

## RIM (Reaction Injection Molding)

### What is it?

Simply stated in this process 2 liquid components—component "A" a formulated polymeric isocyanate and component "B" a formulated polyol blend are mixed in a high pressure head and then pumped into a mold cavity. A reaction then occurs in the mold resulting in a high density polyurethane structural foam part.

### How, Why, & When To Use It

- 1) To produce covers, bases, keyboards, bezels and housings for computers, business machines and medical applications
- 2) For prototype through medium volume applications (1-2000 pcs.)
- 3) There is considerable design freedom to produce complex shapes
- 4) Molds can be resin, spray metal, cast aluminum or machined aluminum
- 5) Tooling is low cost and allows for ease of modification
- 6) A variety of castings, sheet metal and threaded inserts can be molded in place
- 7) Alternative foams are available which offer a range of insulating properties
- 8) UL Traceability

### Design & Technical Information

#### SIZE

Up to 48"

#### WEIGHT

Up to 18 lbs

#### FINISH

If required:

- No bake prime and paint
- RF shielding
- Silk screen

#### WALL THICKNESS

Can vary but should not be less than 1/4" although local thicknesses of 1/8" can be produced.

#### GENERAL TOLERANCE

0"- 3" ± .010

3"- 6" ± .015

6"-12" ± .020

12"-18" ± .030

18"-48" ± .040

Note: tighter tolerances can be negotiated

#### HOLES

All holes molded to size

#### DRAFT

Recommended 1° - 2°, but no draft is possible when specified

Radii and Fillets - Should be as liberal as possible 1/8" to 1/4"

#### DENSITY

Can be varied depending on foam used to offer a variety of insulation properties

A variety of materials are available which offer a range of insulating and mechanical properties with 94V-0 - detail specification sheets on request.

### Comparison Chart R•I•M / Injection Mold Properties:

Material	R•I•M	Polystyrene	ABS	Modified PPO
Specific gravity	.85	0.85	0.89	0.85
Thickness (in.)	0.25	0.25	0.25	0.25
Flexural modulus (psi)	220,000	275,000	240,000	261,000
Flexural strength (psi)	9,500	5,700	6,000	6,800
Tensile strength (psi)	5,800	2,300	3,000	3,400
Elongation (%)	10	20	—	16
Gardner impact + + (in-lb)	74	28	52	55
Falling ball (ft-lb)	—	—	—	18
Dart impact (ft-lb)	—	—	10	—
Heat distortion temperature				
@ 66 psi (°F)	212	183°	177°	205
@ 264 psi (°F)	180	168°	162°	180

The above properties are intended as a guide only and may vary depending on thickness and shape.