

# Windbreak/Shelterbelt Establishment

Wisconsin Job Sheet 380



## Definition

Windbreaks or shelterbelts are plantings of single or multiple rows of trees or shrubs that are established for environmental purposes. Living snow fences are an important variation of windbreaks and shelterbelts in some parts of the country. The height of the tallest row and overall density of foliage and branches of an individual windbreak/shelterbelt planting greatly influence the size of the nearby area that is protected or sheltered.

## Purpose

Windbreaks or shelterbelts are generally established to protect or shelter nearby, leeward areas from troublesome winds. Such plantings are used to reduce wind erosion, protect growing plants (crops and forage), alter micro-environment to enhance plant growth, manage snow, improve irrigation efficiency, and delineate field boundaries. Windbreaks also protect structures and livestock, provide wildlife habitat and travel corridors, enhance aesthetics, and increase carbon storage. Also, when used as a living screen, windbreaks control views, reduce noise, and intercept chemical drift.

## Where Used

Windbreaks are “environmental buffers” that are planted in a variety of settings, such as on cropland, pasture, and rangeland (sometimes referred to as “living barns”); along roads, farmsteads, feedlots; and in urban areas.

## Resource Management System

Windbreaks and shelterbelts are normally established concurrently with other practices as part of a resource management system for a conservation management unit. For example, conservation crop rotation, residue management, and windbreaks can act together to control wind erosion year-round.



A windbreak or shelterbelt usually consists of multiple rows, with shrubs in the outer rows and taller trees in the interior. Complementary practices work with these environmental buffers to further control wind erosion and snow deposition and modify site characteristics for habitat and screening purposes. For comprehensive protection of a field, windbreaks are placed in a series across the area (typically spaced at intervals of 5 to 20 times the height of each windbreak), with individual windbreaks running parallel to one another, but perpendicular to prevailing winds.

## Windbreak / Shelterbelt

A windbreak or shelterbelt usually consists of multiple rows, with shrubs in the outer rows and taller trees in the interior. Complementary practices work with these environmental buffers to further control wind erosion and snow deposition and modify site characteristics for habitat and screening purposes.

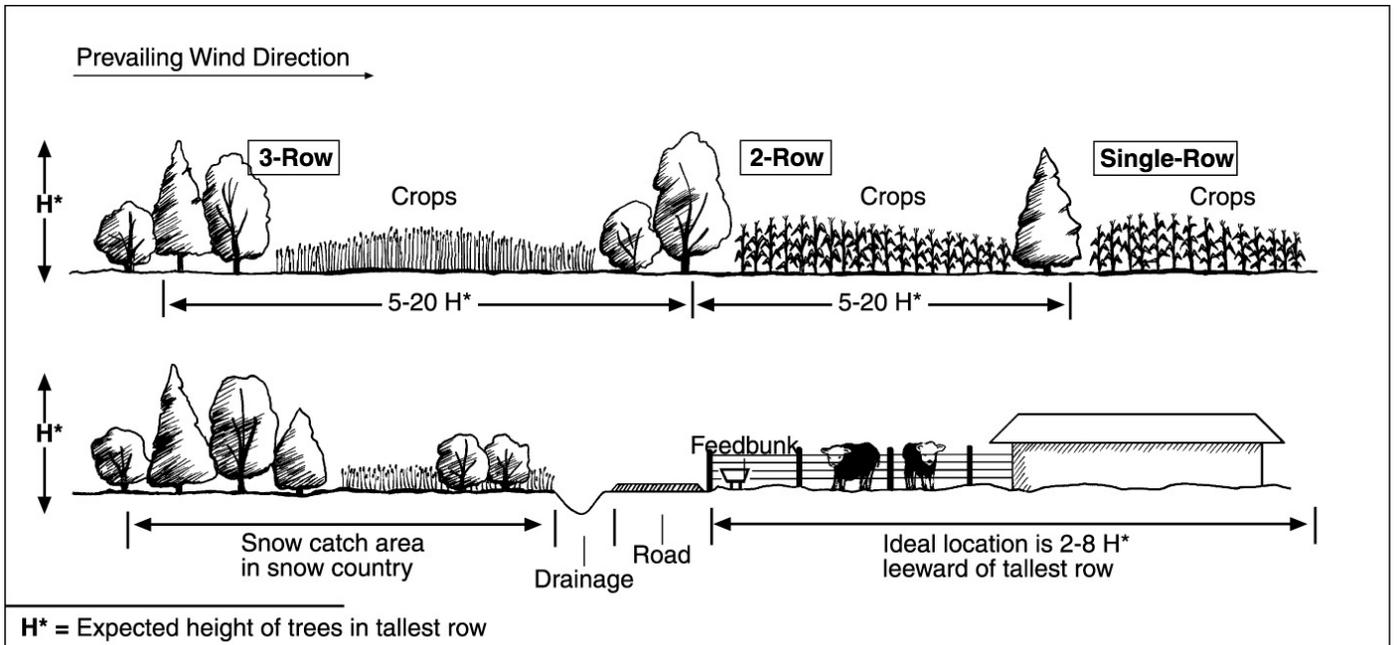
For comprehensive protection of a field, windbreaks are placed in a series across the area (typically spaced at intervals of 5 to 20 times the height of each windbreak), with individual windbreaks running parallel to one another, but perpendicular to prevailing winds.

