Project Name: UNIVERSITY OF CALIFORNIA, MERCED
CAOB TRENCH DRAIN
Project No.: 900290

ADDENDUM NO. 1

to the

CONTRACT DOCUMENTS

June 13, 2019

I. Bidder acknowledges that it is the Bidder's responsibility to ascertain whether any Addenda have been issued and if so, to obtain copies of such Addenda. Bidder therefore agrees to be bound by all Addenda that have been issued for this bid.

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents. The following changes, additions, or deletions shall be made to the following documents as indicated and all other Contract Documents shall remain the same.

II. CLARIFICATIONS

1. **Q:** Item 5 of Supplementary Instructions to Bidders states that a bid bond is not required. Item 12.1 of the Bid Form requires the submission of Bid Security. Please clarify.

A: No bid bond is required. You can indicate "Not Required".

2. **Q:** The drawings do not outline testing and inspection requirements. To that end, it is not clear what, if any, testing and inspection by third parties is the responsibility of the bidder/contractor to retain and pay for. Please clarify.

A: University pays for all inspections and special testing. University does not pay for manufacturer testing or inspection for install or product certifications.

3. Q: Will the University provide the concrete mix design of the existing for Contractor use?

A: Concrete mix design provided.

III. BIDDING/CONTRACT DOCUMENTS AND DIVISION 1 SPECIFICATIONS – VOLUME 0

1. Jobwalk Sign-in Sheet

V. DRAWINGS

1. Delete drawing set and Replace with Addendum 1 drawings attached.

2. C-2 identifies Deductive Alternate 1.

3. C-3 identifies ACO pre-manufactured trench drain in lieu of cast-in-place. Contractors option.

C-0	Cover Sheet	6/12/2019	C-1	Notes	6/12/2019
C-2	Civil Improvements Plan	6/12/2019	C-3	Civil Construction Details	

VI. **ATTACHMENTS**

Drawings

Jobwalk Sign-in Sheet

UNIVERSITY OF CALIFORNIA, MERCED

By: University of California, Merced

_____

Fran Telechea
Executive Director
Design & Construction Management

End of Addendum No. 1

CAOB Trench Drain
Jobwalk
June 13, 2019
10:00 am

JASON ZUNIGA ZUNIGA CONSTRUCTION CO 559 252-6181
JOE FALKSON MIDCAL PIPELINE 385-7473
MADISON SORENSEN MIDLAND/ (209) 355-6868
MONTEROSSO DEVELOPMENT (MADISON@GOMIDLA
ROBERT NEWMAN AVISON CONSTRUCTION INC. 559-476-6270
CSHORT@AVISONINC.COM

Submittal Transmittal

Detailed, Grouped by Each Number

Classroom and Academic Office Building
5200 N Lake Rd
Merced CA 95343

Project # 900290-CAOB-C
Tel: 209 228-4479 Fax: 209 228-4468

University of California, Merced

Date: 2/5/2015 **Reference Number: 0815**

Transmitted To:	Chris Salmon Sundt Construction, Inc. 2860 Gateway Oaks Dr Ste 300 Sacramento, CA 95833 Tel: 916-830-8000 Fax: 916-830-8015	**Transmitted By:**	Kevin Bauer University of California, Merced 767 E. Yosemite Ave Suite C Merced, CA 95340 Tel: 209-228-4320 Fax: 209-228-4261

Qty	Submittal Package No	Description	Due Date	Package Action
1	03 32 00-0001 - - 1	Landscape Cast-in-Place Concrete	2/20/2015	Approved as Noted

Transmitted For	Delivered Via	Tracking Number
Construction	Email	

Items	Qty	Description	Notes	Item Action
0001	1	Expansion Joint Filler	- See comments on page 5, 8, 24, 31, 33, 36, 39, 48, 52, 54, 57, 59-61.	For Review & Approval
0002	1	Integral Color		For Review & Approval
0003	1	Concrete Mix Design		For Review & Approval
4	1	Product Data		For Review & Approval
5	1	Samples	- Provide samples for University review.	Approved

Cc:	Company Name	Contact Name	Copies	Notes

Remarks

Signature **Signed Date**

Submittal Transmittal

Solomon Cordwell Buenz | 255 California Street Floor 3 San Francisco CA 94111 United States

PROJECT	2012040 UC Merced – Classroom+Academic Ofc Bldg 2012040	DATE SENT	2/5/2015
SUBJECT	[PM_MAIL] [Classroom and Academic Office Building] CAOB: 03 32 00-0001-1 Submittal For Review Landscape Cast-in-Place Concrete	SUBMITTAL ID	03 32 00-0001-1 Landscape Cast-in-Place Concrete
TYPE	Submittal	TRANSMITTAL ID	01488
PURPOSE	For Information Only - Resubmittal Not Required	VIA	Email
SPEC SECTION:	03 32 00		

