

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

POND SEALING OR LINING - FLEXIBLE MEMBRANE

(NO.)

CODE: 521A

DEFINITION

A functionally continuous sheet of synthetic or partially synthetic, flexible, waterproof material.

PURPOSE

To control seepage from water storage structures and ponds.

To prevent environmental impairment or pollution of ground water and soils by seepage from waste storage and waste treatment facilities.

CONDITION WHERE PRACTICE APPLIES

On all ponds and water storage structures that require treatment to control seepage within acceptable limits.

On all waste storage and waste treatment facilities built in or of excavated earth, and which require treatment to prevent the migration of contaminants from the site.

CRITERIA

Structures to be lined shall have been constructed to meet applicable NHCP standards, including Ponds, 378; Irrigation Pits or Regulating Reservoirs, 552; Irrigation Storage Reservoirs, 436; Waste Treatment Lagoons, 359; Waste Storage Facilities, 313; and Wildlife Watering Facilities, 648. All inlets, outlets, ramps, and other appurtenances may be installed before, during, or after the liner placement, but shall be done in a manner that does not damage or impair the proper operation of the liner.

All flexible membranes shall be certified by the manufacturer to be suitable for the intended use.

All flexible membranes shall meet the material and installation requirements of the plans and specifications provided for each installation.

Minimum Criteria for Synthetic Membranes	
Type	Limiting Parameter
HDPE	40 mil thickness
LLDPE	40 mil thickness
PVC	30 mil thickness
GCL	0.75 lb./sq. ft. (bentonite)

Select soil materials shall be used as cover for liners where required for the proper performance, protection, and durability of the installation. Cover soils shall not contain sharp, angular stones or any objects that could damage the liner. Maximum allowable particle size of soil cover material shall be 3/8-in (10 mm), unless the liner is cushioned by a needle punched, non-woven geotextile.

All structures shall be fenced to protect liners from livestock or wildlife traffic and damage.

Manufacturer recommendations shall be followed with regard to protection from weather and exposure.

Seams shall be constructed according to manufacturer's recommendations and shall be tested to assure watertightness.

Flexible membrane liners shall be placed so that the bottom of the liner is a minimum of one foot above the seasonal high water table when used in a manure storage or treatment facility (SCDHEC, 2002)

CONSIDERATIONS

Venting should be considered if gas build up under the liner is anticipated.

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

If high water tables could adversely affect the proper functioning of the facility, interceptor or relief type drainage systems should be considered to control uplift pressures.

Safety. Emergency exit provisions such as a life preserver or rope ladder should be placed at several points around the structure.

PLANS AND SPECIFICATIONS

Plans and specifications shall be prepared for specific field sites in accordance with this standard and shall describe the requirements for applying the practice to achieve its intended uses.

OPERATION AND MAINTENANCE

A plan for operation and maintenance of the liner shall be prepared.

REFERENCES

SCDHEC. June 2002. Standards for Permitting of Animal Agriculture Facilities R. 61-43.