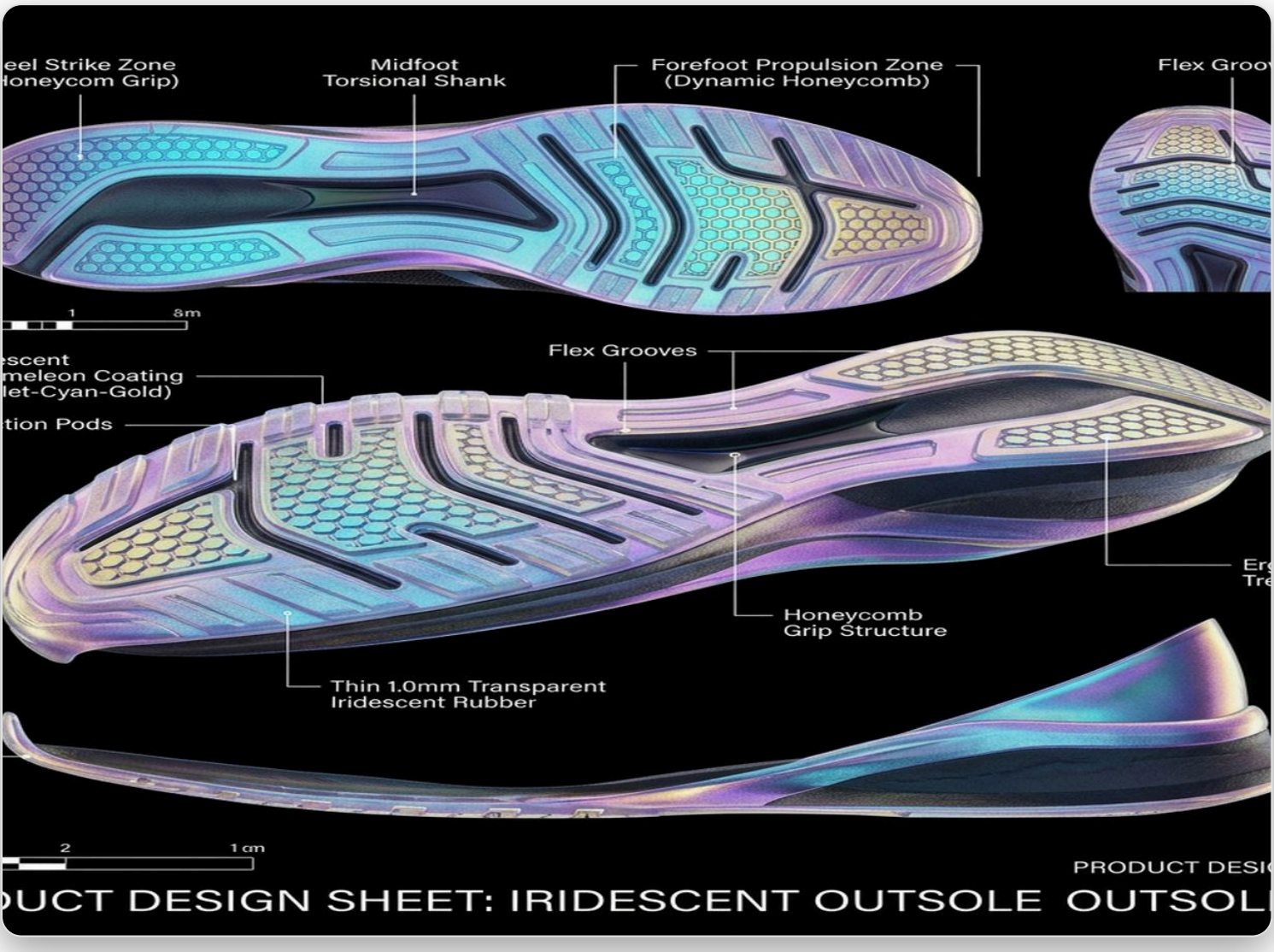
OUTSOLE SUBSTITUTION · DUAL-GRADE PROPOSAL

PROPOSAL · 2026

CY GSRA 62A / 70AT — The Historic TPU Trade-Off, Broken

Lead with 62A (drop-in equivalent to your incumbent soft TPU); pair with 70AT for premium clear styles — a cross-generational injection TPU that pushes abrasion AND grip to the material limit.



