

1. CONCRETE :

- a) ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
 - b) CONCRETE DIMENSIONS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES AND/OR THICKNESS OF BLINDING CONCRETE.
 - c) CONCRETE QUALITY AND MIX CONSTITUENTS ARE TO BE IN ACCORDANCE WITH THE SPECIFICATION
 - d) TYPE : CONCRETE COMPRESSIVE STRENGTH (CYLINDER,28 DAYS STRENGTH) CONSIDERED AS FOLLOWS :
 - i) FOR BORED PILING WORK: $f_c =$ MINIMUM 3500 psi
 - ii) FOR SHEAR WALL, PILE CAP, GRADE BEAM, FLOOR BEAM: $f_c =$ MINIMUM 4000 psi
 - e) CURING OF C.C & R.C.C WORK :
 - i) CURING TIME MINIMUM 20 DAYS
 - ii) METHOD OF CURING :
 - * HORIZONTAL SURFACE: BY PONDING OF WATER
 - * OTHER SURFACES: BY WRAPPING MOST JUITE FABRIC AND SPRINKLING WATER BY HOSE PIPE FREQUENTLY.
2. CEMENT
- ORDINARY PORTLAND CEMENT/TYPE-1 CONFORMING TO BDS 232 : 1974/ASTM C150 COMPOSITE CEMENT/TYPE-2 CONFORMING TO BDS 232 : 1974/ASTM C150

3. CONCRETE AGGREGATE

- a) FINE AGGREGATES: AS PER SPECIFICATION
- b) COARSE AGGREGATES: AS PER SPECIFICATION

4. WATER

POTABLE WATER TO BE USED IN CONCRETE MIX

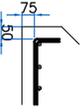
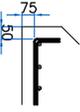
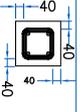
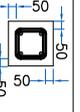
5. FOUNDATIONS AND EARTH WORKS :

- a) ALL EXCAVATION, DEWATERING, FILLING AND COMPACTION SHALL BE MADE IN ACCORDANCE WITH THE SPECIFICATION.
- b) THE ENGINEER IS TO APPROVE ALL EXCAVATIONS PRIOR TO PLACING CONCRETE.
- c) THE EXCAVATION SHALL BE KEPT FREE OF WATER AT ALL TIMES. CONCRETE QUALITY AND MIX CONSTITUENT ARE TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

6. STEEL REINFORCEMENT

- a) ALL REINFORCEMENTS ARE 60 GRADE HIGH STRENGTH DEFORMED BAR MADE FROM BILLET STEEL(UNLESS OTHERWISE SPECIFIED)
- b) YIELD STRENGTH OF STEEL $f_y = 415 \text{ Mpa}$ (60000 psi) CONFORMED TO ONE OF THE FOLLOWING SPECIFICATIONS :i) BDS 1313 : 1991, ii) ASTM A615M
- c) THE FOLLOWING TESTS FOR REINFORCING BARS FROM RANDOM SAMPLES SHALL BE CONDUCTED AT BUREAU AS PER BDS 1313 : 1991 AND TEST RESULT SHALL BE SUBMITTED TO THE ENGINEER FOR CHECKING AND RECORD :
 - i) TENSILE STRENGTH TEST
 - ii) PERCENTAGE ELONGATION TEST

7. CONCRETE CLEAR COVER FOR REINFORCING BARS

Member	Location or Condition of Cover	Thickness of Cover	Figure
foundation	side	50	
	bottom	75	
Wall	above ground level	* 40	
	below ground level	* 50	

* from tie
** from stirrups

8. REQUIRED END HOOKS

bar hook	Form and Extension	Bend Angle (degree)	Bend Radius (r)	Used Bar	Location
primary reinf.		180°	$r = 2db$	6 to 25	lap splice end of anchorage
tie/stirrups		135°	$r = 1.25db$	6 to 12	stirrups fastening bar diagonal hoop
primary reinf.		90°	$r = 2.5db$	6 to 32	bend-up for embedment
slab		45°	$r = 5db$	8 to 20	bend bar in slab

9. LAP LENGTH

Bar size	Lap splices (mm) in Tension	Length
8		400
10		500
12		600
16		800
20		1000
22		1100
23		1200
28		1400

*- MAXIMUM PERCENT OF 'AS' SPICED WITHIN REQUIRED LAP LENGTH. FOR TOP BARS THE ABOVE FIGURES WILL BE MULTIPLIED BY 1.3 TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 300 MM OF CONCRETE CAST BELOW THEM.

LAP SPICES (MM) IN COMPRESSION

Bar size	Lap Splice in MM
8	320
10	400
12	480
16	640
20	800
22	880
25	1000
28	1120

DEVELOPMENT LENGTH OF HOOKED BARS IN MM

Bar size	Development Length in MM
8	150
10	200
12	225
16	250
20	325
22	350
25	400
28	425

USG STL RESIDENCE, GULSHAN, DHAKA
2-STORIED BUILDING (1-UNIT) HASNA HOUSE
HOUSE # NW (B) 21, ROAD # 65

GENERAL NOTES & SPECIFICATIONS

CONSULTANT			
WORLDWIDE ENGINEERS LIMITED			
HOUSE # 67, ROAD # 15, BLOCK # D, BANANI, DHAKA-1213 BANGLADESH			
ENGINEER	DRAWN	CHECKED	DATE
MEREDIN	ZAHID	DOMILA	JUNE, 2014
SHEET NO.	ST-01		REV. NO. A.21.8.14