Sturdy DIY Tornado Shelter

Comprehensive and easy-to-follow USDA Forest Service Laboratory plans can help your family build their own tornado shelter. The engineers who developed the plans for the 8 by 8-ft. structure have tested it to withstand impacts and wind speeds of up to 250 mph.

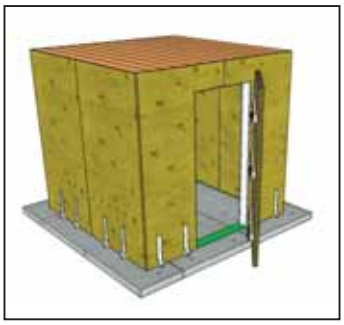
Two people should be able to build the shelter from scratch in only a few days. It's designed to be adapted to an existing structure at an estimated cost of approximately $5,000.

The plans include a list of materials and eight distinct construction phases. Six how-to videos illustrate the process. The phases include instructions for cutting the lumber to length and ripping to width, constructing beams, building walls, installing ceiling beams, attaching sheathing, building and hanging the door, ventilation and anchoring the shelter.

Triple beams made from three same length 2 by 8s are joined with construction adhesive and nails to form laminated beams for the walls and ceiling. The center 2 by 8 is offset by 1 1/2 in. to produce a tongue and groove cross-section. Beams are laid up as walls in a log cabin fashion, locking together via the tongue and groove design. Wall beams are joined at corners with 8-in. long wood screws and construction adhesive.

Ceiling beams are attached to walls with 8-in. long screws and to each other with construction adhesive. Plywood sheathing (23/32 in.) is attached to the interior and exterior of the four walls and ceiling with adhesive and nails.

The door is made from three sheets of plywood sandwiched between two sheets of 18-ga. cold-rolled steel. It's hung on bolt hooks installed on the exterior of the shelter wall with latches on the interior surface for locking when occupied.



Shelter is designed to handle wind speeds up to 250 mph.

The shelter should be anchored to a concrete slab. The slab must be at least 4 in. thick and 4,000 psi strong. To prevent the foundation from sliding and the shelter from overturning, it must also be at least 5 ft. extended to either side.

Before beginning construction, the design engineers recommend contacting local building departments. There may be local requirements for tornado shelters, such as door swing direction.

Contact: FARM SHOW Followup, Forest Products Laboratory, 1 Gifford Pinchot Dr., Madison, Wis. 53726 (ph 608-231-9200; https://research.fs.usda.gov/fpl/tornado-shelter).

Options include a rail accessory kit, ramp accessory kit and stabilizer jacks. The trailer has a patent-pending wraparound track system available.

Customizable Trailer Delivers Value

Harbor Freight's new Haul-Master Custom Trailer is designed for easy customization. It was first announced in 2023 and reintroduced this past fall, with availability promised in early 2025.

The double-rail frame, 5 by 10-ft. trailer is lightweight but has a capacity of 2,000 lbs. It features a complete wiring harness protected inside the base rail. The polymer fenders won't rust or dent. Four bolts make the fenders easy to remove or replace as the load or application demands. Also, standard are 13-in. radial tires and LED lights. The A-frame tongue with hitch adds stability and increases weight distribution.

Options include a rail accessory kit, ramp accessory kit and stabilizer jacks. The trailer has a patent-pending wraparound track system available. Tie-downs in the track accessory kit attach anywhere on the frame.

In place of drop-down tail ramps on the rear of the trailer, the optional Haul-Master loading ramps store under the bed. Simply slide them out, lock them to the bed and load up.

Drop-down stabilizer jacks can be installed in the rear corners of the bed. A company spokesman explained that driving a load on a trailer can lift the vehicle off the ground when hooked up to a very light vehicle. The jacks prevent that from happening.

Harbor Freight announced a base price of $999.99 for the trailer at an industry show this past fall.

