

Qno: 01. What is difference between Standard Proctor test and Standard penetration test.

Standard penetration test

① This test is an situ dynamic penetration test designed to provide information about geotechnical properties.

② its apparatus are Standard split spoon Sample drop Hammer Weight 63.5 kg Guiding rod

Standard proctor test

This test is used to determine the compaction of different types of soil.

② its apparatus are used is cylindrical metal mould having internal dia 4" or 6" The internal effective height of 4.6" & collar of 2".

③ It can be also used to determine the uncontrolled strength of cohesive soil.

④ This test provide samples for identification purpose and provide a measure of penetration resistance

The max optimum moisture content is achieved for highest value of dry density.

it is a labourtory method of experimental determining the optimal moisture content.

Q no! 02. What is the Classification of soil bases on free Swell index ?

Free Swell index	Degree of expansiveness	liquid limit	plastic limit	Shrinkage limit.
< 20	low	0.50	0-35%	>17%
20 - 35	moderate	40-60%	25-50%	8-18%
35 - 50	high	50-75%	35-65%	6-12%
> 50	very high	>60%	>45%	<10%

Q No! 03 Why is permeability test for  
Soil important

Permeability was measured using field  
head permeability and full scale pumping  
tests .

The permeability test is laboratory  
experiment conducted to determine  
Permeability of soil . permeability test of  
Soil is important because :

1. To know whether plant roots are being  
nourished by water
2. To check seepage of water into ground .

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3- it is also useful in fisheries to know about fish culture.

4- permeability is important because it affect the supply of root zone air, moisture and nutrients available for plant uptake.

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