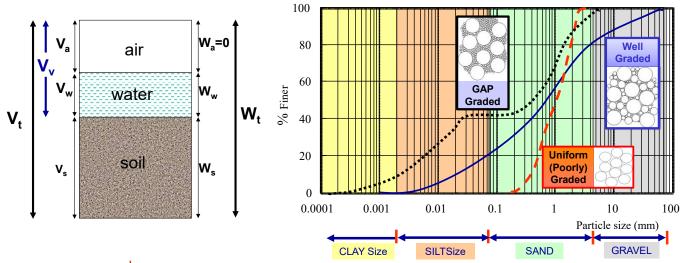
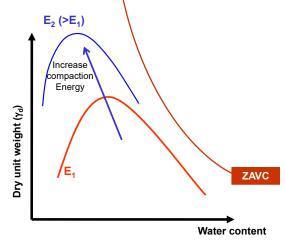
SOIL MECHANICS

VOLUME 1 SOIL CLASSIFICATION COMPACTION



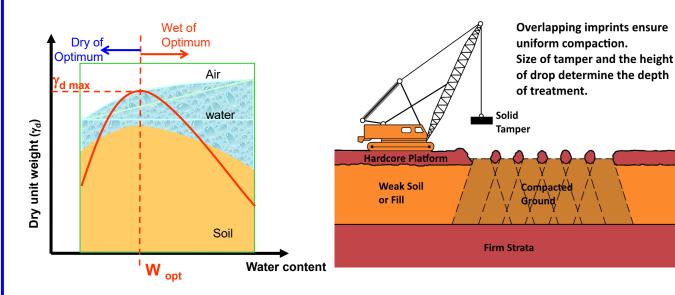


$$\gamma_d = \frac{\gamma_S}{1+e} = \frac{G_s \gamma_w}{1+e} \qquad \gamma_d = \frac{\gamma_t}{1+w}$$

$$\gamma_d = \frac{\gamma_t}{1+w}$$

$$wG_s = eS$$

$$n = \frac{e}{1+e}$$



Dr. GOUW TJIE-LIONG, ChFC 2021

SOIL MECHANICS VOL.1

Soil Phases and Classification Soil Compaction

Phase	s Definition and Soil Classification	SM01-1
1.	Soils, what are they?	SM01-2
	Soil formation	
	Soil type by its origin	
	Soil phase	
2.	Phases Definition and Relationship	SM01-6
3.	Soil Classification	SM01-24
	 Why do we need soil classification? 	
	Classification based on grain size	
	 Effective diameter: D₁₀, D₃₀ and D₆₀ 	
	 Uniformity and curvature coefficients 	
	Relative density of sands	
	Particle shape of coarse-grained soils	
	Particle shape of fine-grained soils	
	Bonding between clay particles	
	Specific surface of soils	
	Fine grained soils	
	Classification systems	
4.	Expansive Soil	SM01-58
5.	References	SM01-63
Soil C	ompaction	SM02-1
1.	Soil Compaction	SM02-2
	What is compaction?	
	 Objective of compaction? 	
	 Laboratory compaction test 	
	 Factors affecting compaction 	
	 Zero air void curve (ZAVC) 	
	Effect of water content	
	Effect of compaction energy	
	Effect of soil type	
	Compaction and clay fabric	
	Line of optimum	
	Field compaction equipment	
	Field specification	
	Typical compaction requirement	

	Compaction control test	
2.	Earth Moving Equipment	SM02-25
3.	Other Soil Compaction Method	SM02-29
	Dynamic compaction	
	• Vibroflotation	
	• Blasting	
4.	References	SM02-36