

Industrial Designer Toolkit

Interview Prep · Portfolio Critique · Process Templates

CMF Strategy · Materials Reference · Trend Report

13

Interview
Questions

8

Materials
Profiles

6

Process
Templates

6

CMF
Trends

BrahmWorks.

brahmworks.com · brahm.design

CONTENTS

01	Interview Prep	STAR method, 13 questions, answer frameworks
02	Portfolio Critique	21-point checklist across 5 categories
03	Design Process Templates	HCD map, research plan, design brief, CMF strategy
04	Material Reference	8 industrial materials with specs and use cases
05	CMF Trend Report	6 key directions shaping ID in 2025
06	Resources	Books, tools, communities, and BrahmWorks

Landing the Interview

Industrial design interviews test more than your portfolio — they probe your design thinking, communication, and professional maturity. This section gives you frameworks and model answers for the questions that come up in every ID interview.

THE STAR METHOD

S Situation	Set the context. What project? What constraints?
T Task	What was your specific role and responsibility?
A Action	What steps did you take? Walk through decisions.
R Result	What was the outcome? Quantify where possible.

DESIGN PROCESS

Q1. Walk me through your design process from brief to handoff.

Framework: Cover each phase: Research → Define → Ideate → Prototype → Test → Refine. Show you adapt depth to context — a CMF studio cares about finish exploration, a startup cares about velocity.

Q2. How do you balance aesthetics with manufacturability?

Framework: This is about DFM. Walk through draft angles, parting lines, tooling costs. Show that you see engineers as co-creators, not gatekeepers.

Q3. Describe how you handle ambiguity at the start of a project.

Framework: Show your toolkit: stakeholder interviews to align on success criteria, HMW framing, explicit non-goals, research to shrink the unknown.

PORTFOLIO

Q1. Tell me about your most challenging project.

Framework: Context → specific challenge → decision-making walkthrough → outcome AND learning. Practice this in under 3 minutes.

Q2. Which project are you least satisfied with — and why?

Framework: Be honest. Name it, say what you'd change, and show why. This builds trust.

Q3. How do you present design thinking vs. just outcomes?

Framework: Show your "ugly work" — early sketches, failed prototypes, whiteboard sessions. The thinking between frames separates good from great.

BEHAVIORAL

Q1. Tell me about a time you disagreed with a client or stakeholder.

Framework: Show you listened first, backed your position with data, and found a collaborative path. Never say you "won."

Q2. How do you handle feedback that feels personal or off-base?

Framework: Separate the design from yourself. Ask clarifying questions: "What problem are we solving with this change?" Treat all feedback as data.

Q3. Describe working cross-functionally with engineers.

Framework: Talk about shared briefs, red lines vs. nice-to-haves, regular design-engineering syncs. Show you use their constraints as creative fuel.

TECHNICAL

Q1. What materials would you specify for a consumer electronics housing and why?

Framework: ABS vs. PC/ABS vs. magnesium alloy. Show systems thinking: finish affects tooling, tooling affects lead time, lead time affects launch.

Q2. What's your experience with rapid prototyping methods?

Framework: Cover breadth: FDM for ergonomic testing, SLA for appearance models, SLS for functional parts. Show you choose fidelity based on goal, not habit.

Q3. How do you approach CMF strategy for a product family?

Framework: CMF is a system: DNA guidelines, hero vs. variant finishes, brand strategy. Reference trend forecasting, competitor audit, and user research.

Q4. Walk me through ergonomics for a diverse user population.

Framework: 5th–95th percentile design. ANSUR/DIN datasets. Difference between designing for the average (nobody) vs. designing for the full range.

21-Point Portfolio Checklist

Every item below is something a senior ID recruiter will notice — either as a strength or a gap. Work through this list before any submission.

