CMT TECHNICAL SERVICES

10/8/2024

Roman Cement, LLC
1475 Princeton Avenue
Salt Lake City Utah, 84105

Concrete Compressive Strength

AASHTO: T119, T152, T23, T97, T121, T309, T141

Project No:	3918	Date Tested:	9/7/2024
Client Reference No:		Pour Date:	9/7/2024
Concrete Supplier:		Contractor:	
Plant:	CMT West Valley Lab	Bag Mix:	5.3
Type Cement:	1L	Mix No:	
Project:	Roman Cement Laboratory Services - 3918		
Test Location:	CMT West Valley Lab		
Pour Location:	CMT West Valley Lab	Enviromental Cond:	Warm 65 - 80
Pour Structure:	Trial Batch	Pour Type:	
Set Id-Barcode:	RC97-1	Air Admix:	Yes
Specified PSI:	4,000	Admixture:	Yes
Place Method:		Pozzolan:	Yes
Total Yds in Pour:		Hot Water:	No
Ticket No:		NaCl:	No
Truck No:		Yds in Load:	
Field Storage:		Accum Yds:	
		Air Content (%):	6.0
		Slump:	4.00
		Concrete Temp F°:	72
		Air Temp F°:	75
		Added Water (gal):	
		Unit Weight (lb/ft3):	142.8
		Age Min:	

ID	Date Broken	Age	Measured Avg Dia	Area (in2)	Load (lbs)	Strength PSI	Strength MPA	% of SPEC.	Cylinder EndCap	Break Type	CC*	Broken By
RC97-1-3-A	9/10/2024	3	4.00	12.57	48,620	3,870	26.7	96.7	Neoprene	4	G	David Mikesell
RC97-1-7-B	9/14/2024	7	4.00	12.57	55,380	4,410	30.4	110.2	Neoprene	4	G	David Mikesell
RC97-1-28-C	10/5/2024	28	4.00	12.57	67,470	5,370	37.0	134.2	Neoprene	2	G	David Mikesell
RC97-1-28-D	10/5/2024	28	4.00	12.57	67,600	5,380	37.1	134.5	Neoprene	2	G	David Mikesell
RC97-1-28-E	10/5/2024	28	4.00	12.57	67,940	5,410	37.3	135.2	Neoprene	2	G	David Mikesell

FC = Field Cure Average 28 Day Strength: 5,380

1 = Cone/Cone; 2 = Cone Split/Cone Vertical; - Cone Shear; 3 = Columnar/Columnar; 4 = Shear/Diagonal; 5 = Edge Fracture; 6 = Two Edge Fracture
Cylinder End Cap Preparation: Sulfur = ASTM C617, Neoprene = ASTM C1231
*Cylinder Condition: G = Good, F = Fair, P = Poor, D = Damaged

Remarks: See mix design for additional information.

Field Technician: Kurtis A
Digital Signature By User Login

Manager: Belinda Torres
Title: Laboratory Manager
Digital Signature By User Login

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10/8/2024

Roman Cement, LLC
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Salt Lake City Utah, 84105

Concrete Compressive Strength

AASHTO: T119, T152, T23, T97, T121, T309, T141

Project No:	3918	Date Tested:	9/7/2024
Client Reference No:		Pour Date:	9/7/2024
Concrete Supplier:		Contractor:	
Plant:	CMT West Valley Lab	Bag Mix:	6.5
Type Cement:	1L	Mix No:	
Project:	Roman Cement Laboratory Services - 3918		
Test Location:	CMT West Valley Lab		
Pour Location:	CMT West Valley Lab	Enviromental Cond:	Warm 65 - 80
Pour Structure:	Trial Batch	Pour Type:	
Set Id-Barcode:	RC97-2	Air Admix:	Yes
Specified PSI:	4,000	Admixture:	Yes
Place Method:		Pozzolan:	Yes
Total Yds in Pour:		Hot Water:	No
Ticket No:		NaCl:	No
Truck No:		Yds in Load:	
Field Storage:		Accum Yds:	
		Air Content (%):	5.5
		Slump:	4.00
		Concrete Temp F°:	72
		Air Temp F°:	75
		Added Water (gal):	
		Unit Weight (lb/ft3):	138.8
		Age Min:	

