



Compact storage shed

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COMPACT storage SHED



Pack a lot of yard gear into this small shell, and do it with style

by Gary Wentz

Sized for small spaces

Easy-access tool locker in back





storage shed

If you need a home for all your garden tools and supplies but have limited yard space, this small shed is a perfect storage solution. With its 6 x 6-ft. footprint and classic Georgian styling, it fits into tight spots and adds charm to any back yard. The “front room” (53 x 65 in.) provides plenty of space for shelves and even a small potting bench, while the double door on the back of the shed creates a spacious easy-access tool locker. For easy care, we chose low-maintenance siding and trim materials that hold paint and resist rot better than wood.

Tools, time and money

We engineered this shed for easy, modular construction; you can build the major parts in your driveway and assemble them on site. While this isn't a complex project, it does require basic building skills. We'll show you how to assemble the frame, but we won't show you all the finish details like how to hang doors or shingle the roof.

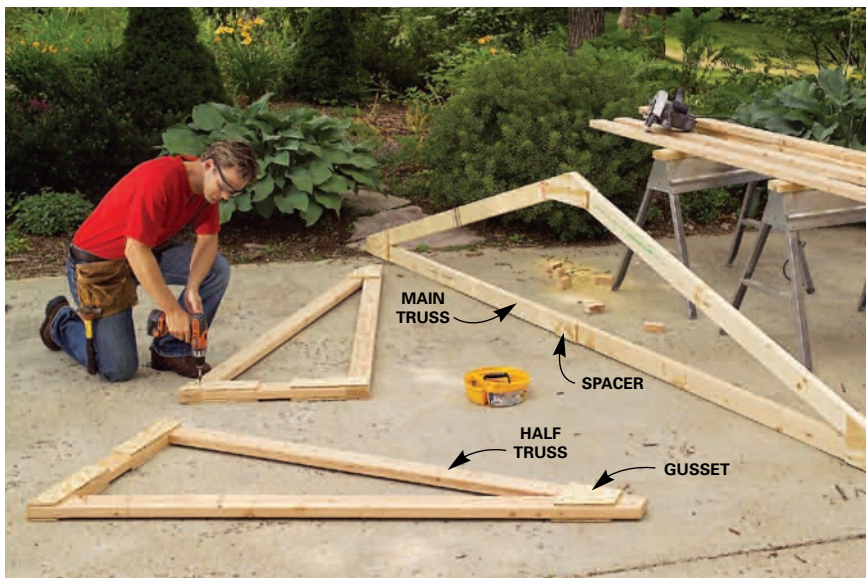
You'll need a drill, a circular saw, a miter saw and a router. Although not absolutely essential, a table saw will make the project go much easier and faster. We also recommend a compressor and an air-powered brad nailer for faster, better trim installation. Plan to spend two weekends building the shed and another day or two painting. The total materials bill for our shed was about \$1,300. If you opt for a blank wall on the back of the shed rather than a double door and a tool locker, you'll save about \$200.

Preconstruction planning

Call your city building department to find out whether you need a permit to build this 36-sq.-ft. shed. Also ask about any restrictions on where you can place the shed. If you plan to build near the edge of your lot, for example, you may have to hire a surveyor to locate your property lines. You can build this shed on a site that slopes as much as 6 in. over 6 ft. But if your site is steeper, consider building a low retaining wall to create a level site. To find some of the shed materials—espe-



1 Frame the walls and floor following Figures A and B. Cover the floor with 3/4-in. plywood, the walls with cement panels and the divider wall with pegboard.



2 Cut the truss parts and assemble them with 1/2-in. plywood gussets and 1-1/4-in. screws. Screw 1/2-in. spacers to the bottom chord on the main truss.

cially the fiber cement panels and composite trim boards—you'll probably have to call local lumberyards or special-order through a home center. Special orders can take six weeks to arrive, so choose your materials long before you plan to build.