Narrative & Structure

- **Each project starts with the problem, not the solution**
Reviewers want to know what was broken before they see what you built.
- **Process stages are visible (research → ideation → final)**
Show your thinking, not just your output.
- **Design decisions are justified, not just shown**
"I chose aluminum because..." — not just a rendered aluminum part.
- **Failures and pivots are documented**
Shows intellectual honesty and growth.
- **Consistent personal voice/style across projects**
Your aesthetic should be recognisable without your name on it.

Visual Presentation

- **Hero image is your single best shot**
Recruiters spend ~3 seconds per project thumbnail.
- **Consistent typography — one display + one body font**
More than two fonts reads as unresolved.
- **Renders show material quality, not just form**
Keyshot materials should reflect real-world finishes.
- **No grey clay renders as the primary image**
Finish your presentations before submitting.

Technical Depth

- **At least one project shows manufacturing awareness**
Draft angles, parting lines, BOM, or process callouts.
- **CMF strategy is explicit in at least one project**
Explain the material and finish rationale — not just "looks nice."

- **Prototypes or physical models shown**

Even rough foam models signal hands-on thinking.

Outcome & Impact

- **At least one shipped or user-tested project**

Real constraints > academic briefs.

- **User feedback or validation method shown**

Even a quote from a user interview counts.

- **Business context provided for at least one project**

Market position, target price point, or competitive landscape.

Logistics

- **5–8 projects minimum (quality over quantity)**

Each case study should tell a complete story.

- **PDF version under 20MB**

Most recruiters email it — large files get dropped.

- **Contact info on first and last page**

LinkedIn and email minimum.

- **Project names match LinkedIn and resume**

Recruiters cross-reference.

Fill-in-the-Blank Project Templates

Use these templates as starting points for every stage of your design process. Print, fill in, or copy into your project documentation.

Design Brief Template

Project Title

Background — why is this project needed now?

Design Challenge

Target User (primary)

Target User (secondary)

Primary Goals (must achieve)

- 1.
- 2.
- 3.

Non-Goals (explicitly out of scope)

- 1.
- 2.

Technical Constraints

Business Constraints (budget, timeline, IP)

Success Metrics

Key Milestones

Concept review:
Design freeze:
Prototype:
Handoff:

User Research Plan

Research Objective

Key Questions to Answer (top 5)

- 1.
- 2.
- 3.
- 4.
- 5.

Methodology

Semi-structured interviews Contextual inquiry Diary study

Number of Participants

Recruitment Method

Warm-up Questions

- 1.
- 2.

Core Interview Questions (5-7)

- 1.
- 2.
- 3.
- 4.
- 5.

Synthesis Deliverables

Personas Journey map Insights deck

CMF Strategy Template

Brand Values (3 words)

___ / ___ / ___

User Perception Goal

Hero Color(s)

Pantone: _____ Hex: _____

Accent Colors

Primary Material

Secondary Materials + Rationale

Surface Treatment / Finish Spec

Sustainability Considerations

Competitive CMF Audit Notes

Case Study Structure

1 · The Problem

2 · Research & Key Insights

3 · Design Principles (3)

- 1.
- 2.
- 3.

4 · Concepts Explored (how many? key tradeoffs)



5 · Key Design Decisions (justify each)

6 · Prototyping & Testing

7 · Final Outcome & Constraints

8 · Reflection — what would you do differently?

Industrial Materials Quick Reference

Key properties, typical applications, and designer notes for the eight materials that show up most in ID practice.

ABS Plastic

Acrylonitrile Butadiene Styrene

Specifications

Density	1.0–1.08 g/cm ³
Tensile Strength	38–50 MPa
Cost	\$ Low
Processing	Injection molding
Recyclability	Type 7 (limited)

Designer Notes: The workhorse of consumer electronics and appliances. Excellent impact resistance, accepts paint and plating easily. UV degrades without stabiliser additives.

Typical Applications: Consumer electronics, appliance housings, toy components.

