

## ABOUT CSIR NEIST

North East Institute of Science and Technology (NEIST), Jorhat, Assam, a constituent establishment of Council of Scientific and Industrial Research (CSIR), New Delhi, under Ministry of Science and Technology, Government of India has been engaged in multidisciplinary R&D work since 1961 relevant to the country in general and North Eastern Region in particular. The **Applied Civil Engineering Group (ACEG) of Engineering Sciences and Technology Division (ESTD)** is the branch with a lot of diversity research area from Geotechnical Engineering to Structural engineering, Waste Management to Non Destructive Testing, Structural stability check to construction quality control audit.

## MIX DESIGN

Applied Civil Engineering Group, CSIR NEIST offers Mix design for buildings, bridges, piling works, airport pavement and for other structural engineering design. Mix proportioning refers to the process of determining the precise combination of ingredients, such as cement, aggregates, water, and admixtures, to produce a concrete mixture with desired properties and performance characteristics for a specific application. CSIR NEIST could perform tests for quality checking of construction materials, strength, durability, workability, and permeability of concrete.

### MIX PROPORTIONING OF NORMAL AND SPECIAL CONCRETE

#### Quality checking of Materials

Cement

Water

Mineral Admixtures

Fine Aggregates

Coarse Aggregates

Chemical Admixtures

#### Normal Strength Concrete (NSC)

#### High Strength Concrete (HSC)

#### Dry Lean Concrete (DLC)

#### Concrete

#### Pervious Concrete (PC)

#### Wet Mix Macadam (WMM)

#### Pavement Quality Concrete (PQC)

#### Mass Concreting for Dams Construction

**CSIR NEIST offers Design Mix for Pumpable and Non-pumpable Normal strength Concrete with grades M20, M25, M30, M35 & M40; Nominal/Design Mix for M5, M7.5, M10, M15 & M20 Grade of Concrete;**

**Design Mixes for Medium and High Strength Concrete (M45, M50, M55, M60, M65, M70, M75 & M80) and other types of Concrete for pavements like Roller Compacted Concrete, Light Weight Concrete, High Performance Concrete, Early Strength Concrete, Fiber Reinforced Concrete, etc.**



# PAST EXPERIENCE IN MIX DESIGN

## CSIR NEIST'S TECHNICAL TEST REPORTS

**References:** IS 10262:2019, IS 456 2000, IS 383 2016, all parts of IS 516, IS 2370 and IS 4310 and other relevant codes

- ◆ Mix Proportion of M30 Grade of Concrete for Piling and Ground Improvement works
- ◆ Mix Proportion of Dry Lean Concrete (DLC) for Construction of Hanger, Associated Apron and Link Taxiway and Auxiliary works at Dibrugarh Airport
- ◆ Mix Proportion of Pavement Quality Concrete (PQC) for Construction of Hanger, Associated Apron and Link Taxiway and Auxiliary works at Dibrugarh Airport
- ◆ Mix Proportion of Wet Mix Macadam (WMM) for Construction of Hanger, Associated Apron and Link Taxiway and Auxiliary works at Dibrugarh Airport
- ◆ Mix Proportion of Granular Sub Base (GSB) for Construction of Hanger, Associated Apron and Link Taxiway and Auxiliary works at Dibrugarh Airport
- ◆ Mix Proportion of M35 Grade of Concrete for Teitering Bridge, Tuensang-Mon-Nagnimora Road
- ◆ Mix Proportion of M25 Grade of Concrete for Construction of Girls and Boys Hostel Building at National Institute of Design, Jorhat by NBCC
- ◆ Mix Proportion of Pumpable M30 Grade of Concrete for Construction of Composite Works of NSPL (Numaligarh - Sillguri Multi Product Pipeline) for Oil India Limited (Noonmati-Killing)
- ◆ Mix Proportion of Pumpable M30 Grade of Concrete for Composite Works of NSPL (Numaligarh-Sillguri Multiproduct Pipeline) for Oil India Limited (IPS 03 - Bongaigaon site)
- ◆ Mix Proportion of Pumpable M30 Grade of Concrete for Construction of Composite Works of NSPL (Numaligarh - Sillguri Multi Product Pipeline) for Oil India Limited (IPS 01 - Sekoni site)
- ◆ Mix Proportion of Pumpable M30 Grade of Concrete for Construction of Composite Works of NSPL (Numaligarh - Sillguri Multi Product Pipeline) for Oil India Limited (Noonmati-Kulchi-Maighuli)
- ◆ Mix Proportion of Pumpable M30 Grade of Concrete for Construction of Composite Works of NSPL (Numaligarh - Sillguri Multi Product Pipeline) for Oil India Limited (Numaligarh)
- ◆ Mix proportion of Non pumpable M25 Grade of Concrete for construction of G+1 Township Security Barrack (Phase - I)
- ◆ Mix Proportion of M30 Grade of Concrete for Construction of STINER Building at CSIR NEIST
- ◆ Mix Proportion of M30 Grade of Concrete for a Construction at NRL
- ◆ Mix Proportion of M30 Grade of Concrete for Infrastructure for New Medical College & Hospital at Golaghat, Assam
- ◆ Mix Proportion of M40 Grade of Concrete for Infrastructure for New Medical College & Hospital at Golaghat, Assam
- ◆ Mix Proportion of Pumpable M30 Grade of Concrete for Construction of Composite Works of NSPL (Numaligarh - Sillguri Multi Product Pipeline) for NRT-DT (Numaligarh) Site
- ◆ Mix Proportion of Pumpable M25 Grade of Concrete for Construction of plunge pool and Extension of Apron at downstream of Bichom Dam in Kameng HPS, Bichom, Arunachal Pradesh
- ◆ Mix Proportion of Non-Pumpable M25 Grade of Concrete for Construction of plunge pool and Extension of Apron at downstream of Bichom Dam in Kameng HPS, Bichom, Arunachal Pradesh
- ◆ Mix Proportion of pumpable M25 grade of concrete for Construction of G+6 New staff Quarters and Nursing staff Hostel block, Related Utilities & site development works for Swargadeo Sui- ka- pha Multispecialty Hospital at Medicity, Rajabari, Sivsagar, Assam

### People

**Dr. V M Tiwari, Director**

**Dr. S B Wann, Head of RPBD**

**Er. J J Bora, Head of ESTD**

**Dr. S Deori, Group Leader**

**Er. D Basumatari, Principal Scientist**

**Er. T Das, Principal Scientist**

**Dr. J L Raj, Senior Scientist**

**Er. N P Borah, Senior Technical Officer**

**Er. R Das, Senior Technical Officer**

**Er. Amar G, Senior Technical Officer**

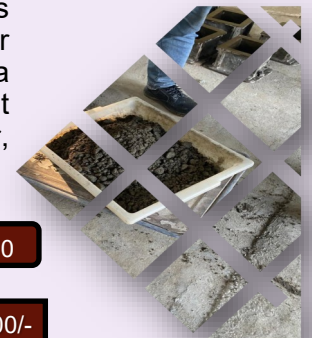
◆ Mix Proportion of Pumpable M30 Grade of Concrete for Construction of Composite Works of NSPL (Numaligarh - Sillguri Multi Product Pipeline) for Oil India Limited (IPS 01 - Sekoni site)

Rs. 35,400/-

NSC Up to M30

≥M35 and Special Concrete

Rs. 47,200/-



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