WOOD PROJECT LAB

Wooden Storage Crate — Printable Plan

Version 2.0 | Fixed-bottom, end-panel construction | 18 x 12 x 10 in outside

Design summary

Two 3/4 in plywood end panels support six pine side slats and three pine bottom boards. The bottom is fixed; there are no rails, hangers, or corner posts.

Cut list

Part	Qty	Actual size / cut
Plywood end panels	2	3/4 in plywood; 10 1/2 in W x 9 1/4 in H
Long side slats	6	1x3 (3/4 x 2 1/2 in), 18 in long
Bottom boards	3	1x4 (3/4 x 3 1/2 in), 18 in long

Materials and tools

One 3/4 in plywood offcut at least 22 x 9 1/4 in (or two 10 1/2 x 9 1/4 in pieces); two 8 ft 1x3 boards; one 8 ft 1x4 board; wood glue; approximately 40 compatible 1 1/2 in finish nails/brads; clamps; saw, square, tape measure, drill and small pilot bit (if hand nailing), hammer or brad nailer, sandpaper, eye and hearing protection. Cut layout allows saw kerf on the 1x3 and 1x4 stock.

Verified dimensions and layout

Coordinate check: x = 0-18 in overall length; y = 0-12 in overall width; z = 0-10 in overall height. End panels occupy x = 3/4-1 1/2 in and 16 1/2-17 1/4 in, y = 3/4-11 1/4 in, z = 3/4-10 in. Front side slats occupy y = 0-3/4 in; back side slats y = 11 1/4-12 in; both run x = 0-18 in. Bottom boards occupy x = 0-18 in, y = 3/4-11 1/4 in, z = 0-3/4 in. Bottom boards bear against and are attached to the lower edges of the end panels.

Fastening schedule

Use exterior-facing 1 1/2 in finish nails or 18-gauge brads with wood glue: two fasteners at each end of each side slat (24 total), and two at each end of each bottom board (12 total), 36 total. For the side slats, center the pair at x = 1 1/8 in or 16 7/8 in, and at 1/2 in above/below the center of each slat course. For the bottom boards, fasten at x = 1 1/8 in and 16 7/8 in, at y = 1 5/8 and 3 3/8 in (front board), 5 1/8 and 6 7/8 in (middle board), 8 5/8 and 10 3/8 in (back board), measured from the outside front edge. Pre-drill if hand nailing. Do not substitute long screws driven into narrow plywood edges.

Assembly steps

1. Cut two identical plywood end panels 10 1/2 in wide by 9 1/4 in tall. Cut six 18 in 1x3 side slats and three 18 in 1x4 bottom boards. Check actual lumber sizes before cutting.

2. Sand the cut edges. Mark each end panel with its bottom edge and its two narrow vertical edges. Place end panels upright and parallel, with their outer faces 16 1/2 in apart and their centers at x = 1 1/8 in and x = 16 7/8 in in

the final crate.

3. Position the first long side slat against the front vertical edges of both end panels, its bottom edge 3/4 in above the eventual crate bottom. Align the slat ends with the final x = 0 and x = 18 in planes. Glue the contact areas, clamp, and fasten at both ends.

4. Install the middle and upper front slats. All three slats are 2 1/2 in tall. From the crate bottom their vertical spans are 3/4-3 1/4 in, 4 1/8-6 5/8 in, and 7 1/2-10 in. This gives two 7/8 in gaps. Repeat for the back side.

5. Turn the crate upside down. Lay the three 1x4 bottom boards across the full 18 in length, with their long edges touching, and between the front and back side slats. Their combined 10 1/2 in width matches the plywood end panels. Apply glue to the bottom edges of both end panels and clamp the boards in place.

6. Fasten each bottom board down into each end panel with two predrilled 1 1/2 in finishing nails or compatible 18-gauge brads per board/end junction. Check that fasteners are centered in the 3/4 in plywood edge and do not emerge through a face.

7. Allow the glue to cure according to its label, then inspect the joints, sand any sharp corners, and apply a finish appropriate for indoor storage.

Final checks

Confirm 18 x 12 x 10 in overall; front/back slats flush at top; 7/8 in gaps between courses; bottom boards fill the 10 1/2 in interior width. Measure actual stock before assembly. Inspect all nails for protruding points.

Use and safety

Designed for lightweight, stationary indoor storage. The plan is dimensionally checked but not physically tested; do not claim a load rating or use it as a step stool, seat, or lifting container for heavy contents. Plywood edge fastening and glue quality affect durability. For heavier use, choose a separately engineered crate design.

Construction reference: Ana White, Wood Crate Building Guide (end-panel-and-slat construction concept). Original dimensions and assembly schedule developed for Wood Project Lab.
https://www.ana-white.com/woodworking-projects/wood-crate-building-guide