Polycarbonate (PC)

High-impact transparent engineering polymer

Specifications

Density	1.2 g/cm ³
Impact Strength	Very High
Optical Clarity	Up to 90%
Cost	\$\$ Medium
Recyclability	Type 7

Designer Notes: Outstanding clarity and impact resistance. Scratches easily — specify a hardcoat for consumer products. Good heat tolerance to ~135°C.

Typical Applications: Eyewear lenses, safety helmets, transparent enclosures, medical devices.

Aluminium 6061

Most versatile aluminium alloy

Specifications

Density	2.7 g/cm ³
---------	-----------------------

Tensile Strength	276 MPa
Machinability	Excellent
Cost	\$\$ Medium
Recyclability	Highly recyclable

Designer Notes: Light, strong, and anodisable — giving rich CMF options. Excellent corrosion resistance. Dominant in consumer electronics, aerospace tooling, and medical devices.

Typical Applications: Laptop/phone chassis, bicycle components, medical enclosures, consumer electronics.

Stainless Steel 304

Corrosion-resistant chromium-nickel steel

Specifications

Density	8.0 g/cm ³
Tensile Strength	515 MPa
Corrosion Resistance	Excellent
Cost	\$\$\$ High
Recyclability	Fully recyclable

Designer Notes: Hygienic, durable, and premium in feel. Wide finishing options from mirror-polish to bead-blast. Heavy — consider weight implications for handheld products.

Typical Applications: Medical instruments, kitchen appliances, hardware, luxury goods.

TPU / Silicone Elastomers

Flexible engineering polymers

Specifications

Shore Hardness	10A–95A
Elongation	Up to 600%
Temp Range	-55°C to 200°C
Cost	\$\$ Medium
Biocompatibility	Medical grade available

Designer Notes: The material of soft-touch grips, wearables, and seals. Wide hardness range lets you tune the feel. Some grades degrade under UV — specify UV-stable formulations.

Typical Applications: Wearable straps, grips, gaskets, medical devices, soft-touch overmoulds.

Carbon Fibre (CFRP)

Carbon fibre reinforced polymer

Specifications

Density 1.5–2.0 g/cm³

Tensile Strength 3,500 MPa

Cost \$\$\$\$ Very High

Fabrication Layup, RTM, AFP

Recyclability Emerging technology

Designer Notes: Highest strength-to-weight of any structural material. Brittle under point impact — not a good choice where drop resistance matters. Labour-intensive to fabricate.

Typical Applications: Aerospace structures, high-performance sports, luxury goods, automotive trim.

Recycled HDPE

Post-consumer recycled high-density polyethylene

Specifications

Density 0.93–0.97 g/cm³

Tensile Strength 22–31 MPa

Cost \$ Low

Recyclability Type 2 — widely accepted

Source Milk jugs, detergent bottles

Designer Notes: Strong sustainability narrative and cost-effective. The natural speckle is a design feature if you lean into it. Lower structural properties than virgin HDPE.

Typical Applications: Outdoor furniture, packaging, consumer goods with sustainability positioning.

Magnesium Alloy

Lightest structural engineering metal

Specifications

Density 1.74 g/cm³

Tensile Strength 200–300 MPa

vs. Aluminium 33% lighter

Cost \$\$\$ High

Recyclability Recyclable

Designer Notes: Premium haptic quality and excellent vibration damping. Risk of galvanic corrosion when paired with other metals — isolate with coatings or non-conductive fasteners.

Typical Applications: Laptop chassis, camera bodies, automotive interior structures, medical housing.

2025 CMF Directions for Industrial Designers

The dominant narrative for 2025: visible craftsmanship, honest materials, and the softening of technology. Consumers are pushing back against anonymous black plastic.

Honest Materials

Dominant

Authenticity · Sustainability · Premium

Consumers are rejecting fake surfaces. Exposed wood grain, raw concrete, uncoated aluminium — materials that age gracefully and wear their history are dominating premium categories from consumer electronics to furniture.