Frame the whole shed on your driveway

Framing the floor and walls is the fastest part of this project. Before you get started, select your prehung front door so you know the dimensions of the rough open-

ing needed in the front wall. We chose a 36-in. door that required a 38 x 82-1/2-in. rough opening. Your door may require slightly different dimensions. The big opening at the back of the shed will easily accept two 30-in.-wide prehung doors.

Frame the 6 x 6-ft. floor from pressure-treated 2x6s as shown in **Figure A**. Whenever you fasten treated lumber, be sure to use nails or screws that are rated to withstand the corrosive chemicals in the lumber (check the fastener packaging). Use pressure-treated 2x4s for the bottom plates of the walls. Cut the plates to the

Figure A
Shed

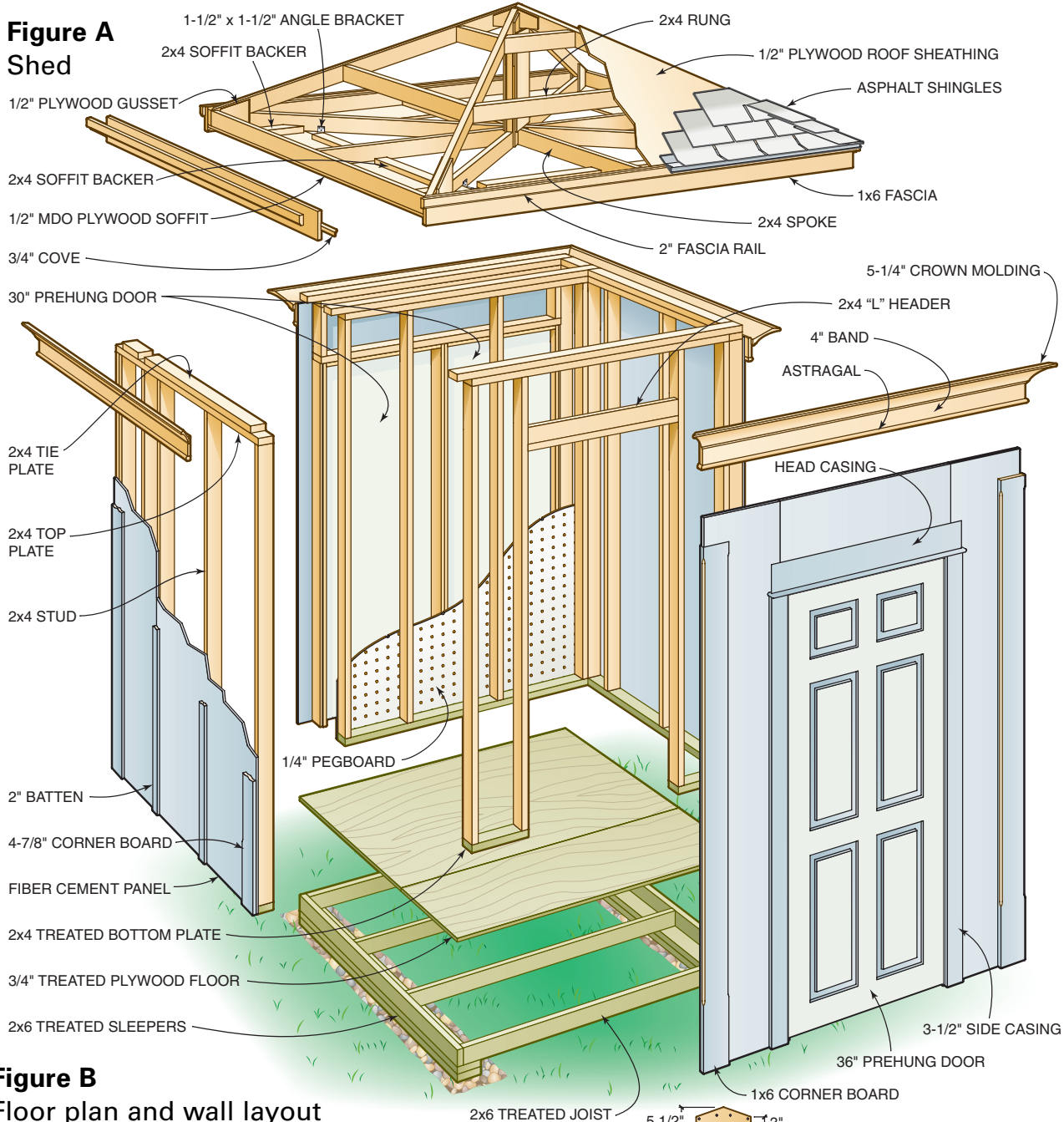


Figure B
Floor plan and wall layout

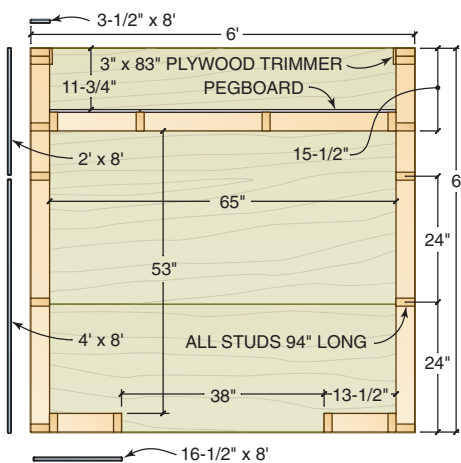


Figure C
Main truss