FROM

NAME	COMPANY	EMAIL	PHONE
Scott Odom	Solomon Cordwell Buenz	scott.odom@scb.com	(415) 216-2449

TO

NAME	COMPANY	EMAIL	PHONE
Kevin Bauer	University of California Merced	kbauer@ucmerced.edu	
Jessica Duffy	University of California Merced	jduffy2@ucmerced.edu	
Robin Walker	UC Merced	rwalker6@ucmerced.edu	

REMARKS:

Hello UC Merced,

Please refer to SWA's stamp and review comments for actions on the submittal. The transmittal cover shows SCB's action. I reviewed the submittal and the review comments with the meeting minutes and my own notes in consideration.

Kind regards,

Scott

CONTENTS

QUANTITY:	1	DATED:	2/2/2015	NUMBER:	

DESCRIPTION:

03 32 00-0001-1 Submittal For Review.pdf

Submittal Transmittal

DATE: 2/5/2015
ID: 01488

ACTION:
REMARKS:

QUANTITY: 1 DATED: 2/2/2015 NUMBER:

DESCRIPTION:
PMATH1.txt

ACTION:
REMARKS:

COPIES:

Leon Waller	(University of California Merced)
Ross Wagner	(Solomon Cordwell Buenz)

SUBMITTAL COVER PAGE

SUNDT CONSTRUCTION, INC.
2860 Gateway Oaks Drive, Suite 300
Sacramento, CA 95833
(916) 830 8000

033200-001-1 Landscape Cast-in-Place Concrete

PROJECT: **UC Merced Classroom and Academic Office Building**

ARCHITECT: **Solomon Cordwell Buenz**
255 California Street, 3rd Floor
San Francisco, CA 94111

PROJECT NUMBER: **Sundt # 151383**

DATE: 1/30/15

SUBCONTRACTOR PREPARED BY: Roebbelen

SUPPLIER:

MANUFACTURER:

SPECIFICATION SECTIONS INCLUDED:

1.4 A - Product Data

1.4 B - Samples

1.5 H - Design of Concrete Mix

*LEED Documents to be provided after procurement of material

**Samples forthcoming

03 32 00-0001-1
submittal no.

☐ APPROVED — RESUBMITTAL ☐ REQUIRED
☐ APPROVED AS NOTED
☐ NOT APPROVED
☒ FOR INFORMATION ONLY — RESUBMITTAL ☐ NOT REQUIRED
REFER TO CONSULTANT'S REVIEW COMMENTS
☐ FOR ARCHITECTURAL INTENT

Corrections or comments in this review do not relieve the Contractor from compliance with requirements of the drawing specifications. This review is only for general conformance with the design concept of the project, for the purpose of selecting the specific color, texture or other visual characteristics of the product sample or range of samples within the requirements of the contract documents, and/or for general compliance with the information given in the contract documents. The Contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of the construction; coordinating the work with that of all other trades; and performing the work in a safe and satisfactory manor.

Scott Odom — by
02/05/15 — date

SCB Solomon Cordwell Buenz
Chicago
San Francisco
scb.com

SUBMITTAL REVIEW

SUNDT CONSTRUCTION INC. N. CALIFORNIA
2860 Gateway Oaks Drive, Suite 300
Sacramento, CA 95833
(916) 830-8000

☒ Reviewed ☐ Reviewed and Noted
☐ Comments Attached ☐ Rejected

Review of this submittal, whether by the Contractor, the Owner, or the Owner's Authorized Agent, shall under no circumstances alter the requirements of the original drawings, specifications, Contract Documents, Subcontract Payments or purchase agreements for quality, quantity, dimension, design, configuration or manufacture nor shall such review constitute acceptance by the Contractor of any method, material or equipment not ultimately acceptable to the Owner's Authorized Agents.

By: Chris Salmon **Date:** 1/30/15

Submittal No: 033200-001-1

SUBMITTAL SCHEDULE
(Refer to Section 01334 Shop Drawings, Project Data and Samples)

