

Concrete Mix Design(ACI Method)

Quality Control Laboratory, LGED-Rangpur

Ref.Memo No-UE/Pirganj/46.02.8576.000.99.00124-913-597 Date-22/05/2025
 Construction of 301m.00m Long PSC Girder Bridge at Nundaha ghat over the Karloa River, on road
 Chatra GC to Gilabari ghat at ch-4500m, Pirganj-Rangpur. (PSC Girder). (Contractor-Barendra Construction Ltd, Rajshahi)
 Package No-CIB-Ran-W-27c Date of Test- 18/06/2025

1 Stipulation for proportioning:

Concrete Grade/Class-(40Mpa)= C-40

Type of Cement Seven Ring Gold (OPC)

Minimum Cement content

Maximum nominal size of Aggregate

Maximum Water Cement Ratio

Slump

Admixture

Water reduction for Admixture

Sp Gr. Of Admixture

Aggregate:

408.000	kg/sqcm	$f_c = 40.0 \text{ Mpa}$
OPC		
425.000	Kg/cum	
20.000	mm	
0.400		
75-100	mm	
0.5%	cc/Bag cement	
10%		
1.16		

Aggregate	Max. Size mm	FM	Unit Weigt	Dry Bulk Sp Gr	Absorptn (%)	Present Moisture
CA	20		1675	2.45	1.00	0.8
FA		2.8		2.57	2.00	2.6

Mixing water(Charter or Trial)

Air Entrapped(Slump chart)

Targetted strength

W/C Ratio

Cement Content

Coarse Aggregate

160.000	kg/cum	
2.000	%	
530.400	kg/sqcm	$f_{cr} = 52.0 \text{ Mpa}$
0.32		
500.000	kg	
500.000	kg	
1072.000	kg	

30% more

0.32

0.64 cum(Charter)

2 New Absolute Volume:

Cement

Water

CA

Air

Admixture

FA

Wt of FA

0.159	cum
0.160	cum
0.438	cum
0.020	cum
0.002	cum
0.778	cum
0.222	cum
569.419	kg

3 Batch Weight for 1 cum:

Cement

Water

CA

FA

Admixture

500.0	kg
160.0	kg
1072.0	kg
569.4	kg
2.500	kg

4 Ratio C : FA : CA by weight =

1:00	1:14	2:14
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Ash
 Md. Anarul Islam
 Sub-Assistant Engineer (Lab)
 LGED, Rangpur

ash
 26/04/2020
 Assistant Engineer
 LGED, Rangpur.

Senior Assistant Engineer
 LGED, Rangpur.