

## Shelf Deflection of 1/4" by Estimated Total Distributed Load in Pounds

The following table shows how much weight (of a uniformly distributed load) will cause a 1/4" sag in 8 and 12" shelving, with spans of 30, 36, 42 and 48 inches. See how shelf deflection is related to shelf dimensions, width, thickness, span, load per inch of span and the stiffness or resistance to deflection (E-value) of the materials used in fabrication. Materials in the analysis are solid wood, veneered plywood and MDF sheet goods.

Material	Solid	Thickness	Span 30"		36"		42"		48"	
			Width	12"	8"	12"	8"	12"	8"	12"
Yellow-Poplar	lumber	3/4" 1-	322	483	189	284	117	175	78	117
Red Gum		1/16"	lbs. 912	lbs. 1368	lbs. 528	lbs. 790	lbs. 332	lbs. 498	lbs. 221	lbs. 332
Sweet Gum										
Hard Maple	lumber	3/4" 1-	356	534	209	313	133	206	88	133
Pecan		1/16"	lbs. 1021	lbs. 1536	lbs. 592	lbs. 888	lbs. 373	lbs. 560	lbs. 249	lbs. 374
Red Oak										
Birch	lumber	3/4" 1-	400	600	232	348	146	219	98	146
Hickory		1/16"	1134	1701	660	990	414	621	277	415
Medium density particleboard (raw or covered with "melamine")		3/4"	78	117	46	69	29	43	19	28
		1"	185	277	109	164	69	102	45	66
Medium density fiberboard (raw or covered with "melamine")		3/4"	100	150	58	87	36	54	25	38
		1"	237	356	137	206	85	128	59	90
Birch faced plywood, veneer core		3/4"	145	218	86	129	54	81	36	54
Birch faced plywood, medium density particleboard core		3/4"	125	188	72	109	46	68	31	46
Medium density particleboard covered two sides and one edge with nominal 0.028" decorative laminate		3/4" (core)	174	261	100	139	64	96	42	63
Medium density particleboard covered two sides and one edge with nominal 0.050" decorative laminate		3/4" (core)	234	350	137	205	86	129	58	87
Medium density particleboard with 1/8" solid lumber edge		3/4"	89	139	53	79	33	50	22	33
Medium density particleboard with 3/4" solid lumber edge		3/4"	100	150	60	90	42	63	25	38
Medium density particleboard with 3/4" x 1-1/2" solid lumber dropped edge		3/4"	384	435	216	241	132	152	92	107

NOTE: All medium density particleboard is ANSI 208.1-1998 Type M-2. The information and ratings stated here pertain to material currently offered and represent results of tests believed to be reliable. For weight per square foot of these materials please contact abaico at (312) 730-7301 or email us with the request.