PROJECT NAME: STUDENT SERVICES BUILDING
UNIVERSITY OF CALIFORNIA, MERCED
MERCED CALIFORNIA

PROJECT NO: 900120

FACILITY: PHYSICAL PLANNING, DESIGN & CONSTRUCTION,
UNIVERSITY OF CALIFORNIA, MERCED CAMPUS

CONTRACT DATE: April 8th, 2013

Contractor /SUBCONTRACTOR: Roebbelen

SPECIFICATION SECTION: 03 32 00

WORK ACTIVITY: Landscape Concrete

Event	Scheduled Completion Date	Actual Completion Date	Calendar Days Required to Complete
1. Received by Contractor and Time for Checking	12/16/14	12/16/14	2
2. First Delivered to University's Representative and Time for Checking	12/16/14	12/16/14	18
3. Return to Contractor	1/3/15	1/12/15	
4. Corrections Completed and Time for Corrections	1/7/15	1/30/15	4
5. Next Delivered to University's Representative and Time for Checking	1/7/15	1/30/15	18
6. Return to CM/Contractor	1/25/15	2/17/15	
7. Approval for Job Information	7/11/15	7/11/15	
8. Approval for Fabrication and Time for Fabrication	7/11/15	7/11/15	21
9. Fabrication Completed	8/1/15	8/1/15	
10. Shipping Date and Time en Route	8/1/15	8/1/15	5
11. Delivery to Job	8/6/15	8/6/15	

MATERIAL SUBMITTAL TRANSMITTAL / APPROVAL FORM

From: Eric Sauceda Date: 01/30/2015

Subcontractor: Roebbelen Contracting

Specification Section: 03 32 00 Sub-section: 1.4, 1.5, 2.2, 2.3, 2.5, 2.7

Product: Landscape Cast in Place Concrete

Comply with Specifications: (Yes) No

Substitution: Yes (No) If Substitution, Provide Exhibit 22

Reviewed By: _____

Submitted to UCM: _____

UCM Received: ____

Submitted to Design Team/UC Rep. ___

Notes: Submittal copy sent via email to: Chris Salmon

Item No.	Specification	Description of Material/Shop Drawing	Date	Status
01	03 32 00	3000 psi Mix Design	01/30/2015	MCN/SWA_2/04/15
02	03 32 00	QAQC Fly Ash Test Report	01/30/2015	NET/SWA_2/04/15
03	03 32 00	Concrete Test Reports	01/30/2015	NET/SWA_2/04/15
04	03 32 00	Coloring Agent Product Data	01/30/2015	NET/SWA_2/04/15
05	03 32 00	Expansion Joint Material Product Data	01/30/2015	NET/SWA_2/04/15
06	03 32 00	Etch Retarder Product Data	01/30/2015	MCN/SWA_2/04/15
07	03 32 00	Detectable Warning Surface Tile grout	01/30/2015	MCN/SWA_2/04/15
		Form Release Agent		MCN/SWA_2/04/15
8	03 32 00	Site Joint Layout Plan Drawing	01/30/2015	
		Sample ADA Tile Sample		NET/SWA_2/04/15

By completing this form the undersigned General Contractor certifies that the material and shop drawings complies with all drawings and s
Contractor has reviewed submittal procedures specified in division 1. Checking is for general conformance with the design concept only. Rev
contract requirements are waived unless specifically noted. General Contractor is responsible for identifying all proposed material sub
construction and coordination with all other trades

Still under review , awaiting Structural Engineer's input for column footing, Grid Line `F'. Final Jointing Comments/ Revision to follow at later date. 2/4/15

BUILDERS CONCRETE

ROEBBELEN CONTRACTING June 2, 2014

SUBJECT: UC MERCED CLASSROOM & ACADEMIC OFFICE BLDG -MERCED

MIX – ND11532 – 2500/3000 PSI, 5.50 SK, 1" (SIZE 57) AGGREGATE – **PER SPEC SECT. 03 32 00 1.5H1a, b & SPECIAL PAVING MIX**

GENTLEMEN:

Submitted herewith are the mix designs for concrete that we propose to furnish for the above project.

LIMITATIONS:

1. The concrete mix designs submitted are in conformance with ACI 301 and ASTM standards and other generally accepted engineering practices. Purchaser agrees to abide by the operational and acceptance standards set forth by those organizations.
2. Prior to delivery it is the responsibility of the purchaser to obtain approval of these mix designs from the necessary authorities. Supplier assumes no responsibility for obtaining or verifying approvals. By ordering, the purchaser acknowledges receipt of all approvals for this or any other mix the purchaser orders for this project.
3. This concrete mixture will produce concrete meeting the design criteria when sampled in accordance with C-94 – 00 and ASTM C172 – 99. The minimum 28 day compressive strength may not meet project requirements if the slump is not within specified limit and/ or the water cement ratio exceeds design.
4. The concrete must be placed, protected, and cured in strict accordance with ACI 318 – 11, and the specified references stated in the approved project specifications.
5. Prior to placement, it is the responsibility of the purchaser to verify the air content of those mixes requiring entrained air. BUILDERS CONCRETE CO., INC. does not accept liability for concrete that does not meet air entrainment specifications after it has been placed in the forms.
6. BUILDERS CONCRETE CO., INC. takes no responsibility for concrete performance when the workmanship deviates from the standards and practices stated herein.

