

GENERAL NOTES FOR R.C.C SOLID SLAB:

- THESE NOTES ARE APPLICABLE FOR THE STANDARD DRAWINGS OF R.C.C. SOLID SLAB FOR SUBMERSIBLE AND HIGH LEVEL BRIDGES.
- ALL DIMENSIONS ARE IN mm. LEVELS ARE IN m UNLESS MENTIONED OTHERWISE. DRAWINGS SHALL NOT BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- DESIGN CRITERIA -

A. THE DESIGN IS ACCORDING TO THE FOLLOWING CODES

- IRC 5 -2015
- IRC 6 -2017
- IRC 112 -2020
- IRC SP 82 -2008

ALL THE LATEST AMENDMENTS TO THE ABOVE CODES UPTO THE YEAR 2022 ARE TAKEN INTO CONSIDERATION WHILE DESIGNING THE STANDARD DRAWINGS.

B. THE FOLLOWING LOADS ARE CONSIDERED WHILE DESIGNING SOLID SLABS:

- DEAD LOAD
- SUPER IMPOSED DEAD LOADS OF ATTACHMENTS AND COMPONENTS
- LIVE LOAD ACCORDING TO IRC 6 -2017

OVERALL WIDTH		CARRIAGEWAY WIDTH (m)	LIVE LOAD LANES FOR DESIGN
SUBMERSIBLE BRIDGE (m)	HIGH LEVEL BRIDGE (m)		
7.95	8.50	7.50	2 LANES OF CLASS A OR 1 LANE OF 70R
10.45	11.00	10.00	3 LANES OF CLASS A OR 1 LANE OF 70R + 1 LANE OF CLASS A
11.45	12.00	11.00	3 LANES OF CLASS A OR 1 LANE OF 70R + 1 LANE OF CLASS A

- THE DESIGN IS APPLICABLE FOR MODERATE AND SEVERE CONDITION OF EXPOSURE.
- WEARING COAT SHALL BE INTEGRATED CEMENT CONCRETE WEARING COAT WITH THICKNESS OF 75mm AND MIN. GRADE OF CONCRETE SHALL BE M30 FOR SUBMERSIBLE BRIDGES.
- STEEL REINFORCEMENT OF 8mm DIA AT 150mm SPACING IN BOTH DIRECTION SHALL BE LAID AT THE MID DEPTH OF INTEGRATED WEARING COAT.
- WEARING COAT FOR HIGH LEVEL BRIDGES SHALL BE 50mm BM + 25mm ASPHALT CONCRETE OR DBM+SDBC OR INTEGRATED WEARING COAT.
- 25mm PRE MOULDED BITUMINOUS PAD OF 25mm THICKNESS SHALL BE PROVIDED AT EXPANSION JOINT LOCATION.
- THERE SHALL BE A CLEAR JOINT BETWEEN THE KERBS, RAILINGS AND OTHER ATTACHMENTS AT THE EXPANSION JOINT LOCATION.
- LOADS ON ACCOUNT OF PUBLIC UTILITY SERVICES e.g. WATER SUPPLY OR SEWERAGE LINES ETC. ARE NOT CONSIDERED IN THE DESIGN.
- THRUST BLOCK IS PROVIDED IN CASE OF RCC SUBMERSIBLE BRIDGES TO AVOID FOR DISLODGE MENT OF SUPERSTRUCTURE.
- CROSS CAMBER OF 2.5% SHALL BE PROVIDED TO THE TOP SURFACE OF PIER CAP. UNIFORM THICKNESS OF SOLID SLAB AND WEARING COAT IS CONSIDERED ON THE PIERS.
- TAR PAPER BEARINGS SHALL BE PROVIDED FOR SOLID SLABS SUPERSTRUCTURES.
- 900mm THICK RUBBLE MAT FOR A SUITABLE LENGTH NOT LESS THAN 3600mm SHALL BE PROVIDED IN APPROACHED FOR A FULL WIDTH BEHIND THE ABUTMENTS.
- IN CASE OF HIGH LEVEL BRIDGES, WATER SPOUTS SHALL BE PROVIDED AS PER DC-BR/TP-2023/MISC/152-3/5
- RAILINGS FOR THE SUPERSTRUCTURE SHALL BE ADOPTED AS BELOW
 - HIGH LEVEL - R.C.C. ANTI CRASH BARRIER
 - SUBMERSIBLE BRIDGES - DISCONTINUOUS KERBS WITH COLLAPSIBLE RAILINGS
- UNIT WEIGHTS OF VARIOUS ELEMENTS ARE CONSIDERED AS PER IRC 6-2017 AS FOLLOWS
 - REINFORCED CEMENT CONCRETE - 2.5 t/m³
 - PLAIN CEMENT CONCRETE - 2.5 t/m³

MATERIAL SPECIFICATIONS:

- MINIMUM GRADE OF CONCRETE SHALL BE M35 FOR COASTAL REGIONS (SEVERE EXPOSURE CONDITION) AND M30 FOR ALL OTHER REGIONS (MODERATE EXPOSURE CONDITION) IN THE STATE OF MAHARASHTRA.
- CONCRETE SHALL HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBES FOR ALL ELEMENTS OF SOLID SLAB.
- HIGH STRENGTH ORDINARY PORTLAND CEMENT CONFORMING TO IS: 8112 OR ORDINARY PORTLAND CEMENT CONFORMING TO IS: 269 CAPABLE OF ACHIEVING THE REQUIRED DESIGN STRENGTH OF CONCRETE SHALL BE USED.
- MAXIMUM SIZE OF AGGREGATES FOR CONCRETE SHALL BE 20mm.
- ALL REINFORCEMENT BARS SHALL BE TMT BARS OF GRADE Fe500D CONFORMING TO IS: 1786.
- WATER TO BE USED IN CONCRETING AND CURING SHALL CONFORM TO IRC: 112-2020.