Contact: FARM SHOW Followup, Harbor Freight (ph 800-444-3353; www.harborfreight.com).

The Gopher Killer is designed to leave the soil surface without releasing bait to the field surface. This eliminates waste and possible danger to livestock and non-target wildlife.

Attachment Wipes Out Gophers Fast

The Eilers Machine Gopher Killer is an effective way to eliminate gophers. The 3-pt. hitch-mounted machine deposits bait underground where the gophers tunnel and feed, traveling at 3 1/2 to 4 mph. It's been getting the job done for more than 30 years.

"We originally made the Gopher Killer for Western Alfalfa, and that was the name it was sold under," says Laurie Lira, Eilers Machine and Welding. "It started as a joint venture. However, since 2013, it's been sold under our company name, mostly in Nebraska, Kansas, eastern Colorado and into the Oklahoma Panhandle."

The Gopher Killer is a rugged machine with a heavy-duty frame and a shank designed for trouble-free operation. The shank forms a burrow where the bait is laid. It ends in a replaceable John Deere drill point that delivers the bait.

A 20-in. coulter ahead of the shank slices the sod to prevent the shank from heaving the ground. It cuts through weeds and tough surface roots to enhance bait delivery.

The floating packer wheel has traction barbs that put constant pressure on the surface, regardless of soil type. Following the burrowing shank, it returns the soil surface to its original condition.

The Gopher Killer is designed to leave the soil surface without releasing bait to the field surface. This eliminates waste and possible danger to livestock and non-target wildlife.

The Gopher Killer is designed to fit Cat. II and III quick hitches. It's 50 in. long, 37 in. wide and 52 in. high and weighs 300 lbs. Contact Eilers Machine and Welding to find the closest dealer and request a quote. Big Springs Equipment, Big Springs, Neb., has the Gopher Killer priced at $3,600 on its website.

Contact: FARM SHOW Followup, Eilers Machine and Welding, 600 Commerce Rd., Lexington, Neb. 68850 (ph 308-324-3751; www.eilersmachine.com) or Big Springs Equipment, P.O. Box 278, Big Springs, Neb. 69122 (ph 308-889-3440; www.bigspringsequipment.com).

DIY Remote Swing Auger

Mark Niebrugge's harvest was smoother after he converted his swing auger to a remote-controlled powered one. The conversion was simple, and the cost was low compared to buying a new powered auger with remotes for $2,800 or more.

"My wife has always helped unload grain by pushing the swing-away auger under the hopper bottom," says Niebrugge. "Her arthritis was getting the best of her, and she said we needed to do something different. I have less than $500 in the conversion, and it only took a few hours to set up."

Niebrugge and his son, who farms with him, looked at options such as a drive-over pit. When they settled on a conversion, they started looking for electric motors.

"We looked at tarp motors used on grain hoppers and picked the one with the highest horsepower and lowest speed," says Niebrugge. "We found the right size wheels on Amazon and ordered two remotes to operate the motor."

Converting the manual swing-away auger to power required removing the existing wheels. The tarp motor was mounted to the old wheel holes in the auger, and new drive wheels were mounted to the motor's shaft.

"We wired the motor to the tractor but added a solenoid on the tractor to break the connection so we didn't drain the battery when the tractor shut off," says Niebrugge. "We also mounted a battery to the auger so it could be moved without starting up the tractor. It's a regular car battery, and one charge lasts all season. Pulling a single pin, we can remove the battery bracket from the auger."

The tarp motor cost less than $170, the solenoid was $19, the two remotes were $34, and the drive wheels were around $50.

"The total with the battery was around $480," says Niebrugge. "This fall, we used the powered swing-auger on well over 120,000 bushels of grain with no issues. Our son and our hired man reported that it worked flawlessly."

Niebrugge converted his swing auger for less than $500.

Contact: FARM SHOW Followup, Mark Niebrugge, 20874 N 1700th St., Sigel, Ill. 63462 (ph 217-821-3122).