We appreciate the opportunity to be of service to you. Should you have any questions regarding the information provided, please contact our office.

Respectfully,

Justin Cook
Quality Control

APPENDIX A

BUILDERS CONCRETE

AGGREGATE
SECTION 03 32 00 2.2 E 2.

NOTE: MIX DESIGN AND TRIAL BATCH DATA ARE BASED ON USAGE OF ASTM C-33 1" (SIZE #57) AGGREGATE. ASTM C-33 3/4" (SIZE #67) CONCRETE AGGREGATE IS NOT AVAILABLE THROUGH LOCAL SUPPLIERS.

This mix design is intended to meet or exceed the requirements for the curb & gutter along Rancher's Road per 32 12 33 and all landscape CIP concrete (pavements, stairs, walls, footings, and subslabs per 03 32 00.

Builder Concrete/Viking Ready Mix/Golden Empire
P.O. 9129
3664 W. Ashlan
Fresno , Ca, 93790
(559)225-3667

seeMIX II Mix Report
MS ND11532
Compressive Strength:3,000 psi
Flexural Strength:0 psi

Contractor : ROEBBELEN CONTRACTING
Project : UC MERCED CLASSROOM & ACADEMIC OFFICE BLDG -MERCED
Source of Concrete : BUILDERS CONCRETE - MERCED PLANT
Construction Type : SPEC SECT. 03 32 00 1.5H1a, b & SPECIAL PAVING MIX
Placement : TAILGATE/PUMP

Weights per Cubic Yard (Saturated, Surface-Dry)

	Quantity	Density	Yield, ft³
TYPE II PORTLAND CEMENT, lb	388	3.150	1.97
TYPE F FLY ASH, lb	129	2.330	0.89
Water, lb	279	1.000	4.47
1X4 COARSE AGGREGATE, lb	1,587	2.680	9.49
3/8" PEA GRAVEL, lb	280	2.680	1.67
CONCRETE SAND, lb	1,326	2.630	8.08
EUCON NW (TYPE A WATER REDUCER), oz (US)	18.1	1.000	0.02
Total Air, %	1.5 ± 0.0		0.41
			==========
		TOTAL	27.00

Water/Cement Ratio, lbs/lb	0.54
Slump, High, in	4.00
Low, in	2.00
Concrete Unit Weight, pcf	147.78
Yield, %	100.0

5.50 SK W/ 25% FA. 1" AGG.

NOTE: DAVI D AT MANUFACTURERS DOSAGE RATE
OF 1.25 LB COLOR MUST BE ORDERED BY
CONTRACTOR

Prepared b

JUSTIN COC

6/2/2014

REVIEWED (see GENERAL CONDITIONS)
☐ NO EXCEPTIONS TAKEN
■ MAKE CORRECTIONS NOTED
☐ REVISE & RESUBMIT
☐ REJECTED

If noted NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED, fabrication may be undertaken. Review does not authorize changes to contract sum unless saved in duly executed Change Order. If noted REVISE & RESUBMIT or REJECTED, fabrication may not be undertaken. Resubmit corrected copies for re-review. Corrections shall be limited to items marked. Reviewing is only for general conformance with the design concept of the project and general compliance with information given in the Contract Documents. Contractor is responsible for confirmation and correlation of all dimensions at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all trades. Review of a specific item does not indicate review of an assembly of which the item is a component, nor shall it indicate that the item will perform it's intended function or as required by the Contract Documents. Distribution of documents by the Contractor shall constitute his approval.

