

Nail & Screw Strength Chart: Shear & Pullout Values (NDS 2024)

Single-shear and withdrawal (pullout) reference values for common nails and wood screws in Douglas Fir-Larch - the data behind the nails-vs-screws debate. Screws win pullout by 2-3x; nails win shear and speed.

Fastener	Diameter (in)	Single shear, 2x to 2x (lb)	Withdrawal per inch (lb/in)	Wins at
16d common nail	0.162	138	56	Framing shear loads
16d sinker	0.148	115	51	Easier-driving framing
16d box (gun nail)	0.131	95	45	Speed (thinner = weaker)
8d common nail	0.131	94	45	Sheathing, stud nailing
#6 wood screw	0.138	71	98	Trim, light joinery
#8 wood screw	0.164	90	117	General construction
#10 wood screw	0.190	~110	135	Heavy-duty wood joining

Note: Shear values are NDS single-shear values computed per NDS 2024 Chapter 12 (nails) and Chapter 13 (screws) for main member. Reference only - not for design. When in doubt, consult an engineer.

Reference values only — verify against the governing standard or manufacturer before use.