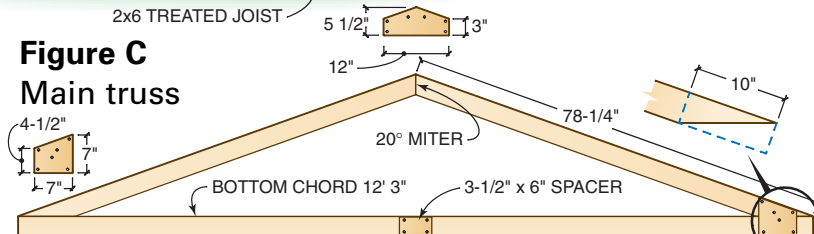
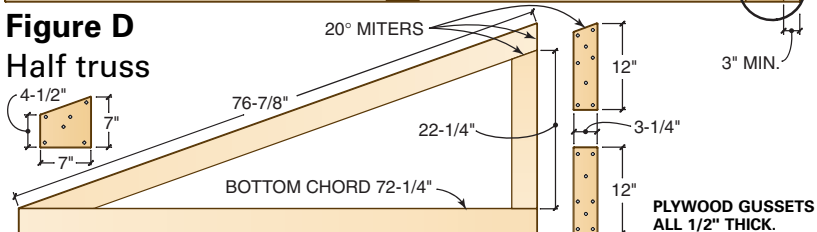


Figure D
Half truss



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dimensions shown in **Figure B**. Then cut 20 wall studs to 94 in. and assemble the four walls. Also frame the small header wall (14 in. x 65 in.) that fits above the back doors.

Before you sheathe the floor and wall frames, take corner-to-corner diagonal measurements to make sure each frame is square. Fasten 3/4-in. treated plywood to the floor frame with 1-5/8-in. screws. Also screw pegboard to the interior pegboard wall. Nail cement panels to the front and sidewalls (**Photo 1**). Position the cement panels flush with the bottom plate, not the top plate (the wall frames are 1 in. taller than the cement panels). The two sidewalls have identical framing, but be sure to attach the sheathing so the right and left sides mirror each other. The cement panels on the front wall overhang the framing by 3 in.