swa
2200 BRIDGEWAY BOULEVARD SAUSALITO, CA 94965
UNITED STATES OF AMERICA TEL. +1.415.332.5100

By: Rick Story Date: Feb. 4. 2015

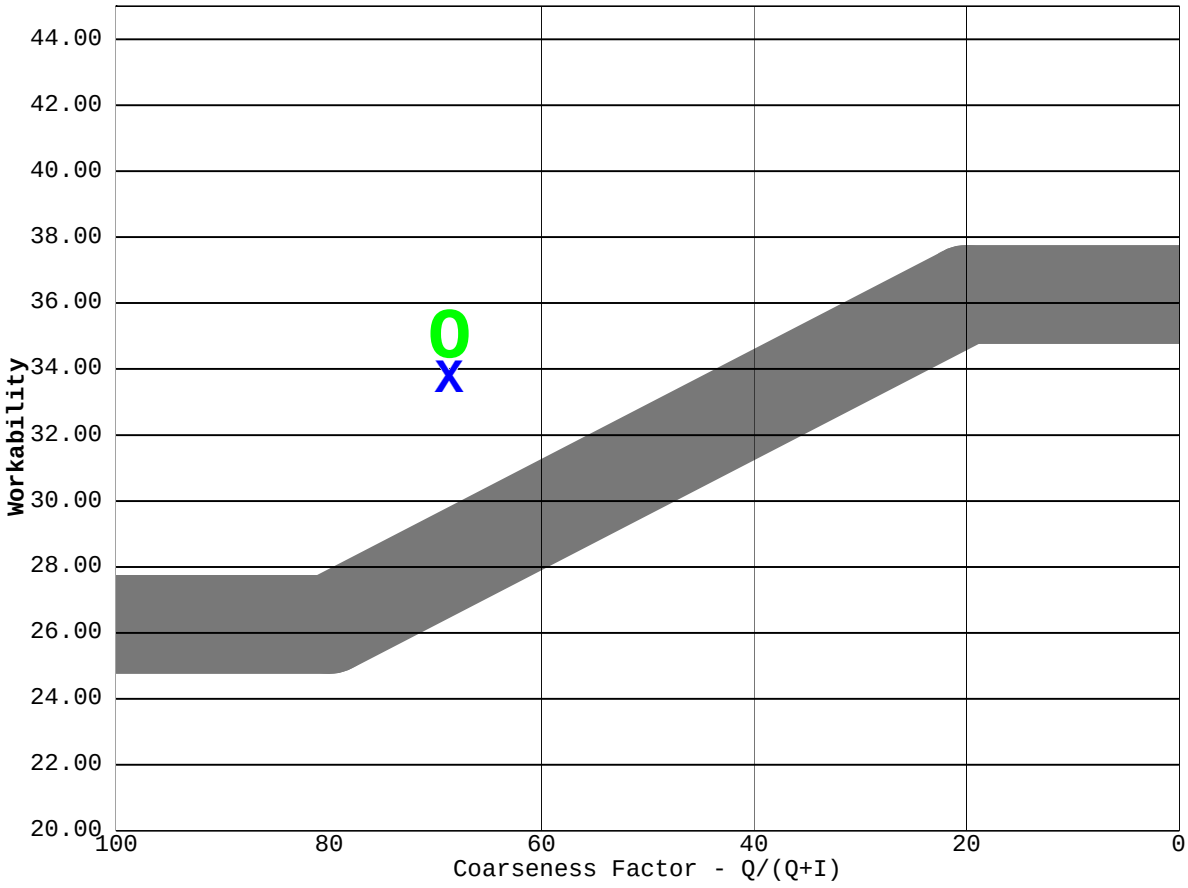
Resubmittal 01_Per Conference Call 1/29/15:
Concrete Mix with less than 2% of 1" aggregate is acceptable to use. Means and methods for placement with in walls /vertical surfaces shall follow placement recommendations per Section 033200_3.3_D to obtain a smooth face.
R. Story Feb 4, 2015

Mix Analysis

Coarseness (44.7 / (44.7 + 20.4)) * 100	68.7
Workability	34.9
W - Adjust	33.7
Percent Mortar	53.6
Total Fineness Modulus	5.12

