

# Monarch Clip Panel System Pull Out Values



## Monarch Z Clip System

Panel Material	Panel Screw	Mounting Surface Stud Material	Mounting Surface Blocking	Mounting Surface Screw	Panel Screws		Mounting Surface Screws	
					Single Fastener (kg)	Typical 4' x 8' Panel (1)	Single Fastener (kg)	Typical 4' x 8' Panel (1)
<b>System Failure Values in Shear</b>								
19mm MDF Panel	#8 x 3/4" Pan Head Deep Thread Screw	22 Ga. Metal Studs	19mm Plywood Blocking	#8 x 2" Pan Head Sheet Metal Screw	80.29	1929.6	473	1929.6
19mm MDF Panel	#8 x 3/4" Pan Head Deep Thread Screw	Wood Studs	19mm Plywood Blocking	#8 x 2" Pan Head Sheet Metal Screw	80.29	1929.6	473	1929.6
19mm MDF Panel	#8 x 3/4" Pan Head Deep Thread Screw	22 Ga. Metal Studs	112.5mm Gypsum	#8 x 2" Pan Head Sheet Metal Screw	75.75	1818.5	445	1818.5
19mm MDF Panel	#8 x 3/4" Pan Head Deep Thread Screw	Wood Studs	12.5mm Gypsum	#8 x 2" Pan Head Sheet Metal Screw	75.75	1818.5	445	1818.5
19mm MDF Panel	#8 x 3/4" Pan Head Deep Thread Screw	22 Ga. Metal Studs	NA	#8 x 2" Pan Head Sheet Metal Screw	75.75	1818.5	445	1818.5
19mm MDF Panel	#8 x 3/4" Pan Head Deep Thread Screw	Wood Studs	NA	#8 x 2" Pan Head Sheet Metal Screw	75.75	1818.5	445	1818.5
19mm Plywood or Hardwood Panel	#8 x 3/4" Pan Head Deep Thread Screw	22 Ga. Metal Studs	19mm Plywood Blocking	#8 x 2" Pan Head Sheet Metal Screw	80.29	1929.6	473	1929.6
19mm Plywood or Hardwood Panel	#8 x 3/4" Pan Head Deep Thread Screw	Wood Studs	19mm Plywood Blocking	#8 x 2" Pan Head Sheet Metal Screw	80.29	1929.6	473	1929.6
19mm Plywood or Hardwood Panel	#8 x 3/4" Pan Head Deep Thread Screw	22 Ga. Metal Studs	12.5mm Gypsum	#8 x 2" Pan Head Sheet Metal Screw	75.75	1818.5	445	1818.5
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19mm Plywood or Hardwood Panel	#8 x 3/4" Pan Head Deep Thread Screw	22 Ga. Metal Studs	NA	#8 x 2" Pan Head Sheet Metal Screw	75.75	1818.5	445	1818.5
19mm Plywood or Hardwood Panel	#8 x 3/4" Pan Head Deep Thread Screw	Wood Studs	NA	#8 x 2" Pan Head Sheet Metal Screw	75.75	1818.5	445	1818.5

### Important Note:

The holding values in the chart above are ultimate holding values for the variables shown. A safety factor of 4:1 (or 25%) is generally accepted as a safe working load. For example, if the ultimate shear value for the first option is 80kg, then the safe working load for that screw is 20kg or 40kg per Monarch Clip (2 screws per clip). It is also important to remember that this value is the holding value for one screw. The system can be strengthened with more screws or larger diameter screws.

### Disclaimer:

The tested capacity of the clips as defined herein is merely intended to provide guidance for all end-users on the capacity that is available when #8 x 3/4" Pan Phillips Deep Thread screws are used to attach clips to MDF panels. This capacity has been developed through testing under a given set of testing conditions that represent typical installations. Decisions made, by the end user, with respect to capacities must take into account installation deviations from the tested application, accuracy of screw placement, any potential for over driving of the screws, panel misuse, improper panel or clip storage, panel and clip handling, etc. The final capacity to be used for any installation is the responsibility of the end-user.

### Typical Installation:

The Monarch Z Clip testing performed by Qualtim, a third party testing laboratory, were performed using the following installation. The tests were designed to assess the load bearing capacity in installing a 1200mm x 2500mm MDF panel vertically in shear. To install a 19mm Thick, 1200mm Wide x 2500mm Tall MDF panel, you would mount three different continuous lengths along the wall parallel to the ground approximately 750mm apart. These should be fastened to studs at a minimum of every 400mm on center with the appropriate screw. Our testing was done with 22 Gauge Metal Studs and Wood Studs and the results would not apply for weaker substrates. Installers often use 19mm blocking in front of the wall to allow for added fasteners every 200mm on center along the wall. Along the panel, installers would typically use 12 panel clips on the back of the panel; 4 panel clips at each height to interlock with each of the 3 continuous lengths. These clips would be spaced 300-400mm apart and fastened to the back of the panel with (2) #8x 3/4" Pan Head Deep Thread Screws for a total of 24 screws in a typical panel installation.

For a description of the testing performed, please visit: <http://monarchmetal.com/blog/z-clip-load-bearing-metal-french-cleat-load-rating/>