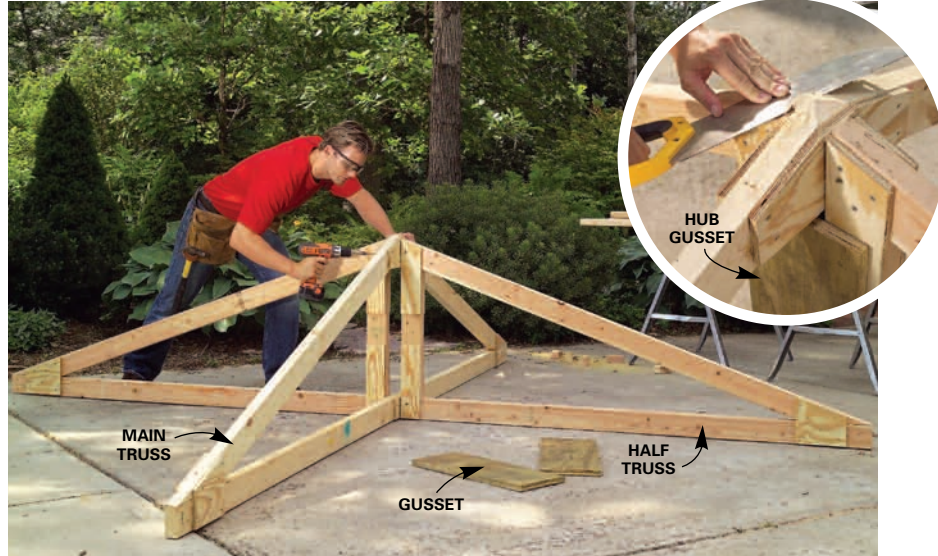
A complex roof made simple

A typical pyramid roof requires lots of compound angle cuts and endless trips up a ladder to test-fit all the tricky parts. Not this one. There are no compound angles or complex calculations at all. And ground-level construction means faster progress with less strain.

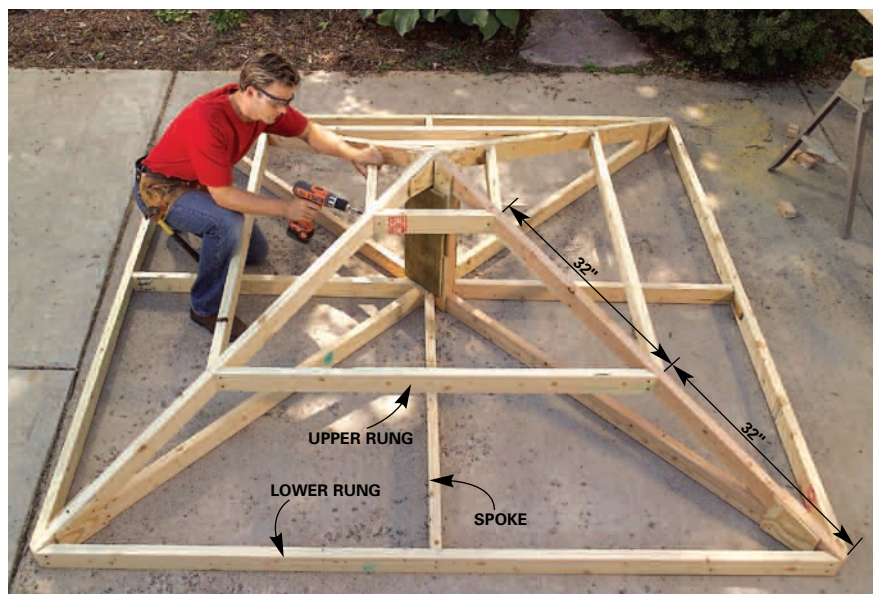
Build the main truss and two half trusses first (**Photo 2**). Choose the straightest 2x4s you can find for these parts. **Figures C and D** show the dimensions and angles. Your angle cuts don't have to be perfect; the gussets will make the trusses plenty strong even if the parts don't fit tightly.