	Air	Water	Paste
%Paste	5.2	57.6	-
%Mortar	2.8	30.9	53.6
%Total	1.5	16.6	28.7

Coarseness Factor Chart



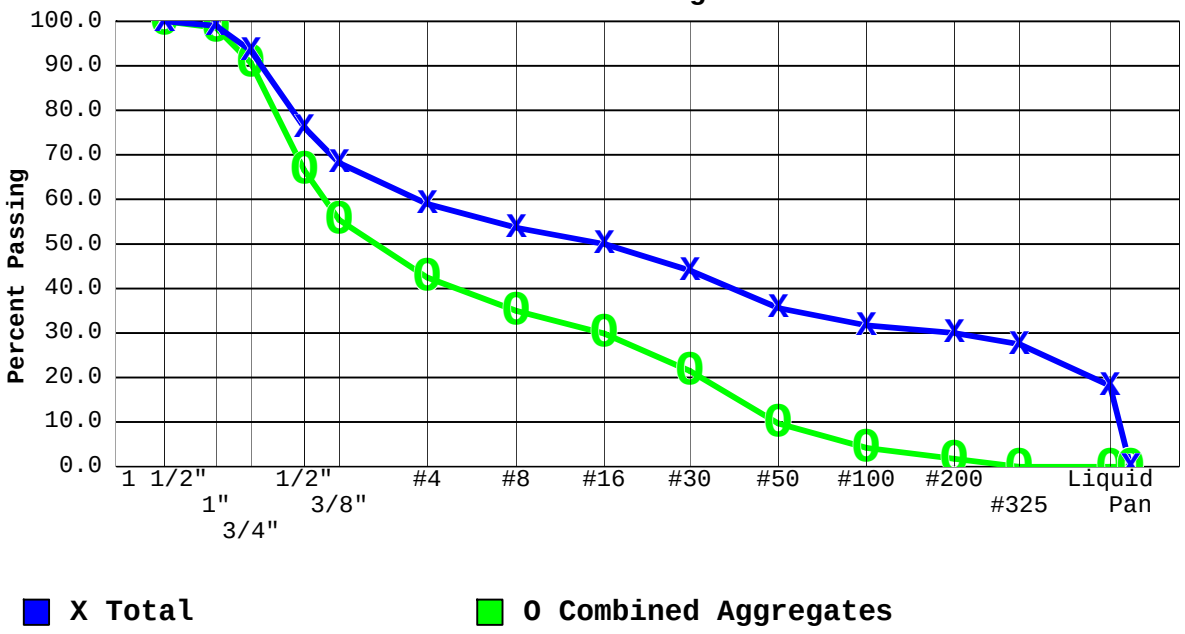
Full Gradation Analysis

Percent Passing

Sieve	Agg.1	Agg.2	Agg.3	Paste	Total	Aggr.
1 1/2"	100.0	-	-	-	100.0	100.0
1"	97.0	-	-	-	98.9	98.5
3/4"	81.0	-	-	-	93.3	90.6
1/2"	32.0	100.0	-	-	76.1	66.5
3/8"	11.0	91.0	100.0	-	68.2	55.3
#4	2.0	3.0	98.0	-	59.0	42.4
#8	0.0	1.0	83.0	-	53.6	34.9
#16	-	0.0	71.0	-	50.0	29.8
#30	-	-	51.0	-	44.0	21.4
#50	-	-	23.0	-	35.6	9.7
#100	-	-	10.0	-	31.7	4.2
#200	-	-	4.2	100.0	30.0	1.8
#325	-	-	0.0	95.6	27.5	0.0
Liquid	-	-	-	63.1	18.1	-
Pan	-	-	-	0.0	0.0	-
Fineness Modulus	7.06	6.05	2.64			
% of Aggregate	49.30	8.70	42.00			
% of Total	35.14	6.20	29.93			

