

Exterior Fastener Chart

What to buy, how long, how deep, and what fails in treated lumber.

01 Which screw for what

FASTENER	USE IT FOR	BUY THIS FOR TREATED LUMBER	NOT FOR
Exterior deck screw (#8 to #10)	Decking, slats, tabletops, bench seats	Polymer-coated ACQ-rated, or hot-dip galvanized	Beam-to-post, ledgers, anything structural
Pocket-hole screw, exterior	Aprons, frames, patio furniture joints	Kreg Blue-Kote coarse; stainless if always wet	Load-bearing pergola or beam joints
Structural screw (GRK RSS, SDWS, TimberLOK)	Beam to post, rafters, sistered 2x; no pilot	Climatek, Double-Barrier, or ACQ-approved label	Replacing through-bolts on 3-ply beams
Lag screw (1/4 to 1/2 in)	Post-to-beam, ledgers, landscape timbers	Hot-dip galvanized (ASTM A153) or stainless	Driving without a pilot; hammering in
Carriage / through-bolt (1/2 in)	Pergola post-to-beam, 3-ply beams, rail posts	Hot-dip galvanized or stainless, washers both ends	Thin stock; anything you cannot reach behind
Stainless (304 / 316)	Cedar, redwood, coastal, anywhere stains matter	304 general; 316 within 300 ft of saltwater	Mixing with galvanized hardware

Structural screws are code-listed lag replacements (ICC-ES ESR). Through-bolts still rule for 3-ply beams.

02 Pocket-hole screw length (Kreg)

STOCK THICKNESS	JIG + COLLAR SETTING	SCREW LENGTH	THREAD
1/2 in	1/2 in	1 in (3/4 in in 1/2 in ply)	Coarse; pan head in thin stock
3/4 in	3/4 in	1-1/4 in	Coarse: pine, cedar, fir, ply. Fine: oak, maple
1-1/2 in (2x)	1-1/2 in	2-1/2 in	Coarse (2x lumber is softwood)

Set the jig and the depth collar to the same thickness mark. Outdoors: Blue-Kote (coarse only, rated for treated lumber) or stainless for constant wet or coastal.

03 Pilot holes and screw length

SCREW	PILOT IN SOFTWOOD	PILOT IN HARDWOOD	LENGTH RULE
#8	7/64 in	1/8 in	2/3 of the screw into the second piece
#9	1/8 in	9/64 in	At least 1 in of thread bite
#10	1/8 in	9/64 in	Roughly 2x the top board thickness
1/4 in lag	1/8 in pine/cedar; 5/32 in fir/SYP	3/16 in	Shank hole 1/4 in; threads 10 to 12 diameters deep

Softwood pilot is about 15% under the root diameter; hardwood pilot equals the root diameter (Forest Products Lab).

04 Coatings vs. treated lumber (ACQ / MCA / CA-C)

COATING OR MATERIAL	OK IN TREATED LUMBER?	NOTES
Hot-dip galvanized, ASTM A153	Yes	The minimum the code accepts outdoors
Stainless 304 / 305	Yes	No rust streaks on cedar or redwood
Stainless 316	Yes	Required within 300 ft of saltwater
Polymer-coated, ACQ-rated (Blue-Kote, Climatek, Quik Guard)	Yes, if the label or ESR says so	Freshwater exposure only; not saltwater
Mechanically galvanized	Only ASTM B695 Class 55 or better	Read the box
Electroplated zinc (bright, shiny)	No	Not hot-dip; corrodes fast in ACQ
Bright steel, black oxide	No	Interior only

One metal per connection. Stainless screws in galvanized hangers (or the reverse) eat the zinc.

05 Glue for outdoors

GLUE	WATER RATING	OPEN TIME (70F)	MIN. TEMP	USE IT FOR
Titebond III	ANSI/HPVA Type I, waterproof	8 to 10 min	45F	Outdoor furniture, rain-exposed joints. First choice.
Titebond II	ANSI/HPVA Type II, water resistant	3 to 5 min	55F	Covered porch pieces, planters
Titebond Original	Interior only	n/a	n/a	Never outside

Outdoors it is glue plus screws, never glue instead of screws. Neither is rated for submersion.

06 Five rules

- Pre-drill anything within 6 in. of a board end. Pilot about 3/4 of the fastener diameter.
- Countersink flush, then stop. Overdriving in soft treated pine crushes fibers and strips the hole.
- Decking: two #8 screws per board per joist. 2-1/2 in on 5/4 boards, 3 in on 2x.
- Two fasteners per joint, never one. A single screw is a pivot, not a joint.
- Lags and bolts get washers. Pilot the lag and turn it in, never hammer. Through-bolt 3-ply beams.