



NATIONAL CLAY PIPE INSTITUTE

Clay – The Permanent Solution

## Uniform Soil Groups for Pipe Installation<sup>1</sup> from ASTM C12

Soil Class	Definition	Symbols
Class I <sup>2</sup>	<b>Crushed Rock</b> 100% passing 1-1/2 in. sieve, </= 15% passing #4 sieve, </= 25% passing 3/8 in. sieve, </= 12% passing #200 sieve	
Class II <sup>3</sup>	<b>Clean, Coarse Grained Soils</b> Or any soil beginning with one of these symbols (can contain up to 12% fines) Uniform fine sands (SP) with more than 50% passing a #100 sieve should be treated as Class III material	GW, GP, SW, SP
Class III	<b>Coarse Grained Soils With Fines</b> Or any soil beginning with one of these symbols	GM, GC, SM, SC
	<b>Sandy or Gravelly Fine Grained Soils</b> Or any soil beginning with one of these symbols, with >/= 30% retained on #200 sieve	ML, CL
Class IV	<b>Fine-Grained Soils</b> Or any soil beginning with one of these symbols, with < 30% retained on a #200 sieve	ML, CL
Class V <sup>4</sup>	<b>Fine-Grained Soils, Organic Soils</b> High compressibility silts and clays, organic soil	MH, CH, OL, OH, Pt

- 1 Soil Classification descriptions and symbols are in accordance with ASTM D2487 and ASTM D2488
- 2 For Class I, all particle faces shall be fractured.
- 3 Materials such as broken coral, shells, slag, and recycled concrete (with less than 12% passing a #200 sieve) should be treated as Class II soils.
- 4 Class V soil is not suitable for use as a bedding or initial backfill material.

Table 6-1 from NCPI's Vitrified Clay Pipe Engineering Manual. See Chapter 6 for a full discussion of soil groups and bedding classes.