

UNIVERSITY OF ENGINEERING AND TECHNOLOGY, TAXILA
DEPARTMENT OF CIVIL ENGINEERING

CONCRETE TECHNOLOGY

Sr.No.	Description	Standard Designation	Equipment
Concrete Mix Design			
1.	Mix design	ACI 318-11	Moulds, Concrete Mixer, Tamping rod, Chute
2.	Mix design (detailed)	ACI 318-11	Moulds, Concrete Mixer, Tamping rod, Chute
Compressive Strength Tests			
3.	Compressive strength test on Concrete / mortar cubes	BS 4550 -3.4:1978	Compression Testing Machine
4.	Compression test on cylinders	ASTM C-39	Compression Testing Machine
5.	Compression test on hollow & solid blocks	ACI530.1/ASCE 6/TMS 602	Compression Testing Machine
6.	Compressive Strength of Tuff pavers/ Tiles	ASTM C 936-13	Compression Testing Machine
7.	Compression test on bricks	ASTM C 67-03	Compression Testing Machine
Bricks Tests			
8.	Water absorption of bricks	ASTM C 67-03	Water Tank, Electric Oven
9.	Efflorescence test of bricks	ASTM C 67-03	Trays of different sizes
Non Destructive Tests			
10.	Non-destructive testing using Rebound hammer, Ultrasonic tester, Rebar locator	ASTM C805 -13 ASTM C597-02	Schmidt Hammer & Accessories UPV Apparatus & Accessories Profometer
11.	Core test performed (Cutting+Testing)	ASTM C 42/C42 M-13	Core Cutter Machine & Accessories, Compression Testing Machine
12.	Core test (provided by the client)	ASTM C 42/C42 M-13	Compression Testing Machine
Cement Tests			
13.	Consistency Note: Consistency test is essential for setting time test.	BS 4550-3.4	Vicat Apparatus, Trays, Spatulla
14.	Initial setting time	BS 4550-3.4	Vicat Apparatus, Trays, Spatulla
15.	Final setting time	BS 4550-3.4	Vicat Apparatus, Trays, Spatulla
16.	Soundness of cement	BS 4550-3.4	Le-Chatlier's Soundness Kit
17.	Density/Specific gravity of cement	BS 4550-3.4	Le-Chatlier's Flask
18.	a) Fineness of cement by sieve b) Fineness of cement by Blaine air permeability Apparatus	ASTM C 430-03 ASTM C 204-00	Blain Air Permeability Apparatus
19.	Compressive strength of cement using mortar cubes	BS 4550-3.4 or ASTM C109 /109M -02	Mortar Cube Moulds, Tamping Rod, Mixing Tray, Mortar Mixer
Sand Tests			
20.	Sieve analysis	ASTM C 136-14	Set of Sieves
21.	Fineness Modulus	ASTM C 136-14	Set of Sieves
22.	Water absorption	ASTM C 128-15	Bowls, Electric Oven, Electric Balance
23.	Specific gravity of fine aggregate	ASTM C 128-15	Pycnometer
24.	Soundness of fine aggregates using sodium Sulphate or Magnesium Sulphate	ASTM C88-04	Magnesium Sulphate or Sodium Sulphate Solution

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25.	Sand Equivalent test	ASTM 2419-02	Sand Equivalent Solution and Apparatus
26.	Density/Unit weight (Rodded or Loose) of fine Aggregate	ASTM C 128-15	
27.	Material Finer than 0.075mm	ASTM C117-13	Electric Balance, Sieves, Electric Oven, Wetting Agent
28.	Clay Lumps and Friable Particles	ASTM C142/C142M-10	Electric Balance, Sieves, Electric Oven
29.	Organic Impurities	ASTM C40/C40M-10	Glass Bottles, and Standard Solution
Coarse Aggregates Tests			
30.	Sieve analysis	ASTM C 136-14	Set of Sieves
31.	Specific gravity of aggregate	ASTM C-127-15	Specific Gravity Apparatus, Electric Balance, Bowls
32.	Water absorption of aggregates	ASTM C-127-15	Bowls, Electric Oven, Electric Balance
33.	Crushing Value of Coarse Aggregate	BS 812:Part 110	Crushing Value Apparatus, Compression Testing Machine
34.	Impact Value of Coarse Aggregate	BS 812:Part 112	AIV Apparatus
35.	Density/Unit weight (Rodded or Loose) of Coarse Aggregate	BS 812:Part 2	Cylindrical Measures, Tamping Rod
36.	Soundness (aggregates) by B.S. using sodium Sulphate or Magnesium Sulphate	ASTM C88-04	Magnesium Sulphate or Sodium Sulphate Solution, Steel Bowls
37.	Los Angeles Abrasion Value of Coarse Aggregate	ASTM C131/C131M-10	Los Angeles Abrasion Machine, Sieves, Electric Balance
38.	Clay Lumps and Friable Particles	ASTM C 142/C142M-10	Electric Balance, Sieves, Electric Oven
39.	Material Finer than 0.075mm	ASTM C117-13	Electric Balance, Sieves, Electric Oven, Wetting Agent
40.	Organic Impurities	ASTM C40/C40M-10	Glass Bottles, and Standard Solution
41.	Flakiness & Elongation Index	BS 812:Part 105.1 BS 812:Part 105.2	Flakiness and Elongation Index Apparatus, Electric Balance
Miscellaneous			
42.	Density of Concrete Block etc	-	
43.	Concrete Permeability Test	-	Concrete Permeability Apparatus, Concrete Moulds
44.	Verification of Report	-	-
45.	Duplicate Result	-	-
R.C.C. Pipes (3-EDGE BEARING TEST)			
46.	RCC Pipe 3 & 4 Inch Dia.	ASTM C497-14	Testing Frame, Hydraulic Jack, Leather Shims, Wooden Planks
47.	RCC Pipe 6 Inch Dia.	ASTM C497-14	-As Above-
48.	RCC Pipe 8 & 9 Inch Dia.	ASTM C497-14	-As Above-
49.	RCC Pipe 12 Inch Dia.	ASTM C497-14	-As Above-
50.	RCC Pipe 15 Inch Dia.	ASTM C497-14	-As Above-
51.	RCC Pipe 18 Inch Dia.	ASTM C497-14	-As Above-
52.	RCC Pipe 21 to 24 Inch Dia.	ASTM C497-14	-As Above-
53.	RCC Pipe 24 and 30 Inch Dia.	ASTM C497-14	-As Above-

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54.	Physical Verification of RCC pipe (3 to 15 Inch Dia)	-	-
55.	Physical Verification of RCC pipe (15 to 30 Inch Dia)	-	-