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FINENESS MODULUS

The fineness modulus is a numerical index which gives an idea about the coarseness or fine of aggregates. It also gives the idea about mean size of particle present in the aggregate whole body.

or

It is the sum of cumulative % retained on IS sieve divided by 100.

Type of Agg	IS sieve used
coarse	80, 40, 20, 10, 4.75mm
Fine	4.75, 2.36, 1.18, 600μ, 300μ, 150μ.
All in Aggregates	both of coarse and fine aggregates

→ Aggregates with higher fineness modulus leads to harsh mixes.

→ lower fineness modulus leads to uneconomical mixes.

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Procedure :-

① The sample of aggregates is air dried or heated at temperature of 100°C to 110°C before weighing and sieving.

② The weighed sample is put on the sieve top and sieving is done manually or mechanically.

③ The aggregate retained on various sieves are weighed and cumulative % weight retained is calculated.

④ Fineness modulus is determined by dividing cumulative % wight retained by 100.

Type of Agg:-	Size of Agg	Recommeded F.M	
		Min	Max
Fine	4.75	2.5	3
coars	10	3	3.5
	20	6	6.9
	40	6.9	7.5
	63	7.5	8.0
All in agg	20	4.8	5.1
	25		5.5

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Proportioning

Fineness modulus of fine and coarse aggregates are determined seperately with the help of sieve analysis. The mixing of aggregates is done suitable to get specified grading.

Now, we have:

$$x' = \frac{F_2 - F}{F - F_1}$$

x = % of fine aggregates to be mixed with coarse aggregate.

F_2 = F.M of coarse agg.

F_1 = F.M of fine agg.

F = F.M of combined aggregate.