

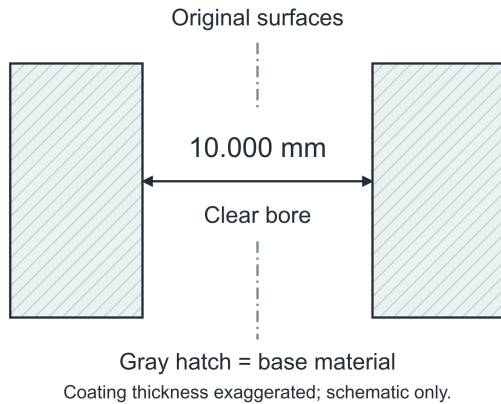
Surface finish & coatings

Treat texture, appearance and coating requirements as separate decisions.

DESIGN INTENT Deposits shrink bores and grow outside diameters.

01 Before: machined bore

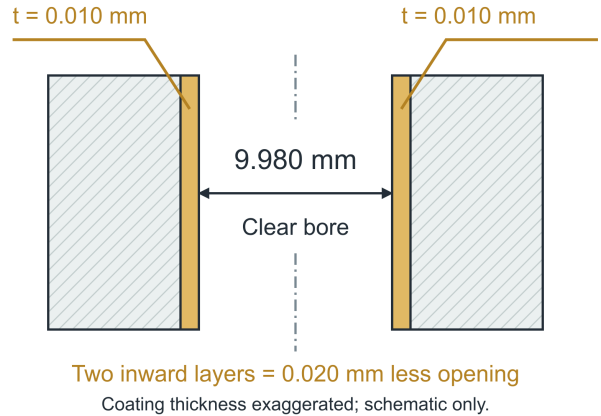
SECTION / IDEAL UNIFORM DEPOSIT



Initial diameter = 10.000 mm

02 After: inward deposit on both walls

SECTION / IDEAL UNIFORM DEPOSIT



Finished diameter = 9.980 mm

WORKED EXAMPLE / mm

Bore: $D_{\text{final}} = D_{\text{initial}} - 2t$ | Outside diameter: $+ 2t$

$10.000 - (2 \times 0.010) = 9.980 \text{ mm}$

03 Separate texture from looks

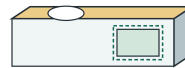
PARAMETER + UNITS



A process name or cosmetic sample is not a roughness value. State parameter and units where texture affects function.

CAD: mark functional and cosmetic zones.

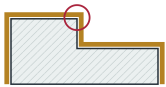
04 Show what stays uncoated



Masking keeps selected surfaces free of a coating. Identify critical bores, threads, contacts and datum features; define mask boundaries.

CAD: mark no-coat and contact-restriction zones.

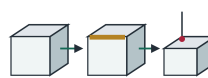
05 Review edges and recesses



Local buildup depends on geometry and process access. The uniform $2t$ example does not predict coating distribution.

CAD: agree actual allowance before sizing fits.

06 Define the complete finish



State process specification/revision, required records and final size. Digital Machine coordinates outside special processes; color is not equivalence.

CAD: call out the finish and acceptance condition.

WHAT THIS DOES NOT PROVE

Here t is buildup beyond the original surface, not automatically total coating thickness. Anodizing also penetrates the substrate; use process-specific growth data.

BEFORE RELEASE Protect fit, loads, sealing and required material sections when changing geometry.

- ☐ Separate cosmetic zones from functional surfaces.
- ☐ Specify coating type and governing revision.
- ☐ State pre- or post-finish dimensional acceptance.

- ☐ State roughness parameter and units.
- ☐ Identify masking and rack/contact restrictions.
- ☐ Request required process certificates and inspection records.

Illustrative geometry; not to scale. No universal shop limits or structural approval. Drawing and approved process requirements govern.