

Mortar

Mortar is the term which is used to describe the paste obtained by addition of water in mixture of binding materials (like - cement, lime etc.), and aggregate (like - sand) in definite proportion.

- The binding material used may also be referred as Matrix and the aggregate used may be referred also as adulterant.

(Matrix + Adulterant)

→ Quality of good sand to be used in preparation of Mortar:-

- It should be free from any organic or vegetative matter.
- It should be free from presence of chemical salts that are capable of absorbing the moisture from air.
↓
{ Alkalies → Staining & Efflorescent }
- It should be chemically inert.
→ No reactⁿ with binding material.
- It should be well graded.

→ Functions of Sand in Mortar:-

- (1) To provide Bulk :- Sand in mortar doesn't give strength to it, but adds bulk (Vol^m) in the mortar. Hence decreases its cost.

(2) Strength Adjustment :- Sand helps in adjusting the strength of Mortar that is achieved by increasing or decreasing it's proportion in it.

120gms $\left[\begin{array}{l} 1:1 \rightarrow \\ 1:2 \rightarrow \\ \dots \end{array} \right.$

(3) To increase the surface Area of applicatⁿ :- Sand subdivides the paste of binding material in numerous - layer thereby increases the surface area over which mortar can be spread or adhered.

(4) To prevent the shrinkage :- Sand in mortar prevents the shrinkage during it's setting process.

→ • Qualities of Good Mortar :- (i) Mortar should not affect the durability of the constructⁿ equipment & units in which it comes in contact with, (Steel, wood, stone)

(ii) It should be capable of developing the design stresses.

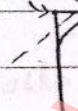
(iii) It should be capable of resisting the penetⁿ of water through it.

(iv) It should be cheap, durable hence and should possess high workability.

* Types of Mortar to be used for diff^t Constructⁿ Activities :-

Type of Const ⁿ	Types of Mortar
(1) Pointing Works	Cement Mortar 1:1
(2) Damp proofing Course (DPC)	" " 1:2
(3) Concrete Pavement	" " 1:2
(4) Plastering	" " 1:3 / Lime Mortar - 1:2
(5) Masonry in Super - Structure	" " 1:3 / " " - 1:2
(6) Masonry in found ⁿ	" " 1:6 / " " - 1:3

Pointing work. (Good str. is req^d to prevent damage)



★ — ★ — Brick — ★ — ★ — ★ —
Constituents of Brick Earth:-

- (1) Alumina (20-30%)
- (2) Silica (50-60%)
- (3) Lime (4-5%)
- (4) Oxide of Iron (5-6%)
- (5) Magnesia (1%)