Designer action: Specify materials that telegraph their own nature. Embrace manufacturing marks — turning lines, grain, parting lines — as design intent rather than hiding them.

Soft Tech Aesthetic

Rising

Form Language · Consumer · Wearable

The hard, black-slab era is ending. Rounded forms, tactile surfaces, warm neutrals, and biomorphic curves signal a push toward products that feel less like devices and more like companions.

Designer action: Radius every sharp edge. Choose warm whites, creams, and earth tones over stark white and black. Texture tells the story — velvet coating over gloss polycarbonate.

Circular Material Stories

Accelerating

Sustainability · B Corp · Materials

Recycled ocean plastic, post-consumer aluminium, and bio-based composites are moving from marketing footnotes to headline material strategies, especially in sporting goods and consumer electronics.

Designer action: The material passport is becoming a design deliverable. Document your material chain, recycled content %, and end-of-life disassembly strategy.

Warm Earth Tones

Peak

Colour · CMF · Home

Terracotta, sand, clay, ochre, moss — a palette reaction against cold greys and hyper-saturated DTC colours. Particularly strong in furniture, home goods, and wellness categories.

Designer action: Pair warm earth colours with natural textures and honest materials for maximum coherence. Avoid mixing with cold greys.

Biomimicry in Structures

Emerging

Manufacturing · Medical · Aerospace

Additive manufacturing is enabling organic, lattice-based structures that mimic bone and trabecular tissue — simultaneously lightweighting and strengthening components.

Designer action: Begin exploring topology-optimised forms even in early ideation. Lattice structures are moving from aerospace to consumer in the next two years.

Inclusive Ergonomics

Mainstream

Ergonomics · Accessibility · Medical

Designing for the 5th–95th percentile is being replaced by designing for the full bell curve — including low grip strength, one-handed use, and low vision.

Designer action: Specify minimum button sizes (10mm minimum touch target), grip textures for wet or arthritic hands, and colour contrast ratios (4.5:1 minimum) in your briefs.

Essential Reading, Tools & Community

Books

The Design of Everyday Things	Don Norman	Foundational — cognitive design and affordances.
How to Be a Design Leader	Ellen Lupton	Career progression and leadership in design.
Emotional Design	Don Norman	Why aesthetics matter beyond function.
Material ConneXion	Andrew Dent	The global material innovation bible.
The Shape of Design	Frank Chimero	Thoughtful essay on the purpose of design.

Online Tools

brahm.design		This toolkit — interview simulator, portfolio critic, moodboard, palette builder, and more. Free.
Material ConneXion Library	materialconnexion.com	Database of 11,000+ innovative materials.
IDEO Design Kit	designkit.org	Free HCD methods, templates, and field guides.
Core77	core77.com	Industry news, process articles, and ID job board.
iF Design Award Archive	ifdesign.com	25,000+ awarded designs searchable by category and year.
Keyshot Learning Hub	keyshot.com/learn	Rendering tutorials from beginner to advanced.

Communities

Industrial Design Society of America	idsa.org	Professional organisation with regional events.
r/IndustrialDesign	reddit.com/r/IndustrialDesign	Active portfolio feedback community.
Dribbble ID	dribbble.com	Portfolio inspiration and visibility.
LinkedIn ID Groups		Search "Industrial Design" — several active communities.

BrahmWorks

Portfolio Critique Sessions	brahmworks.com	Free 20-minute portfolio reviews with working ID designers.
1:1 Mock Interviews	brahmworks.com	Practice with practicing industrial designers. Pay what you can.
CMF Consulting	brahmworks.com	Material strategy and CMF direction for product companies.
brahm.design Studio	brahm.design	Full interactive toolkit — all tools free, no signup.

brahm.design — The complete interactive toolkit for industrial designers. Free forever.

Interview Simulator · Portfolio Builder · Moodboard · Palette Builder · Material Explorer · Brief Generator