WORKMANSHIP DETAILS:

- MINIMUM CLEAR COVER TO ANY REINFORCEMENT SHALL BE AS FOLLOWS:

EXPOSURE CONDITION	SOLID SLAB (mm)
MODERATE	40
SEVERE	45

- WELDING OF REINFORCEMENT IS NOT PERMITTED.
- BENDING OF REINFORCEMENT BARS SHALL BE AS PER IS: 2502.
- SUPPORTING CHAIRS OF 12mm DIAMETER SHALL BE PROVIDED AT SUITABLE INTERVALS AS PER IS: 2502.
- CONCRETE SHALL BE PRODUCED IN A MECHANICAL MIXER OF CAPACITY NOT LESS THAN 200 LITERS HAVING INTEGRAL WEIGH-BATCHING FACILITY AND PREFERABLY HAVING AUTOMATIC WATER MEASURING DEVICE.
- PROPER COMPACTION SHALL BE ENSURED BY USE OF APPROPRIATE TYPE OF VIBRATORS.
- PROPERLY BRACED STEEL PLATES SHALL BE USED AS SHUTTERING.
- SHUTTERING AND CENTERING SHALL BE PASSED AND APPROVED BY THE COMPETENT AUTHORITY.
- SHARP EDGES OF CONCRETE SHALL BE CHAMFERED.
- WORK SHALL BE EXECUTED IN ACCORDANCE WITH MoRT&H SPECIFICATIONS FOR ROAD AND BRIDGE WORKS EXCEPT WHEREVER MENTIONED OTHERWISE.
- FOR ENSURING PROPER COVER OF CONCRETE TO THE REINFORCEMENT BARS SPECIALLY MADE POLYMER COVER BLOCKS / PRECAST COVER BLOCKS OF THE SAME GRADE OF CONCRETE AS THAT OF THE STRUCTURE TO BE CONCRETED SHALL BE USED.
- 18-GAUGE GALVANIZED BINDING WIRE SHALL BE USED.
- MECHANICAL SPLICING SHALL BE PREFERABLY ADOPTED FOR BAR DIAMETERS EXCEEDING 16mm.

APPLICABILITY OF TYPE PLANS

- THESE DRAWINGS ARE ONLY APPLICABLE FOR RIGHT ANGLED BRIDGES.
- THESE DRAWINGS ARE VALID ONLY FOR BRIDGES WITH OVERALL LENGTH EQUAL TO OR LESS THAN 30m AND INDIVIDUAL SPAN LENGTHS NOT EXCEEDING 12m.
- THE TYPE PLANS ARE NOT VALID FOR BRIDGES UNDER FOREST JURISDICTION.
- THE TYPE PLANS ARE NOT VALID FOR BRIDGES IN VERY SEVERE AND EXTREME EXPOSURE CONDITION.
- THESE DRAWINGS ARE NOT VALID FOR WIDENING OF SUPERSTRUCTURE.

DRG.NO.- DC-BR/TP-2023/SS/GN/01-1/1**CONSTRUCTION JOINTS**

- THE LOCATION AND PROVISION OF CONSTRUCTION JOINTS SHALL BE APPROVED BY ENGINEER IN CHARGE. THE CONCRETING OPERATIONS SHALL BE CARRIED OUT CONTINUOUSLY UPTO THE CONSTRUCTION JOINT.
- THE CONCRETE SURFACE AT THE JOINT SHALL BE BRUSHED WITH A STIFF BRUSH AFTER CONCRETING WHILE THE CONCRETE IS STILL FRESH AND IT HAS ONLY SLIGHTLY HARDENED.
- BEFORE NEW CONCRETE IS POURED, THE SURFACE OF OLD CONCRETE SHALL BE PREPARED AS UNDER:
 - FOR HARDENED CONCRETE, THE SURFACE SHALL BE THOROUGHLY CLEANED OFF DEBRIS AND MADE ROUGH.
 - FOR PARTIALLY HARDENED CONCRETE, THE SURFACE SHALL BE TREATED BY WIRE BRUSH FOLLOWED BY AN AIR JET.
 - THE OLD SURFACE SHALL BE SOAKED WITH WATER WITHOUT LEAVING PUDDLES IMMEDIATELY BEFORE STARTING CONCRETING TO PREVENT THE ABSORPTION OF WATER FROM NEW CONCRETE.
 - NEW CONCRETE SHALL BE THOROUGHLY COMPACTED IN THE REGION OF THE JOINT.

ABBREVIATION

RTL	: ROAD TOP LEVEL
CW	: CARRIAGEWAY
OGL	: ORIGINAL GROUND LEVEL
LVL	: LEVEL
RCC	: REINFORCED CEMENT CONCRETE
PCC	: PLAIN CEMENT CONCRETE
FDN	: FOUNDING
CJ	: CONSTRUCTION JOINT
EJ	: EXPANSION JOINT
TYP.	: TYPICAL
No. (No's)	: NUMBER(S)
Ø	: TMT BARS
CL	: CENTRE LINE



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TITLE:

**SUBMERSIBLE AND HIGH LEVEL BRIDGE
GENERAL NOTES FOR R.C.C. SOLID SLAB**

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