



Combining experience, dedication
and technology with
state-of-the-art equipment...
makes it a GEM!

 **GEM PLASTICS**



GEM Plastics Offers:

- **FLEXIBILITY** in textures, thickness, lengths, widths, colors and multiple polyolefins – HDPE, HMWPE, LDPE & PP.
- **ADDITIVE** capabilities including antimicrobial, flame retardants, antioxidants, stabilizers and UV protection.
- **CUSTOM** resins for applications requiring different stiffness properties, chemical resistance, high-impact resistance, vandal resistance, durability and thermoformability.
- **MULTIPLE INDUSTRY APPLICATIONS** ranging from food, medical, and marine to chemical tanks, playgrounds, outdoor furniture, lockers and truck bodies.
- **GEM'S EXCLUSIVE** post-production capabilities that can include and integrate:
 - CNC-machined stainless steel and steel components
 - Powder coating
 - Plastics finishing including cutting, routing, CNC-laser and others

GEM Process

GEM's plastic pellets are custom blended per our customers' requirements and extruded into sheets up to 1.5" thick. Temperature control is carefully balanced in order to achieve enhanced dimensional stability and the highest quality cosmetic appearance. This — and GEM's ability to modify various polyolefins, textures, measurements and coextruded color models at only a moment's notice — make GEM unique to the industry.

Post Production

GEM's fully-customized post-production capabilities are equipped to satisfy the most individualized and demanding requirements. These secondary operations include routing, cutting, assembly, CNC laser-steel profiling, powder coating and integration of stainless and stamped metal components.

Resources & Facilities

GEM uses customized resins for applications that require excellent stiffness, high-impact characteristics, thermoformability and longevity, and has FDA grades available for applications that require contact with food or beverages. GEM equipment accepts a variety of additives including colorant, antioxidants for heat and weather, flame retardants, stabilizers, antimicrobial for food and medical applications, as well as those that provide protection against ultraviolet light.

From our computer-controlled extrusion system to our quality assurance laboratory, GEM's equipment is state of the art. We monitor and control our process with ISO 9000 procedures to ensure that our sheets are manufactured to the highest quality standards and consistencies. Mechanical properties such as color gloss, surface hardness and melt flows are measured with precision, while our CAD/CAM software complements the conversion operations in CNC cutting, routing and stenciling.

GEM is able to provide competitive pricing to our customers through several raw-materials suppliers as well as our two-million-pound storage capacity. A recycling operation with a capacity of 500,000 lbs. per month can convert scrap to clean and color-segregated pellets. GEM uses post-consumer and post-industrial resins for its color and black extrusions.

Sheets & Applications

HDPE sheets are manufactured in sizes of .100" to 1.5" thick, 84" wide and 14' long. All machines are also capable of running HMWPE, LDPE and PP.

Products made from GEM HDPE:

- Are resistant to vandalism, graffiti, high-traffic wear and humidity.
- Do not crack, delaminate, splinter, chip, swell or absorb water like other materials.
- Are available in a variety of textures, colors, and chemical compositions.
- Can be tailor-made to fit your needs of thermoformability.
- Can include additives such as UV stabilizers, antimicrobial agents, flame retardants, antioxidants, stabilizers and blowing agents to create cellular microfoam.

Applications	* Standard Additives in Application					Standards		
	Foam	Anti-Microbial	UV	Flame Retardants	Colorant	ASTM-E84	FDA	USDA
Cutting Boards	X	X			X		X	X
Marine	X	X	X		X			
Playground	X	X	X		X			
Ramps	X		X		X			
Signage	X		X		X			
Outdoor Furniture	X	X	X		X			
Indoor Furniture	X	X		X	X	X		
Arenas	X		X		X			
Thermoforming	X		X		X		X	X

* While the above table identifies our standard additives for each application, GEM can customize any combination of additives to suit your particular application requirements.

HDPE

This resin meets these specifications:

- ASTM D4976 - PE 235
- FDA 21 CFR 177.1520(c) 3.2a, use conditions
- B through H per 21 CFR 176.170(c)
- Listed in the Drug Master File

GEM HIGH-DENSITY POLYETHYLENE (HDPE)

This HDPE copolymer is tailored for extruded and thermoformed applications that require:

- Excellent stiffness
- Good processability
- Excellent process stability

Typical sheet and thermoforming applications include:

- Signage
- Food containers
- Cutting boards
- Tote boxes
- Packaging
- Portable toilets



Nominal Physical Properties	English	Scientific Information	Method
Density		0.955 g/cm ³	ASTM D1505
Melt Index, 190/2.16		0.25 g/10 min	ASTM D1238
Tensile Strength at Yield, 2 in./min. Type IV bar	4,000 psi	27 MPa	ASTM D638
Elongation at break, 2 in./min. Type IV bar	600%	600%	ASTM D790
Flexural Modulus, Tangent - 16.1 span: depth, 0.5 in./min.	200,000 psi	1,370 Mpa	ASTM D790
ESCR. Condition A (100% Igepal), F50	45h	45h	ASTM D1693
ESCR. Condition B (100% Igepal), F50	35h	35h	ASTM D1693
Brittleness Temperature, Type A, Type I Specimen	-103°F	-75°C	ASTM D746

Stock Product

Our product is stocked in the 14 colors shown below, 1" thick x 56" wide x 120" long, in textured finish.



Actual colors may vary from those shown due to variations in printing.

Product is also stocked in Black and Natural smooth finish in the following sizes:

Sheet Gauge (inches)	1/8"	1/4"	3/8"	1/2"	3/4"	1"
Approx. Wt. (lbs.)	20	40	60	80	120	160
Sheet Size (inches)	48" x 96"	48" x 96"	48" x 96"	48" x 96"	48" x 96"	48" x 96"

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