TESLA
MECHANICAL DESIGNS

CHOOSING THE RIGHT MATERIAL

INJECTION MOLDING · MATERIAL SELECTION



01

FOUR DECIDING FACTORS

What to weigh before the tool is cut



FOUR DECIDING FACTORS



01

Material hardness

Shore durometer, Type A for milder plastics and Type D for harder. Both run 0 to 100.

02

Flexibility

Bending under stress without breaking, a separate property from stiffness.

03

Material cost

Significant, but the application decides the material, never price alone.

04

Material weight

Polymer density sets how heavy the finished part is, a criterion in its own right.

THE SHORE DUROMETER SCALE

0 — 100

One scale, two types. Hardness is resistance to indentation, measured on the durometer scale named after Albert Shore.

Type A — MILDER PLASTICS

Type D — HARDER PLASTICS



COMMON MISREADING

Soft does not mean flexible. Hard does not mean stiff.

A hard ABS ruler bends well before it fails. A nylon ruler bursts immediately under the same load.



SELECTION RULE

Specify against the application first.

Cost, weight, and hardness are traded off inside that constraint, never ahead of it. Send us the part and we will scope the material study with it.

info@teslamechanicaldesigns.com
www.teslamechanicaldesigns.com

TESLA
MECHANICAL DESIGNS