INTERIM REPORT OF CONCRETE MIX DESIGN M25 CARRIED OUT FOR THE ASSISTANT ENGINEER, PWD BUILDINGS SECTION, NENMMARA

The Assistant Engineer, PWD Building Section Nenmmara vide request letter No AEBL-SN0NMRA/35/2025-DB2-PWD dated 15.05.2026 had requested to carry out concrete mix design of M25 grade concrete for work ***"GENERAL-Scouts& Guides,Kakkayaur Construction of Dormitory & Maintenance work at Kakkayur. Koduvayur,Palakkad -General Civil Work"*** Materials like cement Dalmia DSP, 20mm & 12.5 mm aggregate, M sand and admixture (Fosroc Conplast SP 430) were supplied to this laboratory.

As requested, an Interim report, based on test trials is furnished herewith.

Tests conducted

Different tests are conducted as per the methods suggested in the relevant IS standards to ascertain the quality of different materials supplied and mix design is conducted as per IS: 10262-2019.

Design parameters:

1.	Grade of Concrete	:	M25
2.	Type of Exposure	:	Moderate
3.	Workability	:	80-100 mm
4.	Fine Aggregate	:	Zone-II
5.	Coarse Aggregates	:	20mm & 12.5 mm graded *aggregates (50:50 ratio)* *Specific Gravity - 2.78*
6.	Cement	:	Dalmia DSP *Specific gravity – 2.95*
7.	Minimum Cement Content	:	330 kg/m^3 (As specified in the datasheet provided)
8.	Admixture	:	Fosroc Conplast Sp 430

Details of the Mix design – M25 (Dalmia DSP)

The requirement is to get a characteristic compressive strength of 25 N/mm^2 in the field at 28 days. The required target strength on 28^{th} day is 31.60 N/mm^2 (Weigh Batching)

Table. 1 Weigh Batching

Date of Casting	Water + Admixture (litres)	Cement	Fine Aggregate	Coarse Aggregate 20 mm and 12.5 mm (50:50 Ratio)
25.05.2026	154.70 + 2.80 lit.	350 kg	745.427 kg	1247.64 kg
	0.45	*1.00*	*2.13*	*3.56*

Measured slump = 85 mm

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**** Measured Water absorption values of supplied coarse aggregate and fine aggregate is 0.45 % and 1.43% respectively. The water requirements specified in the mix design are based on the Saturated Surface Dry (SSD) condition of both M-sand and coarse aggregate. Necessary field adjustments shall be made based on site moisture conditions, taking into account the reported water absorption values.***

7th day cube compressive strength was tested on 01.06.2026

The 7 th day cube strength achieved is 23.33 N/mm^2 (Average)

The Mix details given in Table.1 and Table. 2 can be confirmed only after performing 28th day cube compressive strength test. The required target strength on 28th day is 31.25 N/mm^2. Sampling and acceptance criteria as per section 15 and 16 respectively of IS 456 - 2000 shall be followed. The mix proportion by volume (per bag of cement) is given in Table.2

Table.2 Volume Batching

Water (lit) + Admixture (ml)	Cement	Fine aggregate	Coarse Aggregates Coarse Aggregate 20 mm and 12.5 mm (50:50 ratio)
22.10 lit + 400 ml	1 Bag	0.0669m^3(2.362428 Cft)	0.1224 m^3(4.321043 Cft)

Note: The interim report is issued based on urgency, but can be confirmed only after performing 28th day cube compressive strength.

Assistant Director II **Deputy Director**

End of Report

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