

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

**CROSS WIND RIDGES**

(Ac.)

CODE 589A

**DEFINITION**

Ridges formed by tillage, planting, or other operations and aligned across the prevailing wind erosion direction.

**PURPOSE**

Reduce soil erosion from wind.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice applies to cropland.

It is best adapted on soils that are stable enough to sustain effective ridges and cloddiness, such as clayey, silty, and sandy loam soils.

It is not well adapted on unstable soils such as sands, loamy sands, and certain organic soils.

**CRITERIA**

Ridge height, spacing, and direction.

Acceptable combinations of ridge height, spacing, and direction are those having ridge roughness Krd values equal to 0.8 or less during those periods when wind erosion is expected to occur. Ridge roughness is discussed in the National Agronomy Manual, Subpart 502.32, and K values are displayed in Exhibit 502-4 or 502-5.

Cross wind ridges normally will be implemented in conjunction with other conservation measures such as seasonal residue management, or other conservation tillage practices.

**CONSIDERATIONS**

Transport of wind-borne sediment and sediment-borne contaminants offsite can be reduced by this practice when used in a resource management system.

Tillage should be performed in a direction as close to perpendicular to the prevailing wind direction, during the critical erosion period, as possible.

Use tillage speeds in excess of 3.5 miles per hour (mph) for greater effectiveness. Use low speed when the compacted soil horizon is relatively unstable and close to the soil surface.

Optimum ridges are two to eight inches in height, have a ridge to height ratio (h/s) of one to four (example: two inch ridges at eight inches apart), and have surface clods of one to four inches in diameter.

Tillage should be deep enough to contact soil horizons to bring clods to the surface. Depth shall not be less than two inches and not more than eight inches for the application of this practice.

The duck-foot cultivator is best for lifting clods on medium textured soils. Duck-foot cultivators make higher ridges than chisels. Wider spacing of duck-foot shovels is feasible if the soil sufficiently cloddy. Narrow chisels, preferably heavy-duty type, are best on compact soils of substantial clay content. In extremely loose or sandy soils, the lister or shovel type attachments are most effective.

**PLANS AND SPECIFICATIONS**

Specifications for establishment and maintenance of this practice shall be prepared

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service [State Office](#), or visit the [electronic Field Office Technical Guide](#).

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for each field or treatment unit according to the Criteria, Considerations, and Operation and Maintenance described in this standard.

Specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan or other acceptable documentation.

### **OPERATION AND MAINTENANCE**

Ridges shall be established or re-established by equipment such as chisel plows, drills with hoe openers, or other implements that form effective ridges.

After establishment, ridges shall be maintained through those periods when wind erosion is expected to occur, or until growing crops provide enough cover to protect the soil from wind erosion.

If ridges deteriorate and become ineffective due to weathering, erosion, or change in expected prevailing wind erosion direction, they shall be re-established unless doing so would damage a growing crop.

During conditions of extended drought or low moisture periods, ridges will not effectively form and establish ridges may rapidly dry out and disintegrate. During these periods, reestablishment of ridges may not be possible.