

FREE BUYER'S ENGINEERING GUIDE

Stop Guessing Surface Finish

Choose the right physical VDI 3400 or SPI reference plaque before approving an injection mold.

A–F product guide • EDM / laser / etching • PP / ABS / PC / PC+ABS

Compare real texture, roughness, gloss and material response in your hand — not from a screen.

VDI3400.com | ENGINEERING REFERENCE PLAQUES

Independent product guide. Brand and standard names are used only to identify recognized industry references.

One surface. Six better ways to approve it.

A digital rendering cannot reproduce tactile feel, directional reflection, molded-part gloss or the way a texture changes across PP, ABS, PC and PC/ABS. The A–F range helps engineers, designers, toolmakers and purchasing teams compare physical references before steel is textured.

Choose by the decision you need to make

Need	Recommended product	Why
Full metal VDI 3400 comparison	A — Metal VDI plaque	Durable shop and toolroom reference across VDI 12–45.
See molded appearance on common polymers	B — Plastic VDI plaque	Closer to the visual/tactile decision made on injection-molded parts.
Carry a compact reference	C — Portable metal/plastic scale	Fast supplier, design-review and factory-floor comparison.
Evaluate transparent-material response	D — Transparent plastic VDI plaque	Shows how texture changes transmission, haze and appearance.
Compare SPI finishes on molded plastic	E — Plastic SPI scale	Black and transparent material versions demonstrate material-dependent appearance.
Inspect SPI finishes directly on steel	F — Steel SPI plate set	Twelve individual steel samples for toolroom finish comparison.

What these plaques do — and do not do

They reduce specification ambiguity and support physical comparison. They do not replace a licensed VDI document, an agreed SPI classification source, production-resin trials, a calibrated roughness instrument or written customer approval.

A. Metal VDI Texture Plaque



Product photo from VDI3400.com • 200 × 85 × 5 mm

Why buyers choose it

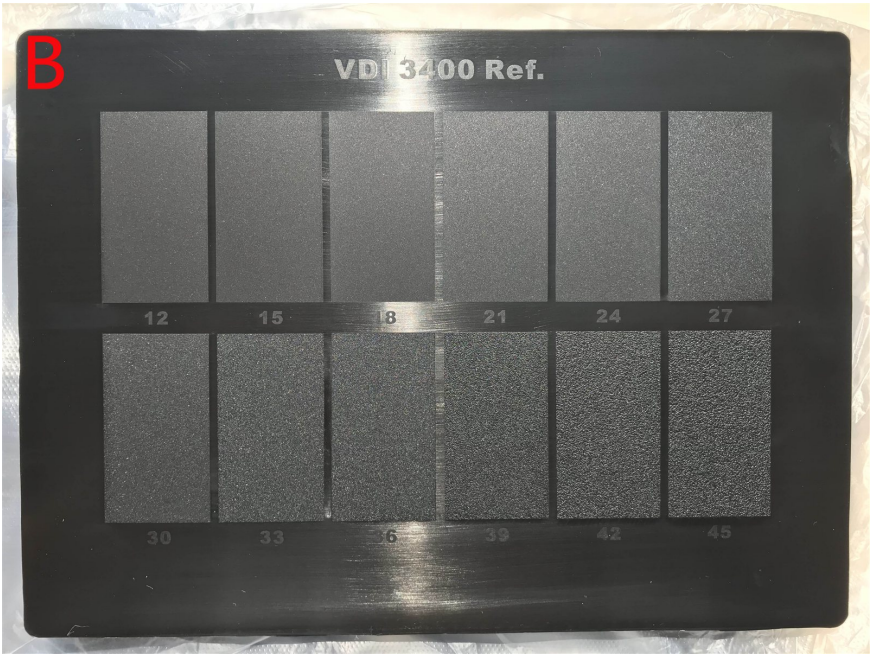
A robust metal reference covering VDI 12 through VDI 45. Best for toolrooms, EDM/laser/etching discussions and supplier alignment where a durable physical scale is needed.

Use it to	Confirm before ordering
Compare cavity or insert finish by sight and touch; align roughness target before decorative texturing; support incoming/toolroom discussions.	Target grades, plate material and finish route; whether a measurement report or serial-controlled master is required.

Commercially safe use

Use this plaque as a physical comparison and communication tool. For contractual inspection, agree the master plaque ID, material, surface condition, measurement method and acceptance tolerance. A comparison plaque is not automatically a traceable calibration artifact or third-party certification.