ID	Date Broken	Age	Measured Avg Dia	Area (in2)	Load (lbs)	Strength PSI	Strength MPA	% of SPEC.	Cylinder EndCap	Break Type	CC*	Broken By
RC97-2-3-A	9/10/2024	3	4.00	12.57	38,140	3,040	20.9	75.9	Neoprene	4	G	David Mikesell
RC97-2-7-B	9/14/2024	7	4.00	12.57	57,030	4,540	31.3	113.5	Neoprene	4	G	David Mikesell
RC97-2-28-C	10/5/2024	28	4.00	12.57	61,500	4,890	33.7	122.4	Neoprene	2	G	David Mikesell
RC97-2-28-D	10/5/2024	28	4.00	12.57	59,360	4,720	32.6	118.1	Neoprene	2	G	David Mikesell
RC97-2-28-E	10/5/2024	28	4.00	12.57	62,120	4,940	34.1	123.6	Neoprene	2	G	David Mikesell

FC = Field Cure Average 28 Day Strength: 4,850

1 = Cone/Cone; 2 = Cone Split/Cone Vertical; - Cone Shear; 3 = Columnar/Columnar; 4 = Shear/Diagonal; 5 = Edge Fracture; 6 = Two Edge Fracture
Cylinder End Cap Preparation: Sulfur = ASTM C617, Neoprene = ASTM C1231
*Cylinder Condition: G = Good, F = Fair, P = Poor, D = Damaged

Remarks: See mix design for additional information.

Field Technician: Kurtis A
Digital Signature By User Login

Manager: Belinda Torres
Title: Laboratory Manager
Digital Signature By User Login

Lab Address: 2688 S. Redwood Rd. Suite E,F,G,H West Valley City Utah, 84119
System Link: http://cmt-data.com/assignments/BEB202F4-380A-49B5-D92E-E57F77C55308
System Path: Roman Cement Laboratory Services - 3918 / CONCRETE / 3918 ConcTestSet KK09/07/2024

CMT TECHNICAL SERVICES

10/8/2024

Flexural Strength Test

AASHTO: T119, T152, T23, T97, T121, T309, T141

Roman Cement, LLC
1475 Princeton Avenue
Salt Lake City Utah, 84105

Project No:	3918	Date Tested:	9/7/2024
Client Reference No:		Pour Date:	9/7/2024
Concrete Supplier:		Contractor:	
Plant:	CMT West Valley Lab	Bag Mix:	5.3
Type Cement:	1L	Mix No:	
Project:	Roman Cement Laboratory Services - 3918		
Pour Location:	CMT West Valley Lab	Samples were:	
Pour Structure:	Trial Batch	Pour Type:	

Set Id-Barcode:	RC97-1	Air Admix:	Yes	Air Content (%):	6.0
Specified PSI:	650	Admixture:	Yes	Slump (in):	4.00
Place Method:		Pozzolan:	Yes	Concrete Temp F°:	72
Total Yds in Pour:		Hot Water:		Air Temp F°:	75
Ticket No:		NaCl:		Added Water (gal):	
Truck No:		Yds in Load:		Unit Weight (lb/ft3):	142.8
Field Storage:		Accum Yds:		Age Min:	

ID	Date Broken	Age	Depth (in)	Width (in)	Span (in)	Load (lbs)	Strength PSI	Strength MPA	% of SPEC.	SC*	Broken By
RC97-1-28-A	10/5/2024	28	6.00	6.00	18.00	9,250	770	5.30	118.5	G	David Mikesell
RC97-1-28-B	10/5/2024	28	6.00	6.10	18.00	9,350	765	5.25	117.7	G	David Mikesell
RC97-1-28-C	10/5/2024	28	6.05	6.00	18.00	9,040	740	5.10	113.8	G	David Mikesell

