



POLY
TANKS

INSTALLATION PROCEDURES SUPPLEMENT

BACKFILL MATERIALS SELECTION-Clay Soils

The Roth RMT Septic/Cistern tank is by design and construction a flexible structure and therefore requires a compacted bed underneath and a compacted rigid backfill soil structure around the tank to provide the required support and structural integrity. In many installation sites, native material excavated from the site is suitable for bedding and backfill material. In other instances, the native soil contains a higher percentage of silt and clay particles giving the soil shrink and swell characteristics that render it unsuitable for this structural requirement.

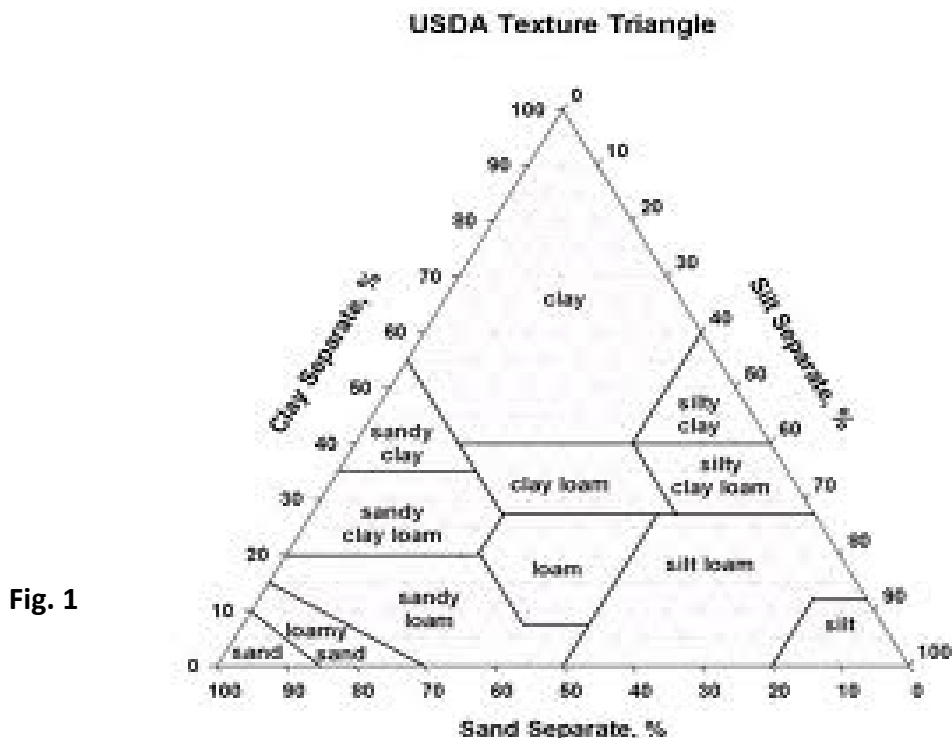


Fig. 1



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Acceptable native materials from the USDA soil triangle (Fig. 1) are as follows:

Cover fill depths 6" to 24"

- Sand
- Loamy sand
- Sandy loam
- Sandy clay loam
- Sandy clay
- Silt loam, clay loam and clay only if the sand content in each is greater than 30% (retained on a No. 200 sieve per ASTM D2487)
- Silt loam, silt, clay loam, silt clay loam, silty clay and clay in which sand content is less than 30% per ASTM D2487 and the soil can be shown to be dilatant per the field test per ASTM D2488 Section 14.3 described on Page 4



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Cover fill depths from 24 inches-

- Sand
- Loamy sand
- Sandy loam
- Sandy clay loam
- Sandy clay
- Silt loam, clay loam and clay only if the sand content in each is greater than 30% (retained on a No. 200 sieve per ASTM D2487)

If native material is unsuitable, granular, compactible material must be imported. Suggested imported materials are as follows:

Sand

Pea gravel clean

Pea gravel with fines

Crushed stone particle size smaller than 1 inch

Graded crushed stone i.e. #57 base mix



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Field dilatancy Test– ASTM D2488

- a) Mold a ½-inch-diameter (13 mm) soil test specimen in the palm of the hand. The test specimen shall be representative of the prospective tank backfill soil.
- b) Mold the test specimen, adding water if necessary, until it has a soft, but not sticky consistency.
- c) Smooth the soil ball in the palm of one hand with a spatula or similar instrument.
- d) Shake the soil sample by striking the hand vigorously against the other hand approximately 5 times. Do not strike hand in a manner that results in an injury.
- e) Immediately following shaking, gently squeeze the soil in the palm of the hand.
- f) Repeat shaking test if necessary to evaluate soil.
- g) Note whether water appears on the surface of the soil specimen during shaking and squeezing.
 - i. If water appears on and disappears from the surface of the soil specimen, the soil is dilatant, and is suitable.
 - ii. If no visible change or only a slight visible change in the soil specimen occurs due to shaking or squeezing, the soil is not dilatant, and is unsuitable.