

NATURAL RESOURCES CONSERVATION SERVICE
 CONSERVATION PRACTICE STANDARD

POND SEALING OR LINING
 BENTONITE SEALANT

(number)
 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.

similar to the soil to be sealed 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:

PURPOSE

Reduce seepage losses in ponds to an acceptable level.

Pervious soil	Application method	Application rate
		pounds per square foot
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

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 can cause waste of water or environmental problems.

CRITERIA

Ponds to be sealed shall be constructed to meet the NRCS Conservation Practice Standard for Irrigation Pits (552A) or Regulating Reservoir (552B), Irrigation Storage Reservoir (436), Pond (378), Waste Treatment Lagoon (359), Waste Storage Facility (313), 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

Thickness of treated blanket. The minimum thickness of the finished treated blanket shall be 4 inches for water depths up to 8 feet. 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 keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

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

521C-2

OPERATION AND MAINTENANCE

A maintenance job sheet or maintenance plan shall be provided for each resource management system and practice. The maintenance plans for the pond sealing shall include maintenance requirements for the sealant and all pond components and appurtenances. Maintenance should include inspection of appurtenances on a periodic basis and after each large storm. Failures should be corrected as soon as possible to prevent major damages.

NATURAL RESOURCES CONSERVATION SERVICE
MISSOURI CONSTRUCTION SPECIFICATION

FOR

POND SEALING OR LINING
BENTONITE SEALANT

(number)
Code 521C

General

Construction operations shall be carried out in a manner and sequence that erosion and air and water pollution are minimized and held within legal limits.

The completed job shall present a workmanlike appearance and shall conform to the line, grades, and elevations shown on the drawings or as staked in the field.

All operations shall be carried out in a safe and skillful manner. Safety and health regulations shall be observed and appropriate safety measures used.

Application shall be carried out in a manner that erosion and air and water pollution are minimized. The completed job shall present a workmanlike finish.

Application

Application shall be as follows:

1. The area to be treated shall be drained and dried.

2. All vegetation, trash, stones, and other objects large enough to interfere with the operation shall be removed.

3. Holes shall be filled.

4. Sealing material shall be distributed evenly over the surface.

5. For mixed layers, the material shall be thoroughly mixed to the specified depth with a disk, rototiller, or similar equipment.

6. Each treated layer shall be compacted to a dry density of 90 percent or more of maximum Standard Proctor with soil at optimum moisture content.

7. Treated areas shall be protected from puncture by livestock trampling. Areas near the waterline and at points of concentrated surface flow into the pond shall be protected against erosion.

Additional details: _____