Join the three trusses with two hub gussets (**Photo 3**) made from plywood left over from the floor. The "rungs" that fit between the trusses have 45-degree bevel cuts on both ends. You can tilt the shoe of your circular saw to cut bevels or use a miter saw. In order to create a square roof frame, all four lower rungs must be the same length. Cut them to 103-1/8 in., set them all in place to check the fit and then trim them all by the same amount until they fit identically between the trusses.

With the lower rungs in place, insert the spokes (**Photo 4**). One end of each spoke has a double bevel cut; make a 45-degree bevel from one side, then flip the 2x4 over and cut from the other side. This forms a



3 Screw half trusses to the main truss and tie them together with 9 x 21-in. hub gussets and 2-1/2-in. screws. Trim the main truss to form a pyramid.



4 Fasten the upper rungs between the trusses with 2-1/2-in. screws. Position the outer edge of the rungs flush with the tops of the trusses.



5 Dig two trenches 6 in. deep and fill them with pea gravel. Then level treated 2x6 sleepers over the gravel and set the floor on the sleepers.

storage shed

90-degree point that fits into the corner where the main truss and half truss meet. To complete the roof frame, install the upper rungs (**Photo 4**).

Assemble the shed on site

The shed floor rests on a simple foundation: 2x6 pressure-treated “sleepers” laid on a bed of pea gravel. Dig two parallel trenches about 10 in. wide, 6 in. deep and centered 6 ft. apart. The trenches can run parallel to the sidewalls or the front and back walls of the shed. Fill the trenches with pea gravel. Lay the 6-ft.-long sleepers on the gravel. Using a level, determine which sleeper is higher (**Photo 5**). Level the higher sleeper along its length by adding or removing small amounts of gravel. Then add a little gravel under the other sleeper to make it level with the first. On a sloped site, one end of a sleeper may sit below grade while the other rests above the surrounding soil. You can also screw extra layers of 2x6 over the sleepers to compensate for a sloped site. We added two extra layers to both of our sleepers. That raised the shed and allowed us to slope the surrounding soil away from the shed. Set the floor on the sleepers so that the joists span the space between the sleepers. At each corner, drive a 3-in. screw at an angle through the floor frame into the sleepers.



6 Anchor the walls to the floor with 3-in. screws. Start with a sidewall, then add the front wall, followed by the pegboard wall and the other sidewall.



7 Set the rear header on 1/2-in. plywood trimmers and screw it into place from inside. Nail on overlapping tie plates to lock the walls together.



8 Screw 16-ft. 2x4s to the shed to form a ramp. Position your stepladders before you slide the roof frame up the ramp and onto the shed. Center the roof frame and fasten the trusses at each corner with a pair of angle brackets. Install 2x4s to provide nailing backers for the soffit.

storage shed

Stand the walls and set the roof

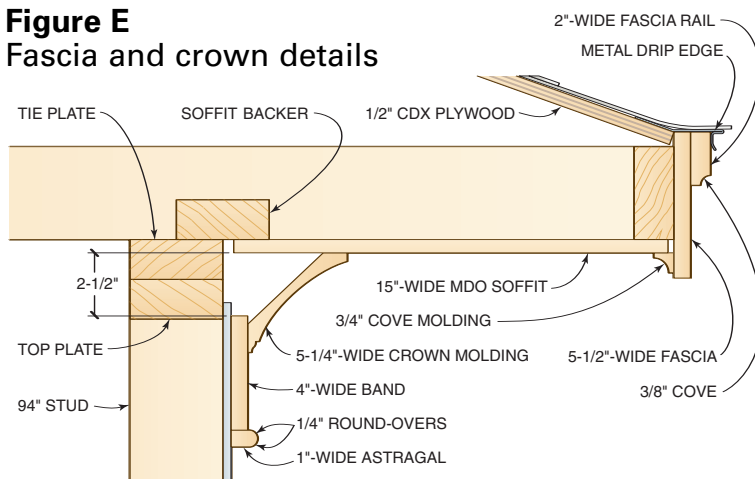
You'll need a helper to carry and stand up the walls. Set one of the sidewalls in place and screw it to the floor every 2 ft. Position the bottom plate (not the cement sheathing) flush with the outer edge of the floor. Use a level to make sure the rear end of the wall is plumb and brace it with a 2x4 (**Photo 6**). Position the front wall and screw it to the floor. Then drive 1-5/8-in. screws through the overhanging front sheathing to tie the front and sidewalls together. Add the pegboard wall next, followed by the other sidewall and finally the rear header wall. Make sure all the walls are plumb, and nail tie plates over the walls (**Photo 7**).