The Material Brief

Historically, TPUs have always delivered excellent abrasion — 2×+ better than thermoset rubber. **But good abrasion meant poor slip resistance** — a trade-off the industry accepted, and a reason brands have been cautious about TPU outsoles. The choice has long been: pick abrasion, or pick grip; not both. CY now proposes a **cross-generational soft TPU family** — with **62A as the lead grade** (semi-transparent, drop-in equivalent to brand's incumbent soft TPU), and **70AT as the premium clear option** (fully transparent). The whole family pushes abrasion and grip to the limit of injection-molded TPU — **simultaneously**. **25 mm³ abrasion** (matches CY GSRA 62A, beats thermoset rubber 2-3×) + **SARTA 1.35 DRY** (best in the 6-material TDS, +69% over GCPU 0.8). Two material limits, on the same grade. **No more trade-off.** The core ask of this proposal: **our material spec matches the industry 62A-grade soft TPU category baseline** (hardness, density, tensile, tear, SARTA, abrasion — comprehensive parity). Existing tooling, geometry, and design **drop in directly** — and you get the cross-generational abrasion × grip breakthrough, plus the process and circularity advantages of TPU. The accompanying **Poster 2 / Comparison Matrix** carries the full 4-material TDS side-by-side.

Seven Reasons to Switch

Historic TPU Trade-Off, Broken

Cross-Gen

Abrasion **25 mm³** (industry 62A-grade soft TPU baseline; beats thermoset rubber 50-90 by 2-3×) + DRY grip **SARTA 1.35 ★** (best in the 6-material TDS, +69% over GCPU 0.8) — **two material limits, on the same grade**. Abrasion and grip are no longer a trade-off.

Industry 62A-Grade Soft TPU Baseline · Drop-In

Equivalent

CY GSRA 62A spec matches the industry 62A-grade soft TPU category baseline: **Hardness 63A, Density 1.19, Tensile 22 MPa, Tear 71 N/mm, SARTA 1.35/0.44, Abrasion 25 mm³ — comprehensive parity**. Existing tooling, geometry, and design **translate without re-engineering**. Drop-in directly.

Two Grades, One Platform (62A + 70AT)

Dual

62A soft (63A) + **semi-transparent** — for core athletic / lifestyle SKUs. **70AT firm** (68A) + **fully transparent** — for premium clear / tinted / "ghost" colorways. **Same injection platform**, two hardness/transparency options in one proposal.

Comprehensive Injection Edge

Process

3-4× faster — injection cycle **100-130 s/part** replaces rubber cure **360-480 s/part**.
Less labor — TPU only needs minor runner trim; **rubber requires heavy flash-trimming per mold**.
1mm wall — injection achieves ~1mm average wall (lightweight + design freedom); rubber cure cannot.
Injection mold ≈ rubber mold cost — no re-tooling. *Industry reference — confirm with trial*

100% Recyclable

Circular

TPU is thermoplastic — sprues, runners, and end-of-life parts re-melt into feedstock. Thermoset rubber and GCPU are crosslinked: zero closed-loop option. Direct support for the brand's **2030 circularity commitments**.

GCPU Capacity, Solved

Capacity

GCPU is cure-bound — production capacity is the bottleneck for high-volume brand orders. **TPU injection scales with machine count**, breaking through the cure-oven ceiling. Critical for high-volume seasonal launches.

Design Freedom — Matte / Pearl / Neon-Clear

Design

Injection-grade TPU enables **matte (suede-touch)**, **pearlescent**, and **neon-clear** finishes — the **innovative design direction** for athletic shoe outsoles today. Thermoset rubber and GCPU are cure-process bound and cannot match these surface effects — giving brand 2026+ footwear differentiated look and feel **with no secondary processing**.