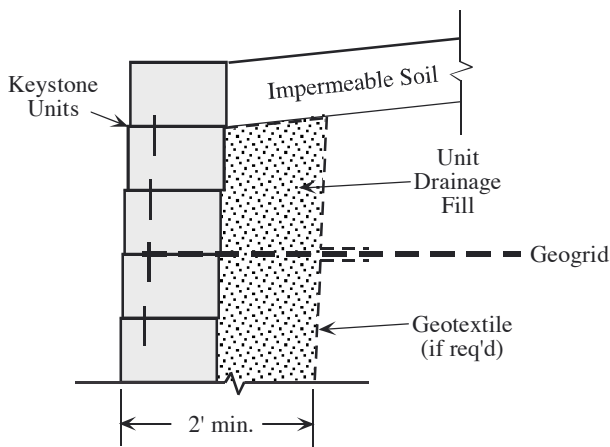


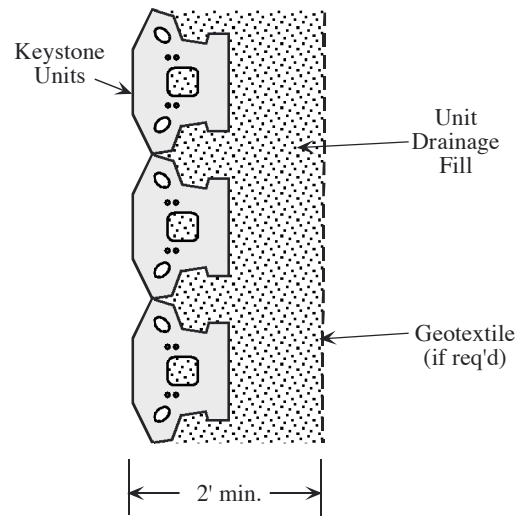


# Unit Drainage Fill

Unit drainage fill is defined as a free draining aggregate material such as ASTM designation No. 57 or 67 stone which is small enough (1" minus material) to easily fill unit cores and the gaps between units while containing minimal fine material (sands and silts) that could pipe through wall joints from occasional water flow. Unit drainage fill can be used in conjunction with geotextile filter fabrics to provide positive filtration and soil retention in areas where groundwater flow is expected such as with detention basin and flood plain structures.



**Unit Drainage Fill Section**



**Unit Drainage Fill Plan**

Unit drainage fill provides significant technical benefit for modular wall performance and construction:

- \* Prevents the buildup of hydrostatic pressures near the wall face through a significantly sized drainage zone.
- \* Provides a non-frost susceptible zone within and directly behind the wall units minimizing localized effects of freeze-thaw in moist soils behind wall.
- \* Provides an easily compacted material behind the wall units where compaction effort is difficult without displacing the wall facing units.
- \* Improves inter-unit shear and geogrid connection strength for units with cores and tapered sides.

Unit fill drainage material is typically described as a 1/2" - 3/4" clean stone (1" minus or No. 57 stone are common). While many granular materials can be described as "free draining", the following gradation is recommended by Keystone based on experience:

Sieve	% passing
1"	100
3/4"	75 - 100
#4	0 - 10
#50	0 - 5

The intent of this specification is to limit the top size to 1" and restrict the sand and silt component to less than 10% to avoid migration of fines and for ease of placement and compaction.