To safely set the 160-lb. roof frame into place, you'll need two helpers, two stepladders and a ramp made from a pair of 16-ft.-long 2x4s. Secure each 2x4 with three 3-in. screws and brace them near the middle with a horizontal 2x4. Then simply slide the roof frame up the ramp and onto the shed (**Photo 8**). Center the roof frame so that all four lower rungs are the same distance (16-1/2 in.) from and parallel to the walls. Fasten the roof frame with metal angle brackets and install sof-



9 Sheathe the roof with 1/2-in. plywood. Cut each piece 3 in. extra long, nail it in place and cut off the excess. Temporary support blocks help position the plywood as you nail it.

Figure E Fascia and crown details



Low-maintenance cement panels

"Fiber cement" siding is basically cement reinforced with cellulose fibers. We chose it because it's durable, affordable and rot-proof, but especially because it holds paint longer than most other exterior materials. Exactly how much longer depends on a variety of factors, but builders have told us of cases where paint on fiber cement lasted twice as long as paint on nearby wood.

Fiber cement is most common in a plank form that's used for lap siding. But it's also available in 4 x 8-ft. sheets (3/16 in. thick) with textured or smooth surfaces (we used the smooth). Some home centers and lumberyards stock the sheet material; others have to special-order it

(about \$30 per sheet).

Working with fiber cement is a lot like using other sheet materials. Pick up a brochure where you buy the panels or go to the manufacturer's Web site for specific instructions. You have to leave 1/8-in. spaces between sheets, for example. When nailing, place nails at least 3/8 in. from edges and 2 in. from corners. Although pros use special blades to cut fiber cement, you can cut it with a standard carbide circular saw blade. Cutting whips up a thick cloud of nasty dust, so a dust mask is mandatory.

Two suppliers of fiber cement siding are www.james-hardie.com and www.certainteed.com.

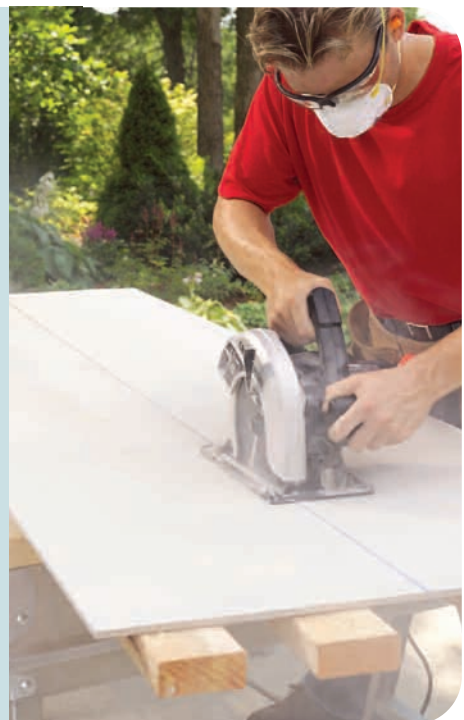
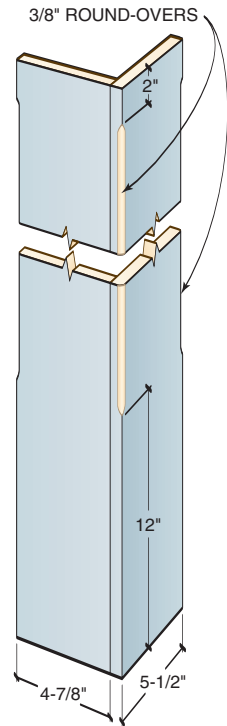


Figure F
Corner boards



10 Nail and glue the corner boards in place. Install the narrower side first, making sure it's flush with the corner. Then add the full-width piece.