B. Plastic VDI Surface Plaque



Product photo from VDI3400.com • 200 × 145 × 3.5 mm

Why buyers choose it

A molded-plastic VDI comparison plaque for appearance conversations on PP and ABS and for screening similar opaque engineering plastics. It exposes the practical difference between a metal surface reading and a molded visual result.

Use it to	Confirm before ordering
Compare molded gloss and tactile progression; brief industrial designers; shortlist grades before a production-resin plaque trial.	Exact plaque resin, color and molding history. Do not assume the gloss will transfer unchanged to another PP/ABS grade or color.

Commercially safe use

Use this plaque as a physical comparison and communication tool. For contractual inspection, agree the master plaque ID, material, surface condition, measurement method and acceptance tolerance. A comparison plaque is not automatically a traceable calibration artifact or third-party certification.

C. Portable Metal & Plastic VDI Finish Scale



Product photo from VDI3400.com • 130 × 30 × 4 mm

Why buyers choose it

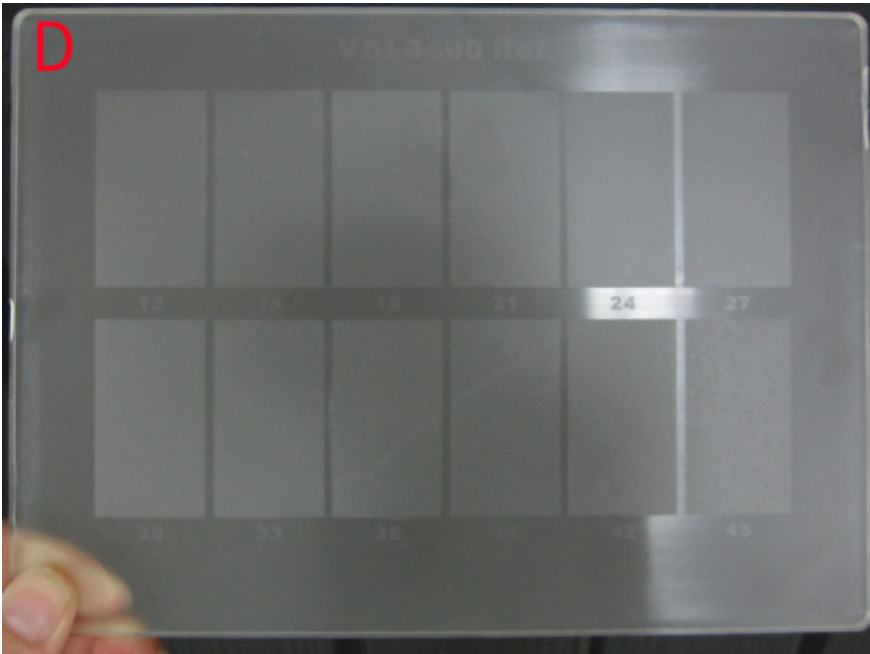
A compact VDI 12–45 scale designed for travel between design office, tool shop, molding floor and customer review. The paired metal/plastic concept helps teams see why the same nominal grade can look different after molding.

Use it to	Confirm before ordering
Fast side-by-side decisions at supplier visits; identify a target zone; avoid approval from compressed phone photos alone.	Whether your set includes both reference materials, the grade markings required and protective storage for long-term comparison.

Commercially safe use

Use this plaque as a physical comparison and communication tool. For contractual inspection, agree the master plaque ID, material, surface condition, measurement method and acceptance tolerance. A comparison plaque is not automatically a traceable calibration artifact or third-party certification.