Wisconsin

Natural  
 Resources  
 Conservation  
 Service

[nrcs.usda.gov/](http://nrcs.usda.gov/)





A windbreak or shelterbelt usually consists of multiple rows, with shrubs in the outer rows and taller trees in the interior. Complementary practices work with these environmental buffers to further control wind erosion and snow deposition and modify site characteristics for habitat and screening purposes. For comprehensive protection of a field, windbreaks are placed in a series across the area (typically spaced at intervals of 5 to 20 times the height of each windbreak), with individual windbreaks running parallel to one another, but perpendicular to prevailing winds.

## Wildlife

For plantings to function properly, access by livestock and certain wildlife must be managed year-round (use exclusion and fencing). Connecting shelterbelts with existing or planned perennial vegetation, such as woodlots and woody draws (tree/shrub establishment) or riparian areas (riparian forest buffer), provides additional benefits for wildlife and aesthetics. Select native or adapted species that provide wildlife food or cover.

## Operation and Maintenance

Trees and shrubs in a windbreak or shelterbelt need periodic maintenance and, later on, possible renovation (tree/shrub pruning and windbreak/shelterbelt renovation). In arid areas windbreaks may need supplemental water or the use of water-harvesting techniques for successful establishment.

## Plans and Specifications

Provisions are entered on the Wisconsin 380 Job Sheet. Specifications are prepared in accordance with the WI NRCS Conservation Practice Standard, Windbreak/Shelterbelt Establishment (Code 380), and WI Forestry Technical Note 4.



# Windbreak/Shelterbelt Establishment Worksheet

Landowner \_\_\_\_\_ Tract Number \_\_\_\_\_ Field Number \_\_\_\_\_

PURPOSE (CHECK ALL THAT APPLY)	
<input type="checkbox"/> Reduce soil erosion from wind	<input type="checkbox"/> Provide living noise screens
<input type="checkbox"/> Protect plants from wind-related damage	<input type="checkbox"/> Provide living visual screens
<input type="checkbox"/> Alter micro-environment for enhancing plant growth	<input type="checkbox"/> Provide living barriers against airborne chemical drift
<input type="checkbox"/> Manage snow deposition	<input type="checkbox"/> Delineate property and field boundaries
<input type="checkbox"/> Improve irrigation efficiency	<input type="checkbox"/> Enhance aesthetics
<input type="checkbox"/> Enhance wildlife habitat by providing travel corridors	<input type="checkbox"/> Increase carbon storage
<input type="checkbox"/> Provide shelter for structures, livestock, and recreational areas	

LOCATION AND LAYOUT	
Width (feet; include widths of maintenance areas next to outer rows):	
Length (feet):	Area (acres):
Total area of zone protected/sheltered (acres; based on expected height and density of the windbreak/shelterbelt):	
Additional requirements:	



## WOODY PLANT MATERIALS INFORMATION

Species/cultivar by row number	Kind of stock <sup>1</sup>	Planting Dates	Distance between plants within row (ft.)	Total number of plants for row	Distance (ft.) from this row to next row <sup>2</sup>
1					
2					
3					
4					
5					
6					
7					

<sup>1</sup>BAreroot, COntainer, CUtting; include size, caliper, height, and age as applicable.

<sup>2</sup>Adjusted for width of maintenance equipment.

## TEMPORARY STORAGE INSTRUCTIONS

Planting stock that is dormant may be stored temporarily in a cooler or protected area. For stock that is expected to begin growth before planting, dig a V-shaped trench (heeling-in-bed) sufficiently deep and bury seedlings so that all roots are covered by soil. Pack the soil firmly and water thoroughly. Additional requirements:

## SITE PREPARATION

Remove debris and control competing vegetation to allow enough spots or sites for planting and planting equipment. Prepare supplemental moisture materials for installation if required by trees and/or shrubs. Additional requirements:



## PLANTING METHODS

For container and bareroot stock, plant stock to a depth even with the root collar in holes deep and wide enough to fully extend the roots. Pack the soil firmly around each plant. Cuttings are inserted in moist soil with at least 2 to 3 buds showing above ground. Additional requirements:

## OPERATION AND MAINTENANCE

Inspect windbreak/shelterbelt components periodically and protect from damage so proper function is maintained. Replace dead or dying tree/shrub stock and continue control of competing vegetation to allow proper establishment. Install and begin supplemental irrigation if required. Additional requirements:

Attach an aerial view or a side view of the practice below. Other relevant information, complementary practices and measures, and additional specifications may be included. **Photos must be included.**

Additional Specifications and Notes:



# Windbreak/Shelterbelt Establishment

Wisconsin Job Sheet 380



## Required Documentation and Verification

Practice amount applied is field verified by \_\_\_\_\_ on \_\_\_\_\_

Before payment is made, the following information is required to be in the case file:

- Photographs of the established practice (must include:):
  - Statement "Photo was taken in the field by (enter name)"
  - Date photo was taken in the field
  - Statement of what the photo represents if it needs clarification
- Field verification is documented and a certified planner verified "as-installed" this practice meets NRCS standards and specifications.

### Practice Certification (NRCS USE ONLY)

I certify that the practice as-installed is complete and meets the applicable Wisconsin NRCS Conservation Practice Standard and all applicable practice specifications. Any changes to the original practice design have been approved and are documented on the original practice design "as-installed".

\_\_\_\_\_  
Certified Planner (print) (sign) (date)

Wisconsin  
Natural  
Resources  
Conservation  
Service

[nrcs.usda.gov/](http://nrcs.usda.gov/)