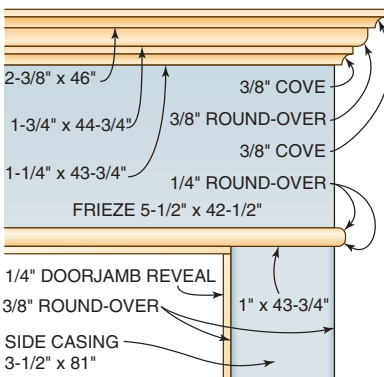
fit backers (**Photo 8**) before you sheathe the roof with 1/2-in. plywood (**Photo 9**).

Elegant trim from plain boards

Most of the trim on our shed is made from a “composite” material that stands up to Mother Nature better than wood (see Editor’s Note, p. 46). We used pine wood moldings only where they’re sheltered from sun and rain. The composite boards we used are 5/8 in. thick and come in the same widths as standard wood boards. In a few cases we used these boards “as is.” But we dressed up most of the trim parts with a router. The router work adds only a couple of hours to the project and creates a much more elegant look. You’ll need three router bits to shape the trim boards: a 1/4-in. round-over, a 3/8-in. round-over and a 3/8-in. cove bit. **Figures E and F** provide the specifics. Here are some other details:

- Install the fascia and fascia rails first (**Figure E**). Then shingle the roof. We used asphalt shingles. Be sure to install metal drip edge over the fascia.
- Composite trim must be butted at corners, not mitered, since miter joints often open over time.
- For soffit material, we used 1/2-in. MDO (medium density overlay), which is plywood with a tough resin coating. MDO is available at some home centers and lumberyards (\$45 per 4 x 8-ft. sheet). You could also use plywood or fiber cement soffit board.
- For the crown molding under the soffits, we used a large (5-1/4-in.) cove profile (**Figure E**). To get molding that wide, you may have to visit a lumberyard or special-order from a home center.
- Corner boards hide nail heads and the edges of the cement panels (**Photo 10**). To hide the cement panel joints and other nails, nail and glue two 2-in.-wide battens over the studs on each sidewall.

Figure G Door trim



(The lengths of your trim components may differ)



11 Nail and glue the moldings to the frieze board one at a time. Then fasten the head casing above the door with construction adhesive and brad nails.

Doors and casing

We chose a classic six-panel door for the front of our shed and trimmed it with elaborate casing. To make the side casings, just rip your trim material to 3-1/2 in.

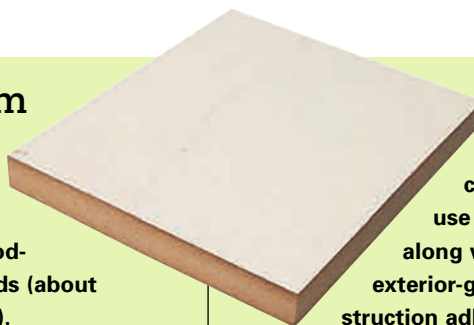
Editor's Note: Hooked on composite trim

One day a few years ago, my local lumberyard did me a huge favor: It ran out of the redwood boards I had always used for trim. The only alternative was a "composite" made from "wood fiber and resin." Sawdust mixed with glue sounded like a recipe for problems, but I gave it a try and haven't used wood trim boards since.

Composite trim looks better after it's installed and keeps its good looks longer than wood. Every board is straight and free of imperfections like knots or splits. It doesn't chip or splinter when you cut or rout it. It holds paint longer than wood and resists rot better than

most "rot-resistant" woods. As a bonus, composite costs less than good-quality wood boards (about \$13 for a 16-ft. 1x6).

