Expanded Polypropylene (EPP) Foam
Typical Material Tolerances
For Molded Product

Dimensions	Tolerance / Density					
Linear Dimensions[2]	**16 to 24 g/l**	**25 to 32 g/l**	**33 to 50 g/l**	**51 to 80 g/l**	**81 to 150 g/l**	**≥ 151 g/l**
0 to 50 mm	± 2.5 mm	± 2.25 mm	± 2.0 mm	± 1.75 mm	± 1.5 mm	± 1.25 mm
51 to 100 mm	± 2.75 mm	± 2.5 mm	± 2.25 mm	± 2.0 mm	± 1.75 mm	± 1.5 mm
101 to 250 mm	± 3.0 mm	± 2.75 mm	± 2.5 mm	± 2.25 mm	± 2.0 mm	± 1.75 mm
251 to 500 mm	± 4.0 mm	± 3.5 mm	± 3.25 mm	± 3.0 mm	± 2.5 mm	± 2.0 mm
501 to 750 mm	± 6.0 mm	± 5.0 mm	± 4.5 mm	± 4.0 mm	± 3.5 mm	± 3.0 mm
751 to 1000 mm	± 7.5 mm	± 6.5 mm	± 6.0 mm	± 5.0 mm	± 4.0 mm	± 3.5 mm
greater than 1000 mm	± 0.0075 mm/mm	± 0.0065 mm/mm	± 0.006 mm/mm	± 0.005 mm/mm	± 0.004 mm/mm	± 0.0035 mm/mm
Surface Profiles (GD&T)[1]	7.0	6.0	5.0	4.0	3.0	3.0
Hole/Slot Dimensions (MMC)	**16 to 24 g/l**	**25 to 32 g/l**	**33 to 50 g/l**	**51 to 80 g/l**	**81 to 150 g/l**	**≥ 151 g/l**
5 to 10 mm	± 1.25 mm	± 1.0 mm	± 0.5 mm	± 0.5 mm	± 0.5 mm	± 0.4 mm
11 to 25 mm	± 1.25 mm	± 1.0 mm	± 1.0 mm	± 1.0 mm	± 1.0 mm	± 0.8 mm
26 to 50 mm	± 2.0 mm	± 1.5 mm	± 1.25 mm	± 1.0 mm	± 1.0 mm	± 0.8 mm

[1]Note: per ASME Y14.5 (Geometric Dimensioning and Tolerancing). 16 g/l (or kg/m^3) = 1.0 pcf

[2]Note: In cases where part geometries and resulting dimensions are skewed or bilateral, or where the primary datum structure varies across different linear dimensions, the tolerance recommendations listed above may not be appropriate and specific tolerances will need to be negotiated with the respective design responsible party.

Molded EPP dimensional tolerances vary depending on part datum structure. The ability to achieve tighter tolerances with EPP parts is possible, and requires consideration of density, material grade, number of cavities, press/platen size, molding technique, datum locations, inspection fixture design, and inspection environment (temperature, etc.). Typical tolerances are shown in the table. These are general guidelines. In the case of tolerances on the density borderline (i.e. 33 g/l), defer to the MIN density based on the total tolerance (i.e. if part is 33 g/l ±10%, use 30 g/l as the density in the table). Consult JSP to discuss optimal EPP dimensional tolerances specific applications.

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