D. Transparent-Material VDI Plaque



Product photo from VDI3400.com • 200 × 145 × 3.5 mm

Why buyers choose it

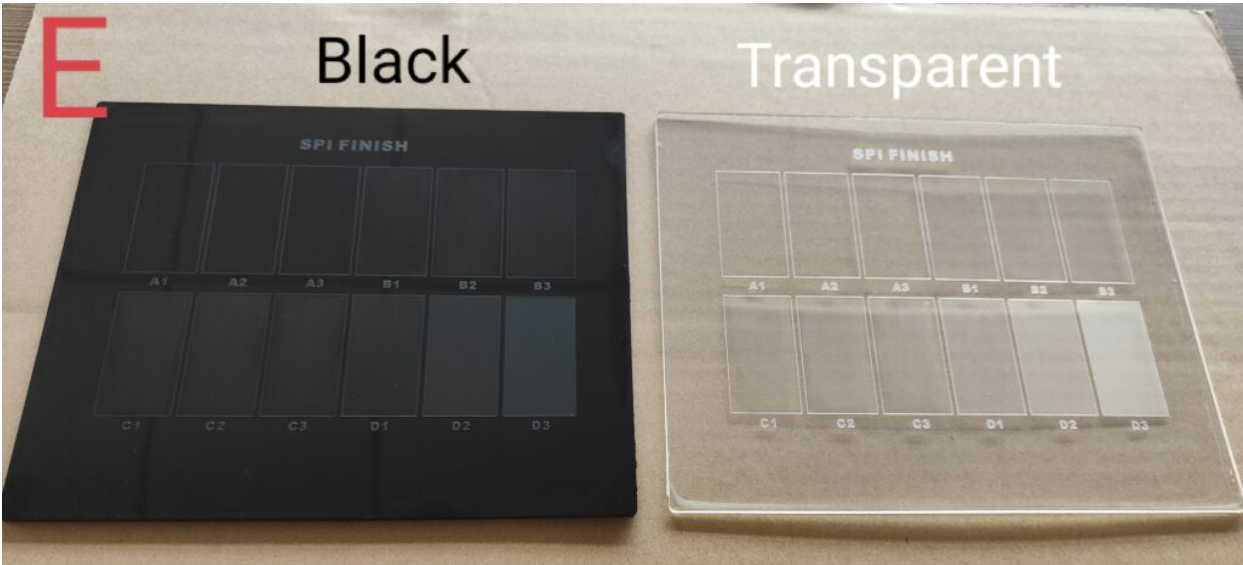
A transparent-plastic plaque for seeing how surface finish changes transmission, haze, light diffusion and perceived depth. Useful for lens-adjacent housings, lighting features and translucent covers — not a substitute for optical certification.

Use it to	Confirm before ordering
Screen texture direction and diffusion; communicate appearance intent; select grades for production-grade optical and molding trials.	Exact polymer and thickness. PC, PMMA and other clear materials can respond differently; optical performance must be tested in the production grade.

Commercially safe use

Use this plaque as a physical comparison and communication tool. For contractual inspection, agree the master plaque ID, material, surface condition, measurement method and acceptance tolerance. A comparison plaque is not automatically a traceable calibration artifact or third-party certification.

E. Plastic SPI Finish Scale



Product photo from VDI3400.com • 200 × 145 × 3.5 mm • black and transparent material versions

Why buyers choose it

A molded-plastic SPI finish reference that deliberately separates material appearance: a black version for opaque visual contrast and a transparent version for transmission/reflection effects. This is the material-response option in the SPI range.

Use it to	Confirm before ordering
Compare how SPI-style polish and texture appear in molded plastic; review cosmetic intent with designers; avoid treating a steel-only sample as the final molded appearance.	Choose black, transparent or both. Confirm resin family, thickness and the included A/B/C/D finish groups. Specify the exact version on the purchase order.

Commercially safe use

Use this plaque as a physical comparison and communication tool. For contractual inspection, agree the master plaque ID, material, surface condition, measurement method and acceptance tolerance. A comparison plaque is not automatically a traceable calibration artifact or third-party certification.

F. Steel SPI Finish Plate Set



Product photo from VDI3400.com • 25 × 48 mm each • complete 12-piece steel set

Why buyers choose it

A steel SPI finish set covering the familiar A1–A3, B1–B3, C1–C3 and D1–D3 progression. Unlike Product E, Product F is a direct steel-surface comparison set for moldmakers, polishers and inspection teams.

Use it to	Confirm before ordering
Compare polishing routes on steel; communicate tool-finish expectations; keep an approved shop reference separate from molded-part appearance approval.	Steel grade, process labels, set completeness, protective case and whether measured roughness data is required for your quality system.

Commercially safe use

Use this plaque as a physical comparison and communication tool. For contractual inspection, agree the master plaque ID, material, surface condition, measurement method and acceptance tolerance. A comparison plaque is not automatically a traceable calibration artifact or third-party certification.

Engineering data behind a useful plaque

A plaque becomes commercially valuable when every team uses the same grade, master ID, material and measurement definition. The familiar VDI comparison progression is shown below for buyer orientation.

VDI grade	Indicative Ra (µm)	VDI grade	Indicative Ra (µm)
12	0.40	30	3.20
15	0.57	33	4.53
18	0.80	36	6.40
21	1.13	39	9.05
24	1.60	42	12.8
27	2.26	45	18.1

Important measurement boundary

The Ra values are a commonly used VDI comparison convention. Do not convert them automatically into chemical-etch or laser feature depth. Ra is an average profile amplitude; engineered texture depth is a separate geometric measurement. Contractual acceptance should state the instrument, filter/cutoff, evaluation length, trace direction and locations.

