

3M® Bumpon® Protective Products Load Tolerances

Recommended Maximum Acceptable Load Per Bumpon Product, lbs./bumper

Background:

We have become aware of applications such as heavy plate glass tabletops, where the shape of the Bumpon product can significantly affect performance. Laboratory testing has confirmed that the shape of the Bumpon Protective Product makes a significant difference in its load bearing performance. Hemisphere shaped products, such as SJ-5303 and SJ-5306, will not support as much of a load as a flat top shaped Bumpon product such as SJ-5012. A heavy load could result in fracturing the urethane or “crumbling”. As a result, recommended load tolerances have been developed.

Recommendations:

Maximum Acceptable Load Per Bumpon Product (75-120°F or 24-49°C)

Product	Diameter (inches)	Diameter (mm)	Lbs./bumper	Kg/bumper
SJ-5003	0.44	11.1	8	3.5
SJ-5009	0.69	17.5	22	10
SJ-5012, 5312	0.50	12.7	20	9
SJ-5017	0.75	19.0	22	10
SJ-5027	0.63	16.0	15	7
SJ-5312	0.50	12.7	20	9
SJ-5532	1.25	31.8	62	28
SJ-5744	0.75	19.1	40	18
SJ-6344	0.75	19.1	40	18
SJ-6349	0.98	25.0	75	34
Custom Cylindrical Shapes				
	0.51	13.0	20	9
	0.55	14.0	20	9
	0.59	15.0	25	11
	0.63	16.0	30	14
	0.67	17.0	35	16
	0.71	18.0	35	16
	0.75	19.0	40	18
	0.79	20.0	45	20
	0.83	21.0	50	23
	0.87	22.0	55	25
	0.91	23.0	60	27
	0.94	24.0	70	32
	0.98	25	75	34

Load tolerances can be calculated for all of the Bumpon Brand Products by using the following methods:

Rollstock Products

The recommended load tolerance is 100 lbs./sqin (psi) or (690 kPa) at 70 F (21C) to 120F (49C).

Molded Shapes

Cylindrical shaped product load tolerances can be easily calculated by using 100 psi as the maximum based of the surface area at the top of the bumper. The tapered shapes must use the flat top dimensions in calculating the area. For example, SJ-5705 has a base width of 1.25” by 1.25”, but the top flat portion of the product is 1” by 1”. As a result, the recommended load tolerance is 100 pounds.

Hemisphere shaped products are not recommended for supporting heavy loads. Hemisphere shaped products will safely support approximately 50 psi (based on the die cut diameter of the Bumpon product).

Temperature:

Temperature is a factor in deciding the maximum load tolerances. In general, the load tolerance will increase with temperatures below 75°F and decrease at temperatures above 120°F.

Time:

The time that the Bumpon product is under the load is not a factor. Customers should test and evaluate Bumpon products under actual use and storage conditions to determine the suitability for the intended application.