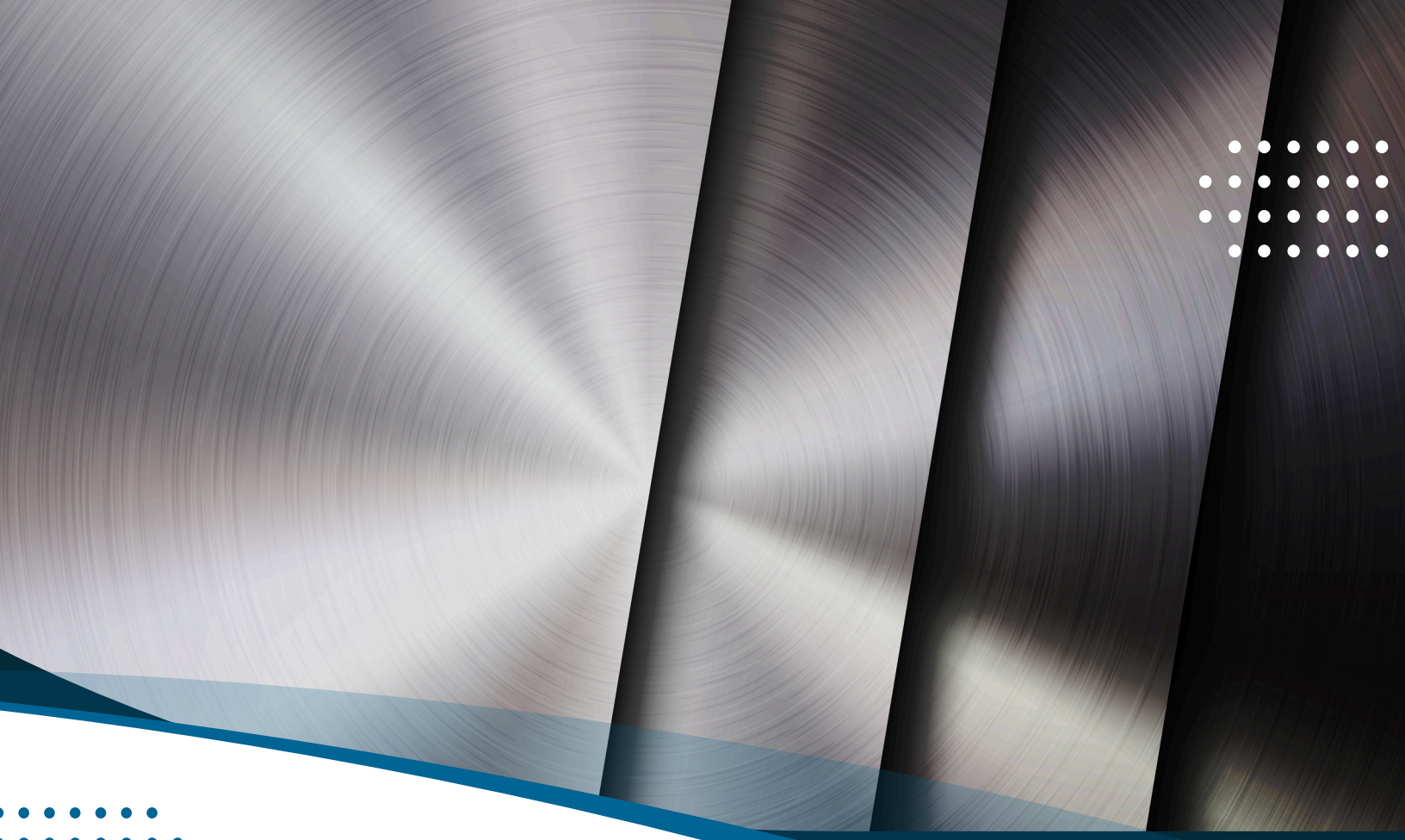


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Metal Finishing Quality & Thickness Checklist

A Practical Guide for Engineers & Quality Teams

Purpose of This Checklist

This checklist is designed to help engineering, quality control, and procurement teams ensure consistent, compliant, and high-quality results for anodized and plated metal parts. By following these steps, teams can reduce defects, prevent rework, and verify that metal finishing processes meet performance and durability requirements.

This guide covers:

- Thickness measurement methods
- Pre-inspection and in-process quality control
- Corrosion-resistant surface treatment considerations

Section 1:
Pre-Inspection Checklist (Before Finishing)

Before parts enter anodizing or plating, verify the following:

□ Base material grade matches specification
□ Material certifications reviewed and approved
□ Parts are free from oil, debris, and surface contamination
□ Dimensional tolerances confirmed prior to finishing
□ Surface condition suitable for specified finish
□ Threaded or masked areas are clearly identified
□ Customer specifications and drawings reviewed
□ Applicable industry standards identified (ASTM, ISO, MIL, etc.)

Pre-inspection helps catch issues early, preventing costly delays and rejected batches later in the process.

Section 2:
Thickness Measurement Planning

Confirm that thickness requirements are clearly defined and measurable:

□ Required coating thickness range documented
□ Measurement method selected based on coating type
□ Tolerances account for base material dimensions
□ Sampling plan defined (per part, per batch, or per lot)
□ Acceptance criteria clearly stated

Common Thickness Measurement Methods

□ Micrometer or caliper comparison (pre- and post-finish)
□ X-ray fluorescence (XRF) for plated coatings
□ Coulometric testing for anodizing and precision verification
□ Eddy current testing where applicable

Choosing the correct method ensures accurate verification without unnecessary damage or delays.

Section 3:
In-Process Quality Control

During finishing operations, verify the following controls are in place:

□ Bath chemistry monitored and logged
□ Process parameters documented and controlled
□ Coating thickness checked at defined intervals
□ Adhesion and coverage visually verified
□ Nonconforming parts identified and segregated
□ Corrective actions documented when required

In-process QC reduces the risk of full-batch failures and unexpected downtime.

Section 4:
Corrosion-Resistant Surface Treatment Selection

Ensure the selected surface treatment matches the application environment:

□ Operating environment identified (indoor, outdoor, chemical exposure, humidity)
□ Required corrosion resistance level defined
□ Electrical conductivity requirements considered
□ Cosmetic requirements reviewed
□ Compatibility with downstream processes verified
