Leaflet for selection of suitable backfill material for all GRAF CARAT earth tanks

The backfill material must be:

- Easily compactable and forming a firm packing around the tank
- Water-permeable
- Free of sharp and/or pointed objects that may damage the tank wall

Recommended
Round grain gravel, grain size 8 to 16mm
(smaller grain sizes can be used)
Advantage:

- Very easy to process
- Forms no cavities (no "bridge formation")
- Screened gravels are considered self-compacting and usually installed loosely poured without post-compaction
- Cannot be washed out
- High inner friction angle -> high own support
- Does not store water -> very high drainage performance
- Generally lighter than sand or chippings

Gravel sand / filling gravel with grain size 0 to 16mm
Advantage:

- High inner friction angle -> high own support
- Barely stores any water -> high drainage performance
- Readily available

Disadvantage:

- More difficult to process than gravel -> must be compacted carefully in layers; otherwise, there is a risk of cavity formation ("bridge formation")
- Must only be installed by specialists

Chippings / paving chippings / basalt chippings, grain size max. 16 mm
Advantage:

- Cannot be washed out
- High inner friction angle -> high own support
- Does not store water -> very high drainage performance
- Generally lighter than sand

Disadvantage:

- More difficult to process than gravel -> must be compacted carefully in layers; otherwise, there is a risk of cavity formation ("bridge formation")
- Must only be installed by specialists
- More expensive and harder to acquire than gravel or sand

Filling sand / concrete sand, grain size 0 to 2mm
Advantage:

- Readily available
- Good inner friction angle when dry -> good own support

Disadvantage:

- More difficult to process than gravel -> must be compacted carefully in layers; otherwise, there is a risk of cavity formation ("bridge formation")
- Must only be installed by specialists
- When saturated, sand has no own support, since the inner friction angle is removed by water.
- Can be washed out

Excavated earth can only be used for backfilling around the earth tank if it corresponds to the properties of the above materials.
Cohesive soils (loam/clay, etc.) are **not** suitable for backfilling of the excavation pit around the tank.

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