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Average Direct Withdrawal and Lateral Loads for OSB Panels

In order to finish a project that utilises Structural Panels SIPs, many types of materials / finishes need to be fastened to the panels. These materials can include sheet finishes, wall boards, bricks, stone, other structural elements, cabinets and a host of other items.

In many of these application's screws are the preferred fastener. Data on the pull-out and lateral withdrawal capacity of screws into OSB have not been readily accessible. To help clarify the performance of screws installed in OSB, a major manufacturer has generated data on various screws installed in OSB. Fifteen repetitions of both direct and lateral withdrawal of each screw type, in each of the three environmental conditions were conducted.

The following tables summarise the lowest, ultimate average value achieved for a particular screw type when installed in three different thicknesses of OSB.

Average Direct Withdrawal (Pull-out) - 11mm OSB		
Screw Size	KGs	
3.5mm Deck Screw	80.5	
4.2mm Deck Screw	82.7	
4.8mm Deck Screw	90.0	
5.5mm Roofing Screw	86.4	
6.3mm Roofing Screw	80.5	

Average Lateral Load (Shear) - 11mm OSB		
Screw Size	KGs	
3.5mm Deck Screw	90.0	
4.2mm Deck Screw	53.6	
4.8mm Deck Screw	65.0	
5.5mm Roofing Screw	198.2	
6.3mm Roofing Screw	211.8	

These values are average ultimate values. Appropriate safety factors should be applied to obtain design values