

6 thru 9 Commonly Asked Questions When Pondering dry ponds

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Q: Why is my pond dry? A: Not all ponds are built on sites with good soil texture (% sand/silt/clay). The clay content is important for a pond to seal. Starting the pond construction with a core trench is essential. The core trench is constructed by digging a trench the length of the dam. The trench is dug down through the top soil, rock, sand or all material until a good clay soil layer is reached. Most core trenches are at least 4 feet. Clay soil is then packed back into the trench. The lack of a core trench is one of the major reasons ponds leak. Often a pond is built near a rock layer. If rock is encountered during construction, all rock layers must be padded with 6 inches or more of a high clay content material.

Q: How can you tell if a soil has enough clay? A: Perform a ribbon test.

Ribbon test – Squeeze a moistened ball of soil into a ribbon between thumb and fingers.

Ribbons greater than 2 inches = fine texture (clayey) soil - Good for pond construction

Q: Can you add materials to help seal a pond? A: Dispersants such as soda ash or rock salt are used for sealing lagoons or ponds. Dispersants work by causing clay particles to swell and repel each other, thus destroying soil structure. All dispersants are to be incorporated and compacted in six-inch layers during the construction. It should be noted that adding the dispersants to an existing pond may not work. It will likely be necessary to drain the pond, clean out the sediment, scarify the bottom of the pond, add the sealant, and then compact the pond.

Soda Ash Application rate: 10-25 lbs/100 sq. ft. Notes: Makes a good seal. Soil must contain >15% clay, and >50% clay + silt

Rock Salt Application rate: 20 to 33 lbs/100 sq. ft. Notes: Least expensive. (One reference suggested rates as high as 400 lbs per 100 sq. ft. during new construction would not harm fish or inhibit vegetation).

Q: What about adding bentonite to help create a seal? A: Bentonite is a special type of clay that swells when water is added to it so it can also be used to line a pond. However, using bentonite is an expensive option. When bentonite dries out, it will crack, and so it is not recommended for use in a pond where the water level fluctuates greatly. If bentonite is used, it should be added during the construction process and be mixed and compacted with the rest of the soil being used to construct the pond.

Bentonite Application rate: 100-150 lbs/100 sq. ft. (silty soil) 200-300 lbs/100 sq. ft. (sandier soil)

Notes: Most expensive option

For more information on ponds, see the USDA-NRCS publication: “Ponds – Planning, Design, Construction” at:

https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_030362.pdf