

CAST-IN-PLACE CONCRETE

I CONCRETE

1. ALL CONCRETE IS TO BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF CAN/CSA-A23.1-09 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION" AND CAN/CSA A23.209 "METHOD OF TEST FOR CONCRETE".
2. PROVIDE CERTIFICATION THAT MIX PROPORTIONS SELECTED WILL PRODUCE CONCRETE OF QUALITY, YIELD AND STRENGTH AS SPECIFIED IN CONCRETE MIXES, AND WILL COMPLY WITH CAN/CSA-A23.1. CERTIFICATION LETTER TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA
3. PROVIDE CERTIFICATION THAT PLANT, EQUIPMENT, AND MATERIALS TO BE USED IN CONCRETE COMPLY WITH REQUIREMENTS OF CAN/CSA-A23.1. CERTIFICATION LETTER TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA
4. CONCRETE STRENGTHS AT 28 DAYS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

PILES: 32 MPa MIN. AT 56 DAYS
CLASS OF EXPOSURE: S-2
ENTRAINED AIR/CATEGORY: 2(4% TO 7%)
CEMENT TYPE: HS
AGGREGATE: MAX. 20mm
CURING TYPE: TYPE 1 - BASIC
SLUMP: MIN. 120 mm

EXTERIOR SLABS -ON-GRADE: 32 MPa MIN. AT 28 DAYS
CLASS OF EXPOSURE: C-2
ENTRAINED AIR/CATEGORY: 1 (5% TO 8%)
AGGREGATE MAX. 20mm
CURING TYPE: TYPE 1 - BASIC

UNLESS INDICATED OTHERWISE THE GENERAL CONTRACTOR SHALL SPECIFY CONCRETE SLUMP APPROPRIATE WITH PLACEMENT METHODS AND SITE CONDITIONS THE GENERAL CONTRACTOR SPECIFIED SLUMP MUST BE SHOWN ON THE CERTIFICATION LETTER AND CONCRETE DELIVERY TICKET.

5. UNLESS NOTED OTHERWISE CONCRETE CURING TO CONFORM TO THE LATEST EDITION OF CAN/CSA A23.1-09 AS FOLLOWS:
 - A) TYPE 1 – BASIC: 3 DAYS $\geq 10^{\circ}\text{C}$ AND FOR A TIME NECESSARY TO ATTAIN 40% OF THE SPECIFIED STRENGTH.
 - B) TYPE 2 – ADDITIONAL: 7 DAYS $\geq 10^{\circ}\text{C}$ AND FOR A TIME NECESSARY TO ATTAIN 70% OF THE SPECIFIED STRENGTH.
 - C) TYPE 3 – EXTENDED: 7 DAYS WET CURING $\geq 10^{\circ}\text{C}$.
6. AIR ENTRAINING ADMIXTURES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C260-10a "STANDARD SPECIFICATION FOR AIR ENTRAINING ADMIXTURES FOR CONCRETE". SUPERPLASTICIZING ADMIXTURES SHALL CONFORM TO ASTM C494-04 "STANDARD SPECIFICATION FOR CHEMICAL ADMIXTURES FOR CONCRETE" OR ASTM C1017/C1017M "STANDARD SPECIFICATION FOR CHEMICAL ADMIXTURES FOR USE IN PRODUCING FLOWING CONCRETE" WHEN FLOWING CONCRETE IS APPLICABLE AIR ENTRAINING ADMIXTURES TO HAVE A DURABILITY FACTOR GREATER THAN 75, WHEN TESTED TO ASTM STANDARDS C666-06 PROCEDURE A. SPACING FACTOR FOR ANY AIR ENTRAINING ADMIXTURE MUST BE 0.17m OR LESS WHEN TESTED IN ACCORDANCE WITH ASTM C457 "STANDARD TEST METHOD FOR MICROSCOPICAL DETERMINATION OF PARAMETERS OF THE AIR VOID SYSTEM IN HARDENED CONCRETE".

ROUND/SQUARE COLUMBARIUM FOUNDATION PAD PLAN

SK-01
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CITY OF WINNIPEG
CEMETERIES BRANCH



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