, classify, and record defects.
- **Production Team:** Implement corrective actions for rejected batches.
- **QA Manager:** Review inspection records and approve batch release decisions.

8. References

- ISO 2859-1 Sampling Procedures for Inspection by Attributes
- Company Quality Assurance Policy

9. Revision History

Version	Date	Description of Change	Approved by
1.0	2024-06-01	Initial Release	QA Manager