

**Natural Resources Conservation Service  
Conservation Practice Standard**

**CHISELING AND SUBSOILING  
(Ac.)  
CODE 324**

**DEFINITION**

Loosening the soil, without inverting and with a minimum of mixing of the surface soil, to shatter restrictive layers below normal plow depth that inhibit water movement or root development.

**PURPOSE**

To improve water and root penetration, aeration and soil aggregation.

**CONDITIONS WHERE PRACTICE APPLIES**

Chiseling and subsoiling are applicable on all cropland soils where restrictive layers are present and at seedbed preparation for forage crops.

**CRITERIA**

Chiseling applies to soils with restrictive layers less than 8 inches deep.

Subsoiling applies to soils with restrictive layers greater than 8 inches deep.

**CONSIDERATIONS**

- Chisel plows with straight points will cover less residue than twisted or helical points.
- Parabolic chisel or subsoil shanks require significantly less energy to pull than straight shanks.
- Chiseling or subsoiling will decrease runoff and increase infiltration by mechanically shattering restrictive layers in the soil.
- Chiseling or subsoiling may be needed yearly on soils that tend to form traffic pans.
- Chiseling or subsoiling can increase crop rooting depth, thus increasing the depth of nitrate utilization by plant roots.

**PLANS AND SPECIFICATIONS**

Work shall be performed when soils are dry in order to maximize the shattering effect. Soil moisture should be at levels that are normally considered too dry for optimum turnplowing.

For chiseling, shank spacing shall be no wider than 24 inches. For subsoiling, shank spacing shall be no wider than 48 inches.

Chiseling or subsoiling should be performed on or near the general contour of sloping lands with moderate to severe soil erosion hazards.

If it meets spacing requirements in the item above, chiseling may be performed in crisscross fashion. The final operation shall be performed across the general slopes of the field.

Chisels or subsoilers should be set deep enough to thoroughly shatter the restrictive layer:

- Chisels 6 to 8 inches.
- Subsoilers 8 to 24 inches.

**OPERATION AND MAINTENANCE**

Chiseling and subsoiling are routinely recommended to shatter artificial plow pans formed in agricultural soil profiles as a result of compaction from heavy equipment, disking, or livestock trampling. Frequency of chiseling or subsoiling operations should be based on soil observations to determine need.

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.