

Part 618 – Soil Properties and Qualities

Subpart B – Exhibits

618.90 Rock Fragment Modifier of Texture

Instructions for Table 1, Guide for determining rock fragment modifier of texture: First choose the row with the appropriate total rock fragments. Then read the criteria in the columns under “Gravel, cobbles, stones, and boulders,” starting from the left-most column and proceeding to the right. Stop in the first column in which a criterion is met.

Table 1.—Guide for Determining Rock Fragment Modifier of Texture. [Click here for an MS-Excel spreadsheet that calculates the texture modifiers for flat and nonflat rock fragments.](#)

Total Rock Fragments (Vol. %)	Gravel (GR), cobbles (CB), stones (ST), and boulders (BY) (Substitute channers for gravel and flagstones for cobbles, where applicable) ¹			
	IF $GR \geq 1.5 CB + 2 ST + 2.5BY$	IF $CB \geq 1.5 ST + 2 BY$	IF $ST \geq 1.5 BY$	IF $ST < 1.5 BY$
≥ 15 < 35	Gravelly	Cobbly	Stony	Bouldery
≥ 35 < 60	Very Gravelly	Very Cobbly	Very Stony	Very Bouldery
≥ 60 < 90	Extremely Gravelly	Extremely Cobbly	Extremely Stony	Extremely Bouldery
≥ 90	Gravel	Cobbles	Stones	Boulders
<p>Example: Determine the rock fragment modifier for a soil that contains 15 percent gravel (GR), 10 percent cobbles (CB), and 3 percent stones (ST).</p> <ol style="list-style-type: none"> Since total rock fragments are 28 percent, choose the first row (≥ 15 and < 35). Under “Gravel (GR), cobbles, . . .”, test the criterion in the left-most column. Is $15\%GR \geq 1.5 (10\% CB) + 2 (3\% ST)$? Answer: NO. Proceed to the next column. Is $10\%CB \geq 1.5 (3\% ST)$? Answer: YES. STOP. The modifier is <u>Cobbly</u>. <p>¹ If both flat and nonflat rock fragments are present, the quantity in each size class is summed (e.g., gravel + channers, cobbles + flagstones). The sums are used to determine the appropriate quantity/size modifier. If the amounts of flat and nonflat rock fragments within any given size class are equal, the nonflat modifier takes precedence. For example, if there are 10 percent gravel and 10 percent channers, the modifier is gravelly.</p>				

Soils With Pararock Fragments Only.—The same basic weighting rules apply with pararock fragments as with flat and nonflat rock fragments. However, the above spreadsheet only outputs modifier terms for rock fragments. To assign the correct pararock fragment modifier to the outputted rock modifier term, simply precede the modifier with “para.” For example, if the calculator outputs “very cobbly,” the correct modifier is “very paracobbly.”

Soils With Both Rock and Pararock Fragments.—Refer to instructions in Section 618.67(H)(2)(vii) of this handbook.