



CONCRETE ABILITY TO RESIST CHLORIDE ION PENETRATION (ASTM C 1202)

Proj. Number and Name:	<u>23.098, CMT Technical Services - Roman Cement</u>	Date:	<u>11/01/24</u>
Sample ID:	<u>244161</u>	Sampled by:	<u>CMT - Utah</u>
Sample Location:	<u>Roman Cement (Client ID RC917-1)</u>	Sample Date:	<u>9/7/2024</u>
Sample Source:	<u>Laboratory Mixture Trial</u>	Technician:	<u>K. McNally</u>
		Reviewer:	<u>J. Weinerth</u>

Location of Test Sample (from within cast cylinder or core):	<u>Cast cylinder</u>
Type of Concrete:	<u>Structural</u>
Type of Cement and %:	<u>Holcim Type IL (80%)</u>
Type of Flyash and %:	<u>Geofortis (20%)</u>
Water-Cementitious Ratio:	<u>0.48</u>
Special Admixtures and Dosage:	<u>AEA/WRA/Recover</u>
Core Specimen: Presence of Reinforcement/Location:	<u>--</u>
Core Specimen: Presence/Thickness of Overlay:	<u>--</u>
Core Specimen: Presence/Thickness of Surface Treatment:	<u>--</u>

Test Note: Maintain Temperature of Specimen, Voltage Cell, and Solution (between 68° and 77° F)

Accumulated Coulombs Readings, Every 30 minutes

Specimen:	1	2	3	4		
Specimen Diameter, in.:	4.00	4.00				
Initial Reading at 1 minute:	3	2				
0.5 hour (30 minutes):	104	90				
1 hour (60 minutes):	213	184				
1.5 hours (90 minutes):	324	282				
2 hours (120 minutes):	439	382				
2.5 hours (150 minutes):	557	484				
3 hours (180 minutes):	678	581				
3.5 hour (210 minutes):	801	656				
4.0 hour (240 minutes):	925	809				
4.5 hour (270 minutes):	1,050	921				
5.0 hour (300 minutes):	1,176	1,036			> 4000	High
5.5 hour (330 minutes):	1,304	1,153			2,000 - 4,000	Moderate
6.0 hour (360 minutes):	1,433	1,273			1,000 - 2,000	Low
					100 - 1,000	Very Low
Coulombs (adjusted to 3.75")	1,259	1,119			< 100	Negligible

Table 1: Chloride Ion Penetrability based on Charge Passed	
Charge Passed (Coulombs)	Chloride Ion Penetrability
> 4000	High
2,000 - 4,000	Moderate
1,000 - 2,000	Low
100 - 1,000	Very Low
< 100	Negligible

Average Coulombs (Q):	1,189	1,000 - 2,000	Low
------------------------------	--------------	----------------------	------------

Comments, i.e., curing conditions and unusual specimen preparations:



CONCRETE ABILITY TO RESIST CHLORIDE ION PENETRATION (ASTM C 1202)

Proj. Number and Name:	<u>23.098, CMT Technical Services</u>	Date:	<u>10/31/24</u>
Sample ID:	<u>244162</u>	Sampled by:	<u>CMT - Utah</u>
Sample Location:	<u>Altaview Concrete (Client ID RC917-2)</u>	Sample Date:	<u>9/7/2024</u>
Sample Source:	<u>Laboratory Mixture Trial</u>	Technician:	<u>K. McNally</u>
		Reviewer:	<u>J. Weinerth</u>

Location of Test Sample (from within cast cylinder or core):	<u>Cast cylinder</u>
Type of Concrete:	<u>Structural</u>
Type of Cement and %:	<u>Holcim Type IL (85%)</u>
Type of Flyash and %:	<u>Geofortis (15%)</u>
Water-Cementitious Ratio:	<u>0.43</u>
Special Admixtures and Dosage:	<u>AEA/WRA/Accelerator</u>
Core Specimen: Presence of Reinforcement/Location:	<u>--</u>
Core Specimen: Presence/Thickness of Overlay:	<u>--</u>
Core Specimen: Presence/Thickness of Surface Treatment:	<u>--</u>

Test Note: Maintain Temperature of Specimen, Voltage Cell, and Solution (between 68° and 77° F)

Accumulated Coulombs Readings, Every 30 minutes

Specimen:	1	2	3	4		
Specimen Diameter, in.:	4.00	4.00				
Initial Reading at 1 minute:	3	3				
0.5 hour (30 minutes):	106	109				
1 hour (60 minutes):	218	223				
1.5 hours (90 minutes):	333	340				
2 hours (120 minutes):	452	460				
2.5 hours (150 minutes):	572	582				
3 hours (180 minutes):	694	706				
3.5 hour (210 minutes):	818	833				
4.0 hour (240 minutes):	945	962				
4.5 hour (270 minutes):	1,074	1,094				
5.0 hour (300 minutes):	1,203	1,226			> 4000	High
5.5 hour (330 minutes):	1,331	1,360			2,000 - 4,000	Moderate
6.0 hour (360 minutes):	1,459	1,495			1,000 - 2,000	Low
					100 - 1,000	Very Low
Coulombs (adjusted to 3.75")	1,282	1,314			< 100	Negligible

Table 1: Chloride Ion Penetrability based on Charge Passed	
Charge Passed (Coulombs)	Chloride Ion Penetrability
> 4000	High
2,000 - 4,000	Moderate
1,000 - 2,000	Low
100 - 1,000	Very Low
< 100	Negligible

Average Coulombs (Q):	1,298	1,000 - 2,000	Low
------------------------------	--------------	----------------------	------------

Comments, i.e., curing conditions and unusual specimen preparations: