Data sheet screw hooks, L-hooks, screw eyes and storm hooks — plug choice, pre-drilling, loading

Hooks and eyes with wood thread are screwed into wood or into a plug. The load capacity depends on the engagement depth, the wood species and the direction of the load: pull along the thread holds least, a hook pointing upwards and loaded towards the wood holds most. They are hanging devices for static loads, not lifting or fall-arrest equipment.

Plug choice per wire thickness (nylon plug, solid substrate)

wire thickness (mm)	plug Ø (mm)	heavy load plug Ø (mm)
3 – 4	5 / 6	6
4.5 – 5	6 / 8	8
6	8 / 10	10
7 – 8	10 / 12	12

Pre-drilling

substrate	hole
softwood	0.5 – 0.6 × wire thickness; not needed below 4 mm
hardwood	0.7 × wire thickness, over the full thread length
masonry / concrete	plug size from the table; hole 10 mm deeper than the plug, blow out dust
plasterboard / hollow wall	hollow wall plug or toggle; the hook thread must engage in the plug, not only in the board

Loading

topic	rule
engagement	full wood thread in the wood or plug; half engagement reduces the holding force far more than half
direction	turn the hook so the opening points upwards; keep the load as close to the wall or ceiling as possible
ceiling	pure pull on the thread: choose a thicker wire and longer engagement, or a screw eye with nut through a beam
swinging / dynamic	hammock, swing, training gear: only with a closed eye, thickness ≥ 8 mm, in solid wood or with an expansion anchor in concrete
not for	lifting loads, fall protection, climbing: use certified lifting eyes (DIN 580/582) or certified anchor points

Storm hooks and shutter screws

topic	rule
storm hook	hook on the moving part, eye on the fixed part; measure in the open position so the hook drops in without tension
shutter screw	full thread, wide head; pre-drill in hardwood, fill all holes of the hardware
material	zinc plated indoors and under cover; stainless A2 outdoors; brass in visible work and damp rooms, not for heavy loads (soft)