Agg.1 : 1X4 COARSE AGGREGATE
Agg.2 : 3/8" PEA GRAVEL
Agg.3 : CONCRETE SAND

Percent Passing Chart



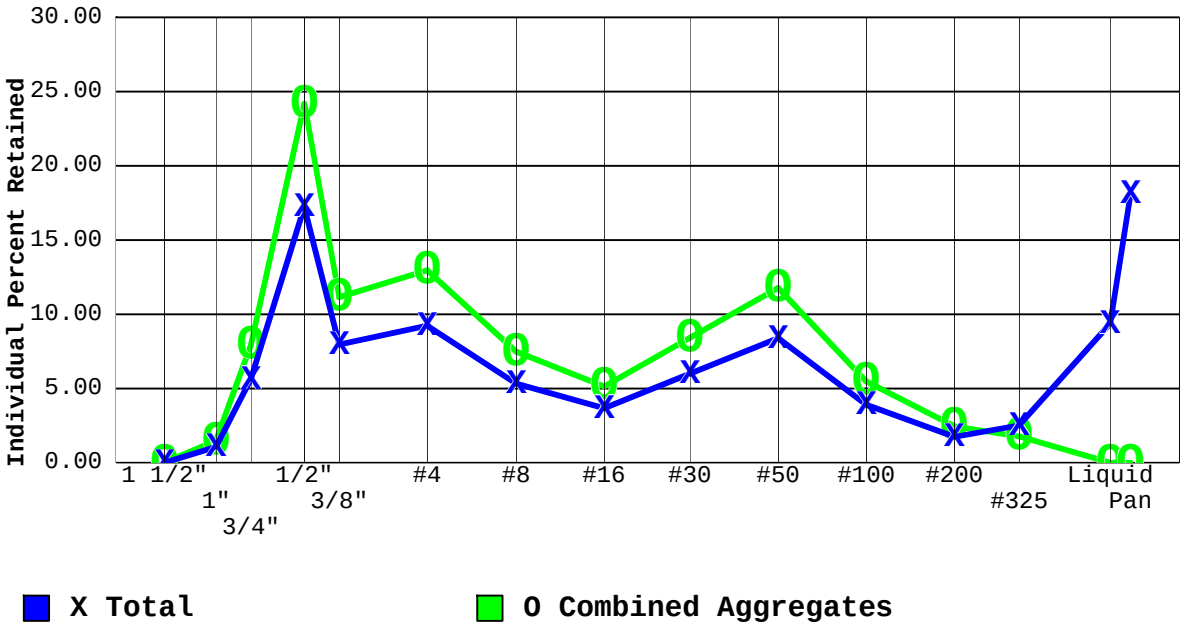
Full Gradation Analysis

Percent Retained

Sieve	Agg.1	Agg.2	Agg.3	Paste	Total	Aggr.
1 1/2"	0.0	0.0	0.0	0.0	0.0	0.0
1"	3.0	0.0	0.0	0.0	1.1	1.5
3/4"	16.0	0.0	0.0	0.0	5.6	7.9
1/2"	49.0	0.0	0.0	0.0	17.2	24.2
3/8"	21.0	9.0	0.0	0.0	7.9	11.1
#4	9.0	88.0	2.0	0.0	9.2	12.9
#8	2.0	2.0	15.0	0.0	5.3	7.5
#16	0.0	1.0	12.0	0.0	3.7	5.1
#30	0.0	0.0	20.0	0.0	6.0	8.4
#50	0.0	0.0	28.0	0.0	8.4	11.8
#100	0.0	0.0	13.0	0.0	3.9	5.5
#200	0.0	0.0	5.8	0.0	1.7	2.4
#325	0.0	0.0	4.2	4.4	2.5	1.8
Liquid	0.0	0.0	0.0	32.5	9.3	0.0
Pan	0.0	0.0	0.0	63.1	18.1	0.0
Fineness Modulus	7.06	6.05	2.64			
% of Aggregate	49.30	8.70	42.00			
% of Total	35.14	6.20	29.93			

Agg.1 : 1X4 COARSE AGGREGATE
Agg.2 : 3/8" PEA GRAVEL
Agg.3 : CONCRETE SAND

Individual Percent Retained Chart



MS ND11532 3,000 psi

Concrete Mixture Submittal

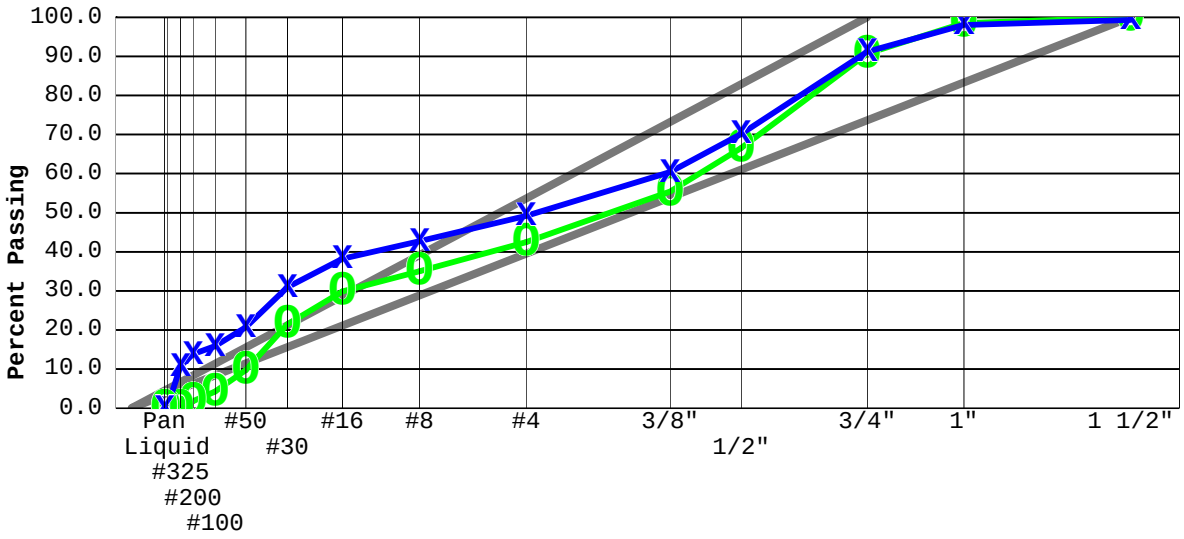
Full Gradation Analysis

Percent Passing

Sieve	Agg.1	Agg.2	Agg.3	Paste	Total	Aggr.
1 1/2"	100.0	-	-	-	100.0	100.0
1"	97.0	-	-	-	98.9	98.5
3/4"	81.0	-	-	-	93.3	90.6
1/2"	32.0	100.0	-	-	76.1	66.5
3/8"	11.0	91.0	100.0	-	68.2	55.3
#4	2.0	3.0	98.0	-	59.0	42.4
#8	0.0	1.0	83.0	-	53.6	34.9
#16	-	0.0	71.0	-	50.0	29.8
#30	-	-	51.0	-	44.0	21.4
#50	-	-	23.0	-	35.6	9.7
#100	-	-	10.0	-	31.7	4.2
#200	-	-	4.2	100.0	30.0	1.8
#325	-	-	0.0	95.6	27.5	0.0
Liquid	-	-	-	63.1	18.1	-
Pan	-	-	-	0.0	0.0	-
Fineness Modulus	7.06	6.05	2.64			
% of Aggregate	49.30	8.70	42.00			
% of Total	35.14	6.20	29.93			

