

HDPE

Durable, versatile, low cost, abrasion and chemically resistant plastic material



HDPE (high density polyethylene) is available in sheet and rod for applications that require greater strength and stiffness than LDPE (low density polyethylene). It is easy to fabricate and weld using thermoplastic welding equipment and is an excellent choice for fabricated water tanks and chemical tanks.

HDPE Material Options

Cutting board grade HDPE – meets FDA requirements for direct and indirect food contact, is resistant to hot water and cleaning chemicals, and will not absorb moisture, bacteria, or odors.

UV stabilized grade HDPE – performs well in environments where water, UV exposure, and other harsh elements are present, making it a popular choice for playgrounds, outdoor cabinetry, and marine construction.

HDPE for O&P – is somewhat stiffer and tougher than polypro (homopolymer polypropylene) and often used for applications where additional durability and support are required.

HDPE is widely used for:

- Chemical tanks
- Cutting boards for food preparation
- Water pipe flanges (HDPE pipe grade)
- Outdoor and indoor playground systems
- Marine construction (pile guards, bumpers, anti-skid surfaces)
- Orthotics and prosthetics – AFOs, KAFOs
- Light duty tank, chute and bin linings
- Outdoor cabinetry and furniture

Performance characteristics:

- Easy to weld using thermoplastic welding equipment
- Low moisture absorption
- Excellent surface for food preparation
- Good chemical and corrosion resistance
- Easy to fabricate and machine
- Low weight

Common brands:

- Polystone® G
- Sanatec®
- Orthoform®

Available in:



Sheet

Rod

TYPICAL PROPERTIES OF HDPE

	UNITS	ASTM Test	HDPE
Tensile strength	psi	D638	4,000
Flexural modulus	psi	D790	200,000
Izod impact (notched)	ft-lbs/in of notch	D256	1.3
Heat deflection temperature @ 264 psi	°F	D648	172
Maximum continuous service temperature in air	°F		-
Water absorption (immersion 24 hours)	%	D570	0.10
Coefficient of linear thermal expansion	in/in/°F $\times 10^{-5}$	D696	7.0

Values may vary according to brand name. Please ask your Curbell Plastics representative for more specific information about an individual brand.