

# Concrete Mix Design(ACI Method)

Quality Control Laboratory, LGED-Rangpur

Ref.Memo No-46.02.8576.000.14.001.24-764

Date-12/01/2025

Construction of Approach road of 301m long PSC Girder Bridge at Nundaha ghat over The Korotoa river at Ch-4500m Upapazila-Pirganj, Dist- Rangpur. (For Pre-Cast Pile) (Contractor- Barendra Construction, Rajshahi.

Contract No-CIB-Ran-W-27b *Lug. Reg - P-354/63506* Date of Test-30/01/2025

## 1 Stipulation for proportioning:

Concrete Grade/Class-( $f_c=30\text{Mpa}$ )= C-30

Type of Cement Premier Cem-I(OPC)

Minimum Cement content

Maximum nominal size of Aggregate

Maximum Water Cement Ratio

Slump

Admixture

Water reduction for Admixture

Sp Gr. Of Admixture

Aggregate:

306.000	kg/cm <sup>2</sup>	$f_c = 30.0$ Mpa
OPC		
380.000	kg/m <sup>3</sup>	
20.000	mm	
0.450		
100-150	mm	
0.5%	cc/Bag cement	
10%		
1.16		

Aggregate	Max. Size mm	FM	Unit Weight kg/m <sup>3</sup>	Dry Bulk Sp Gr	Absorptn (%)	Present Moisture
CA	20		1788	2.65	0.650	0.2
FA		2.5		2.45	2.510	1.0

Mixing water(Chart or Trial)

Air Entrapped(Slump chart)

Targetted strength (Average  $f_{cr}$ )

W/C Ratio

Cement Content

Coarse Aggregate

160.000	kg/m <sup>3</sup>
2.000	%

397.800 kg/cm<sup>2</sup>  $f_{cr} = 39.01$  Mpa

0.34 0.335

477.612 kg

477.612 kg

1146.108 kg

30%

more

0.34

0.64 cum(Chart)

## 2 New Absolute Volume:

Cement

Water

CA

Air

Admixture

Total

FA

Wt of FA

0.152 cum

0.160 cum

0.432 cum

0.020 cum

0.002 cum

0.766 cum

0.234 cum

572.871 kg

## 3 Batch Weight for 1 cum:

Cement

Water

CA

FA

Admixture

477.6 kg

160.0 kg

1146.1 kg

572.9 kg

2.388 kg

## 4 Ratio C : FA : CA by weight =

1.00	1.20	2.40
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