EDM, etching and laser: same target, different signature

- EDM can create a controlled stochastic finish. Equipment from Swiss manufacturer AgieCharmilles is a recognized production reference, but machine capability is not product certification.
- Chemical etching can produce matte VDI-style grains and decorative textures. Mold-Tech is a recognized proprietary texture reference; its pattern codes are not a public VDI conversion system.
- Five-axis laser texturing can reproduce controlled digital patterns and local depth. Roughness alone is insufficient; spacing, orientation, homogeneity and feature depth also matter.

No supplier or brand endorsement is implied. Brand names appear only as factual industry references; this guide provides no outbound brand links.

Material and gloss: why the plastic plaque matters

A metal plaque defines the tool-surface conversation. A plastic plaque defines the molded-appearance conversation. Use both when the cosmetic risk is high.

Material	Typical appearance risk	Best plaque path
PP	Grade, MFR, fillers, color and molding window can shift replication and gloss.	Start with B or C; confirm on the exact production PP.
ABS	High aesthetic capability, but weld lines, flow and pigment can cause local gloss change.	B for VDI; E for SPI-style molded appearance.
PC	High optical response can expose small texture and process variation; moisture control matters.	D for transparent VDI response; E-transparent for SPI response.
PC/ABS	Blend ratio and grade can range from high-quality gloss to designed low gloss.	B/E for selection, then validate the exact production grade.

How to specify gloss legally and credibly

- Measure molded, uncoated plastic with ASTM D523 when that method fits the part; state the geometry and reading direction.
- Use 60° GU as the general comparison reading, adding 85° for very matte surfaces or 20° for high-gloss differentiation when agreed.
- Record resin grade, color, lot, drying, mold/melt temperature, speed, packing, gate distance and location.
- Approve golden and boundary plaques. Never promise a molded GU value from VDI grade alone.

Sales-safe wording

Recommended: “Physical reference plaque for visual and tactile comparison; production result requires validation in the customer’s resin, color, tool and molding window.” Avoid: “Certified gloss guaranteed for every PP/ABS/PC part.”

From sample to purchase order

A five-minute selection form prevents weeks of argument after the mold is textured.

Ask the buyer	Record on the inquiry / PO
What must be approved?	Tool steel roughness, molded appearance, transparent response, SPI polish, or all four.
Which product?	A, B, C, D, E-black, E-transparent, E-both, or F 12-piece set.
Which material?	Exact production resin manufacturer, grade, color and fillers/additives.
Which finish range?	VDI grades required or SPI groups required; identify any excluded grades.
How will it be accepted?	Visual/tactile master, Ra measurement, feature depth, gloss GU, or combined method.
Is traceability required?	Master ID, serial, inspection report, calibration status and replacement interval.

Recommended validation sequence

- 1. Select the physical reference plaque and target zone.
- 2. Freeze the exact resin/color and production molding window.
- 3. Texture a representative trial insert or plaque.
- 4. Measure roughness/depth and map gloss near gate, mid-flow and end-of-fill.
- 5. Approve nominal and boundary samples under controlled lighting.
- 6. Release the final drawing and control plan using the signed master ID.

READY TO COMPARE REAL SURFACES?

[View plaque options at VDI3400.com](#) • [Send a technical inquiry](#)

Standards, references and legal boundary

This guide is designed to support lawful sale and engineering use of physical comparison plaques. It summarizes public catalogue information and original VDI3400.com product photography; it does not reproduce paid standard text, proprietary texture artwork or third-party sample books.

Measurement and standards references

- [VDI 3400 official catalogue entry](#) — obtain the licensed guideline for contractual use.
- [ISO 21920-1:2021](#) — profile surface-texture indication in technical documentation.
- [ASTM D523-25](#) — specular gloss measurement for nonmetallic specimens.
- [ISO 2813:2014](#) — gloss method for paints/varnishes; its stated scope is non-textured coatings on plane opaque substrates.

Industry process references

AgieCharmilles equipment is referenced as a recognized Swiss EDM and laser-texturing production platform. Mold-Tech is referenced as a recognized proprietary chemical-texture library. Their names do not certify these plaques, and no affiliation, sponsorship or endorsement is claimed. Detailed proprietary patterns, tables and artwork are intentionally excluded.

Product and photography statement

A–F product descriptions and images are sourced from VDI3400.com. Product configuration, resin, dimensions, included grades, surface route and documentation must be confirmed in the written quotation and purchase order. Images are illustrative; lighting and screen reproduction cannot replace physical review.

Revision control

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**SELECT A PLAQUE • CONFIRM THE MATERIAL • APPROVE THE REAL
SURFACE**
VDI3400.com