

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

POND SEALING OR LINING

BENTONITE SEALANT

**(No.)
CODE 521C**

DEFINITION

Installing a fixed lining of impervious material or treating the soil in a pond mechanically or chemically to impede or prevent excessive water loss.

SCOPE

This standard pertains to the sealing of ponds with bentonite or similar high swell clay materials.

PURPOSE

To reduce seepage losses in ponds to an acceptable level.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where water loss from a pond through leakage is or will be of such proportion as to prevent the pond from fulfilling its planned purpose or where leakage will damage land and crops or cause waste of water or environmental problems.

This practice is not applicable to ponds constructed for storage of manure or feedlot runoff.

PLANNING CONSIDERATION

Consider the effect upon all components of the water budget, especially effects on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and ground water recharge.

Consider any possible physical damage to the liner from wave action or other means.

DESIGN CRITERIA

Ponds to be sealed shall be constructed to meet NRCS standards for, irrigation storage reservoirs (436), ponds (378), or wildlife watering facilities (648), as appropriate.

Soil properties. Sealing with bentonite or similar materials is more applicable on coarse-grained soils where more than half of the soil material is larger than that passing the No. 200 sieve size.

Rate of application. The rate of application shall be based on laboratory tests unless sufficient data are available on the field performance of previously tested soils that are similar in texture and chemical properties to the soils to be sealed.

In the absence of laboratory tests or field performance data on the soils to be sealed, the minimum application shall be:

Pervious soil	Application method	Application rate <i>lb/ft²</i>
Clay	Mixed layer	1.0-1.5
Sandy silt	Mixed layer	1.0-1.5
Silty sand	Mixed layer	1.5-2.0
Clean sand	Mixed layer	2.0-2.5
Open rock or gravel	Clay or sand mixed layer	2.5-3.0

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

Thickness of treated blanket. The minimum thickness of the finished treated blanket shall be 4 in. for water depths up to 8 ft. Additional thickness shall be provided for greater water depths and for areas subject to wave action.

PLANS AND SPECIFICATIONS

Plans and specifications for sealing ponds with bentonite shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.