Composites aren't perfect; they're heavy and floppy, so they're more difficult to install solo. Cutting or routing churns up a thick, powdery dust cloud, so I always wear a dust mask and do my cutting outdoors. The material is harder than wood and difficult to nail by hand. Manufacturers recommend using a framing nailer or predrilling and hand nailing. Predrilling is slow and framing nails leave big, ugly nail



heads to cover up. So I use a brad nailer along with plenty of exterior-grade construction adhesive. Brads alone don't have enough holding power, but they hold the trim in place until the adhesive sets.

Composite trim is available at lumberyards and some home centers. The composite we chose for this shed is PrimeTrim (www.gp.com/build). Another widely available product is MiraTec (www.cmicompany.com).

Gary

wide and rout both edges with a round-over bit. Install the side casings so they project 1/4 in. above the doorjamb opening. Your side casings may be slightly longer or shorter than the length listed in

Figure G.

Photo 11 shows how to assemble the head casing that fits over the side casings. The five parts that make up the head casing may also be longer or shorter than the lengths listed in **Figure G**. To determine the correct lengths, measure across the side casings from the outer edge on one to the outer edge of the other. For ours, that measurement was 42-1/2 in. If your measurement is more or less, just add or subtract from the length measurements given in **Figure G**.

For the tool locker on the back of the shed, we bought two simple prehung 30-in. steel doors: a left-hand swing and a right (about \$100 each). We pulled the factory-installed trim off the doors and screwed the jambs together to form a double door. To stiffen the assembly, we screwed a 4-in.-wide strip of 1/2-in. plywood across the top of the jambs. Then we installed our double door backward, so it swings out rather than inward (see p. 35).

The corner boards on the back side of the shed act as the door casing, so you

can't install them until the doors are in place. Don't round over the edges of these back corner boards. To complete the back-door casing, install a composite 1x6 above the doors.

Primer and caulk for a lasting paint job

Prime the wood and fiber cement with high-quality acrylic primer. The composite trim is factory-primed, but you'll have to prime any exposed cut ends and all the routed profiles. Be sure to prime the bottom ends of the corner boards and battens so they don't absorb moisture. The primer will raise wood fibers in the exposed composite, leaving a rough surface. Remove these "whiskers" by lightly sanding with 100-grit sandpaper.

Careful, thorough caulking is essential for a lasting paint job because it prevents moisture from penetrating the cement panels and trim. Fill all the nail holes and seal any gaps between and along the trim parts with acrylic caulk. Also caulk the two short cement panel joints above the door. After the caulk cures, apply two coats of high-quality acrylic paint.

Materials List

ITEM	QTY.
2x6 x 12' treated	4
2x4 x 8' (2 treated, 28 untreated)	30
2x4 x 10'	6
2x4 x 12'	4
2x4 x 14'	1
2x4 x 16'	2
3/4" treated plywood	2
1/2" CDX plywood	5
MDO plywood	2
1x6 x 16' composite trim	14
4 x 8' fiber cement panels	5
10' metal drip edge	4
30" doors	2
36" door	1
Doorknobs	3
1 square of shingles	
30' of ridge shingles	
Construction adhesive	4 tubes
Acrylic caulk	2 tubes
L-brackets	8
3" exterior screws	1 lb.
2-1/2" exterior screws	1 lb.
1-5/8" exterior screws	1 lb.
1-1/4" exterior screws	1 lb.
8d galvanized nails	5 lbs.
16d galvanized nails	5 lbs.
1" roofing nails	5 lbs.
1-1/4" brads	
1-3/4" brads	
Pea gravel (50-lb. bags)	10

The 22-in.-tall copper roof finial is available at www.weathervanesofmaine.com, (207) 548-0050. Item No. 702, \$125 plus shipping.

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 Photography • BILL ZUEHLKE
 Technical Art • FRANK ROHRBACH III