

Ref: ESI-AFCONS/TL/814/2021

Date: 12.04.2021

To **AFCONS Infrastructure**
Attn. **Mr. Sekhar Das, Project Manager**

Copy to **Nagpur-Mumbai Super Communication Expressway Ltd. (NMSCEL)**
Attn. **Mr. Hemant Jagtap, Executive Engineer**
Mr. S. K. Survase, Superintending Engineer (Nodal)

Rep: 3456/NMSCEW/TL/1439/2021 dated 07.04.2021
Subject: M-30, M-40 and M-45 Grade Mix Design with ADD Chem Admixture.

Mr. Sekhar Das,

With reference to above cited letter, please be informed that you have submitted 7- and 28-days Compressive strength of M-30, M-40 and M-45 Grade Mix Design 28 days with Ultratech OPC 53 Grade Cement with Admixture – ADD Chem Industries, Crystalline Admixture – Bulwark, TTCI Admixture powder – Conchem lab and Mineral Admixture – Fly Ash (ASL logistics) are reviewed and found satisfactory as per IS-516 and MORTH Specification and our observations are given as below.

1. Checked workability found to be satisfactory.
2. Cubes Cast and checked 7- and 28-days Strength found in order as per table 1700-5 in MORTH Specification.
3. Checked 28 days strength for Permeability and Shrinkage and Cylindrical tests found to be satisfactory as per DIN - 1048 and IS -516.
4. Maintain determination of moisture content in both aggregates shall be made as frequently of depending on weather condition. This data shall be used for correcting the water requirement of the mixed on daily basis.
5. The mix shall have the consistency which will allow proper placement and compaction in the required position and every attempt shall be made to obtain uniform consistence.
6. In case of any change in the source or properties of materials, the design of mix shall be established afresh.

M-45 Mix properties by weight of concrete Kg/m3

- Cement: 432 (Ultratech OPC-53 Grade)
- Fly ash: 108 (ASL Logistics)
- 20 mm Aggregates: 608 (Afcrons Crusher)
- 10 mm Aggregates: 405 (Afcrons Crusher)
- Wash Sand: 775 (Afcrons Plant)
- Water: 151.2 (Bahuli Dam)
- W/C Ratio: 0.28
- Admixture: 4.05 (0.75%) (AAD-Chem)
- Crystalline Admixture: 4.32 (0.80%) (Bulwark)
- TICI Admixture: 0.30 (Conchen Lab)
- 7 days strength: 38.33 N/mm²
- 28 days strength: 58.54 N/mm²

For and on behalf of

EPTISA Servicios de Ingenieria S.L.

AE-TL

Pablo Angel Corrales Martinez,

Team Leader