FC = Field Cure, INV = Invalid Test

Average 28 Day Strength (psi): 760

1 Cone/Cone; 2 Cone Split/Cone Vertical; - Cone Shear; 4 Shear/Diagonal; 3 Columnar/Columnar; 5 Edge Fracture; 6 Two Edge Fracture.
Cylinder End Cap Preparation - Sulfur = ASTM C617; Neoprene = ASTM C1231
*Sample Condition: G = Good, F = Fair, P = Poor, D = Damaged

Remarks: See mix design for additional information.

Technician: Kurtis A
Digital Signature By User Login

Manager: Belinda Torres
Title: Laboratory Manager
Digital Signature By User Login

Lab Address: 2688 S. Redwood Rd. Suite E,F,G,H West Valley City Utah, 84119
System Link: http://cmt-data.com/assignments/5FE6F11C-09A2-42C5-79E7-74804D202D59
System Path: Roman Cement Laboratory Services - 3918 / CONCRETE / 3918 ConcBeamSet KA09/07/2024

CMT TECHNICAL SERVICES

10/8/2024

Flexural Strength Test

AASHTO: T119, T152, T23, T97, T121, T309, T141

Roman Cement, LLC
1475 Princeton Avenue
Salt Lake City Utah, 84105

Project No:	3918	Date Tested:	9/7/2024
Client Reference No:		Pour Date:	9/7/2024
Concrete Supplier:		Contractor:	
Plant:	CMT West Valley Lab	Bag Mix:	6.5
Type Cement:	1L	Mix No:	
Project:	Roman Cement Laboratory Services - 3918		
Pour Location:	CMT West Valley Lab	Samples were:	
Pour Structure:	Trial Batch	Pour Type:	

Set Id-Barcode:	RC97-2	Air Admix:	Yes	Air Content (%):	5.5
Specified PSI:	650	Admixture:	Yes	Slump (in):	4.00
Place Method:		Pozzolan:	Yes	Concrete Temp F°:	72
Total Yds in Pour:		Hot Water:		Air Temp F°:	75
Ticket No:		NaCl:		Added Water (gal):	
Truck No:		Yds in Load:		Unit Weight (lb/ft3):	138.8
Field Storage:		Accum Yds:		Age Min:	

ID	Date Broken	Age	Depth (in)	Width (in)	Span (in)	Load (lbs)	Strength PSI	Strength MPA	% of SPEC.	SC*	Broken By
RC97-2-28-A	10/5/2024	28	6.00	6.00	18.00	8,525	710	4.90	109.2	G	David Mikesell
RC97-2-28-B	10/5/2024	28	6.00	6.10	18.00	8,940	735	5.05	113.1	G	David Mikesell
RC97-2-28-C	10/5/2024	28	6.00	6.00	18.00	8,320	695	4.80	106.9	G	David Mikesell

FC = Field Cure, INV = Invalid Test

Average 28 Day Strength (psi): 715

1 Cone/Cone; 2 Cone Split/Cone Vertical; - Cone Shear; 4 Shear/Diagonal; 3 Columnar/Columnar; 5 Edge Fracture; 6 Two Edge Fracture.
Cylinder End Cap Preparation - Sulfur = ASTM C617; Neoprene = ASTM C1231
*Sample Condition: G = Good, F = Fair, P = Poor, D = Damaged

Remarks: See mix design for additional information.

Technician: Kurtis A
Digital Signature By User Login

Manager: Belinda Torres
Title: Laboratory Manager
Digital Signature By User Login

Lab Address: 2688 S. Redwood Rd. Suite E,F,G,H West Valley City Utah, 84119
System Link: http://cmt-data.com/assignments/B436650A-67E8-4492-6CAF-1D71E169A941
System Path: Roman Cement Laboratory Services - 3918 / CONCRETE / 3918 ConcBeamSet KA09/07/2024