

Dicyclopentadiene

Tech Sheet

Dicyclopentadiene (DCPD), or C10H12 resin, is characterized by its low viscosity and quick cycle time.

DCPD is highly impact resistant and has been referred to as “**virtually unbreakable**”. It can function exceptionally well after heavy or repeated impacts, in extremely hot temperatures and even after exposure to a variety of chemicals.

DCPD reaction injection molding can produce parts of unprecedented size with a surface areas of **up to 120 ft²** (11.15 m²) while featuring an exceptional strength to weight ratio and average density of only 1.03 g/cc.

DCPD has a **cycle time** of only **4 to 6 minutes**. No additional curing is needed once the part has left the mold. Once the material has entered the mold, the combination of resin, catalyst and heat transforms the liquid DCPD resin into a solid thermoset.

DCPD is a popular choice for protective coverings such as shields and hoods as well as the outer bodies of cars, trucks and machinery or anything else in a high-impact environment..

COMPOSITION			MATERIAL CAPABILITIES			PROCESS CAPABILITIES				TOOLING	
Resinsd	Resin Types	Filler Material	Part Size Range	Annual Volume	Cycle Time	Paint	Inserts	Molded In Features	Specific Gravity	Mold Cost	Mold Materials
Thermoset	Dicyclopentadiene	None	S M L 3' - 14' Largest Dimension	1k - 50k	4 - 6 min	Post-Mold	YES	YES	1.03 Low	\$25k - \$200k	Epoxy Aluminum Nickel

Material Specifications

Flexural Modulus @ 73 °F (psi)	273,000 psi
Specific Gravity	1.03
Part Density (pcf)	64.5
Notched Izod (ft-lb/in)	6
Tensile Strength (psi)	6800 psi
Elongation at Break (%)	n/a
CLTE x 10E ⁶	48.8
Hardness (Shore D)	87
% Reinforcement	0%

Part Design

Wall Thickness “t” (in)	0.079” - 0.630”
Rib Thickness (at base)	0.75” t
Fillets / Radius (in)	1/16”
Part Draft (degrees)	1.5° - 5°
Molded Holes / Features	Yes
Undercut / Tool Action	Yes
Snap Fits	Yes
Insert Molding / Encapsulation	Yes

Applications

Vehicle Body Panels, Fan Shrouds, Protective Shields, Hoods, Covers, Air Deflectors

Process Capabilities

Part Size Range	Largest Dimension 3' - 14'
Part Depth	45"
Annual Volume	1k - 50k
Cycle Time	4 - 6 minutes

Tooling

Mold Material	Nickel Shell Aluminum
Gating Style	Fan
Mold Pressure (psi)	50 psi
Mold Temperature (°F)	125° - 170°

Surface Finish

Grained Surface	Yes
High Gloss - Class A Top Coat Paint	Yes
High Gloss - Class A IN-Mold Paint	No

