Seasonal High Tunnel System for Crops

ME-798: Design Criteria and Product List

To be eligible for Maine NRCS Programmatic assistance, High Tunnel structures and materials must meet the following Required High Tunnel Design Criteria. The producer is required to supply NRCS with the manufacturer's design and instructions for the specific model and size for review and approval prior to purchase. NRCS will review all designs, including those on the Approved Product List, to ensure that the selected model meets the criteria. High tunnels that are not on the Approved Product List must be reviewed and approved by the State Technology Program Leader or designated staff.

Required High Tunnel Materials and Design Criteria:

☐ Frame is gothic style (peaked, not rounded)

☐ Maximum tunnel width is 30 ft. Minimum height is 6 feet

☐ Bows and ground posts are at least:

(i) 1.90" round 14 gauge galvanized steel or stronger for tunnels ≥ 26 ft. wide
(ii) 1.66" round 14 gauge galvanized steel or stronger for tunnels < 26 ft. wide
(iii) 2.00" square 16 gauge galvanized for all tunnel widths
(iv) 1.625" x 2.750" oval 16 gauge for all tunnel widths

☐ Bows are spaced 4 ft. apart. Bows may be spaced 6 ft. apart only for tunnels constructed with galvanized steel bows and ground posts that are at least:

(i) 2.375" round 14 gauge or
(ii) (ii) 2.0" x 3.56" oval 16 gauge

☐ 3 purlins for tunnels < 26 ft. wide, 5 purlins for tunnels ≥ 26 ft. wide. This includes one central "ridgepole" purlin. A ridgepole purlin is required.

☐ Trusses with braces/cross-ties every other bow for tunnels ≥ 26 ft. wide

☐ Wind bracing diagonals on each end

☐ Frame is covered with at least 6-mil, 4-year UV resistant polyethylene film

☐ Roll-up or drop-down sides are installed on both sides and rope (or equivalent material) is attached from hip-board to baseboard to protect sides from billowing

☐ End walls are framed with wood lumber or metal and covered with UV resistant polyethylene film (at least 6-mil, 4-year), polycarbonate, or wood. Baseboards are installed as instructed.

☐ At least one end wall contains a door for access

☐ Bows/posts shall consist of no more than 5 individual segments, including ground posts. Typically this includes 2 ground posts, 2 half bows, and a bow connector. (Splices/sleeves may be used to join posts/bows and are not considered segments.)

☐ All segments must be through bolted (bolt and nut) at the connection point

Approved Product List for Maine*

Provided below is the current Approved Product List for Maine, which includes models with design and materials meeting the minimum criteria for Maine NRCS High Tunnel financial assistance.

****Note: Producers are responsible for ensuring that the model is ordered with all required components to meet Maine's requirements. For example, if corner braces or trusses/cross-ties are not included in kit, they must be ordered separately.****

Source	Model
Griffin Greenhouse & Nursery Supplies Tewksbury, MA (978-851-4346) www.griffins.com	These models are approved only if bows are through-bolted (not tech-screwed) by the client: New England Windjammer Series 5000 Northern Star High Tunnel (not the Standard model)
Ledgewood Farms Moultonborough, NH (603-476-8829) www.ledgewoodfarm.com	Ledgewood Farm Gothic
Rimol Greenhouse Systems, Inc. Hooksett, NH (603-494-9426) www.rimol.com	Nor'Easter Northpoint (except 26 ft model) Eastpoint Rolling Thunder
Harnois Industries St. Thomas, Quebec (888-427-6647) www.harnois.com	Ovaltech I Ovaltech III
Four Season Tools Kansas City, MO (816-444-7330) www.SmallFarmTools.com	Four Season Moveable Gothic

** These lists are subject to update – product lists with later dates will supersede this list. This product list is not all inclusive and does not imply NRCS endorsement of any product, company, or position.* Note regarding models not on the list above: Vendor claims that models are "NRCS approved" may not be accurate since minimum criteria/specifications vary from state to state. *Models that do not meet Maine's Criteria are not eligible for Maine NRCS programs.*

High Tunnel Design Recommendations

- Avoid plywood on southern end of the tunnel if oriented N-S. Paint white to increase light reflectance.
- Vents on each end peak are strongly recommended.
- Construct a minimum 6 ft. x 6 ft. opening on each endwall for increased ventilation and access (e.g. 2-36 inch wide doors on each end or larger roll-up, sliding, or hinged doors).
- Evaluate the size of the equipment to be used in the tunnel when constructing the endwalls and the height of the sidewall as it relates to the height of the target crops.
- Add more purlins and/or wind bracing kits in windier areas.
- In high wind areas, consider orienting the high tunnel with end wall facing prevailing wind.
- Movable tunnels may have fewer ground posts, and therefore may be more susceptible to wind.