Agg.1 : 1X4 COARSE AGGREGATE
Agg.2 : 3/8" PEA GRAVEL
Agg.3 : CONCRETE SAND

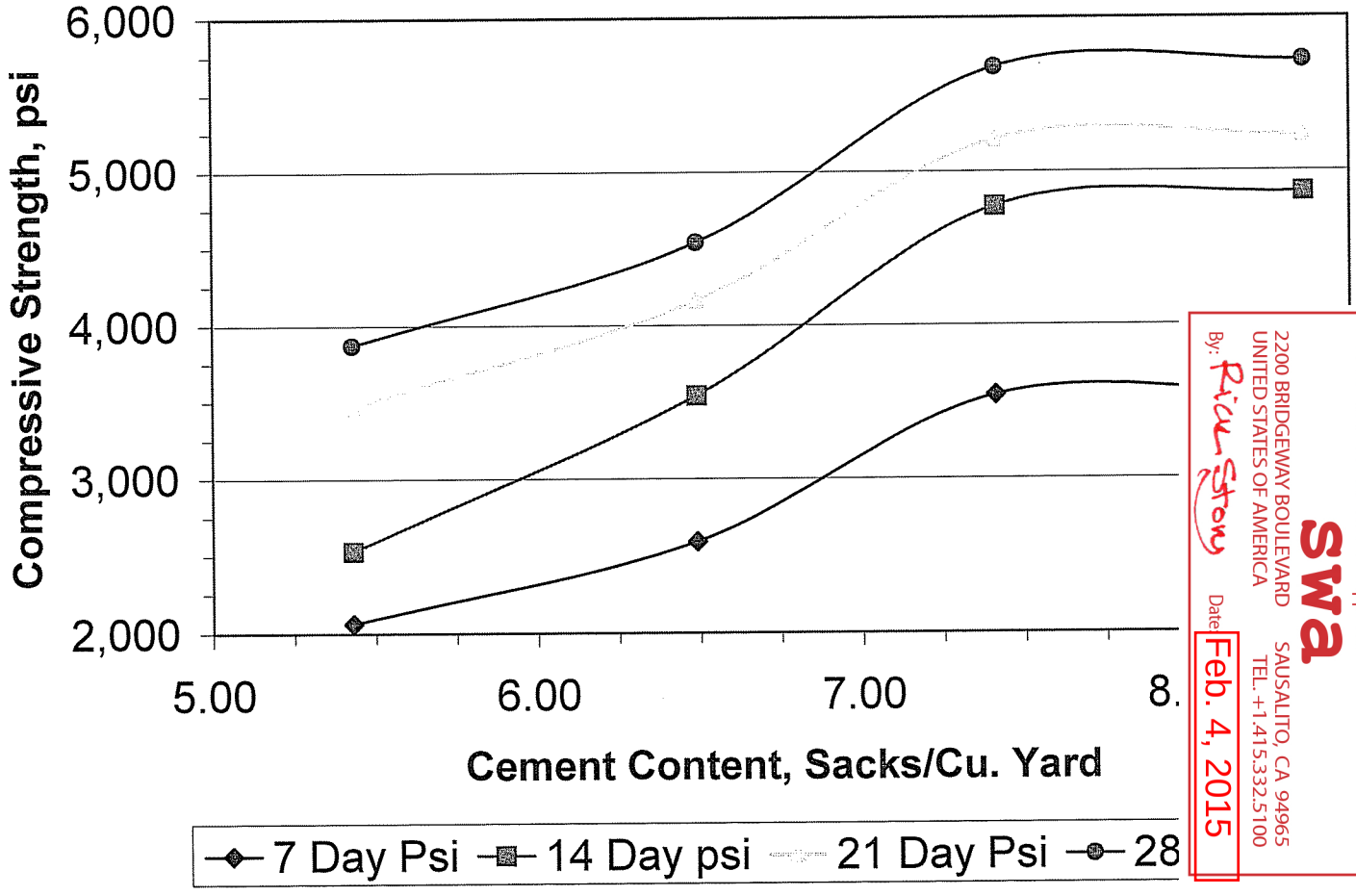
.45 Power Chart



X Total Solids O Combined Aggregates

Appendix B

Merced Plant
Nominal Sack Content Vs. PSI



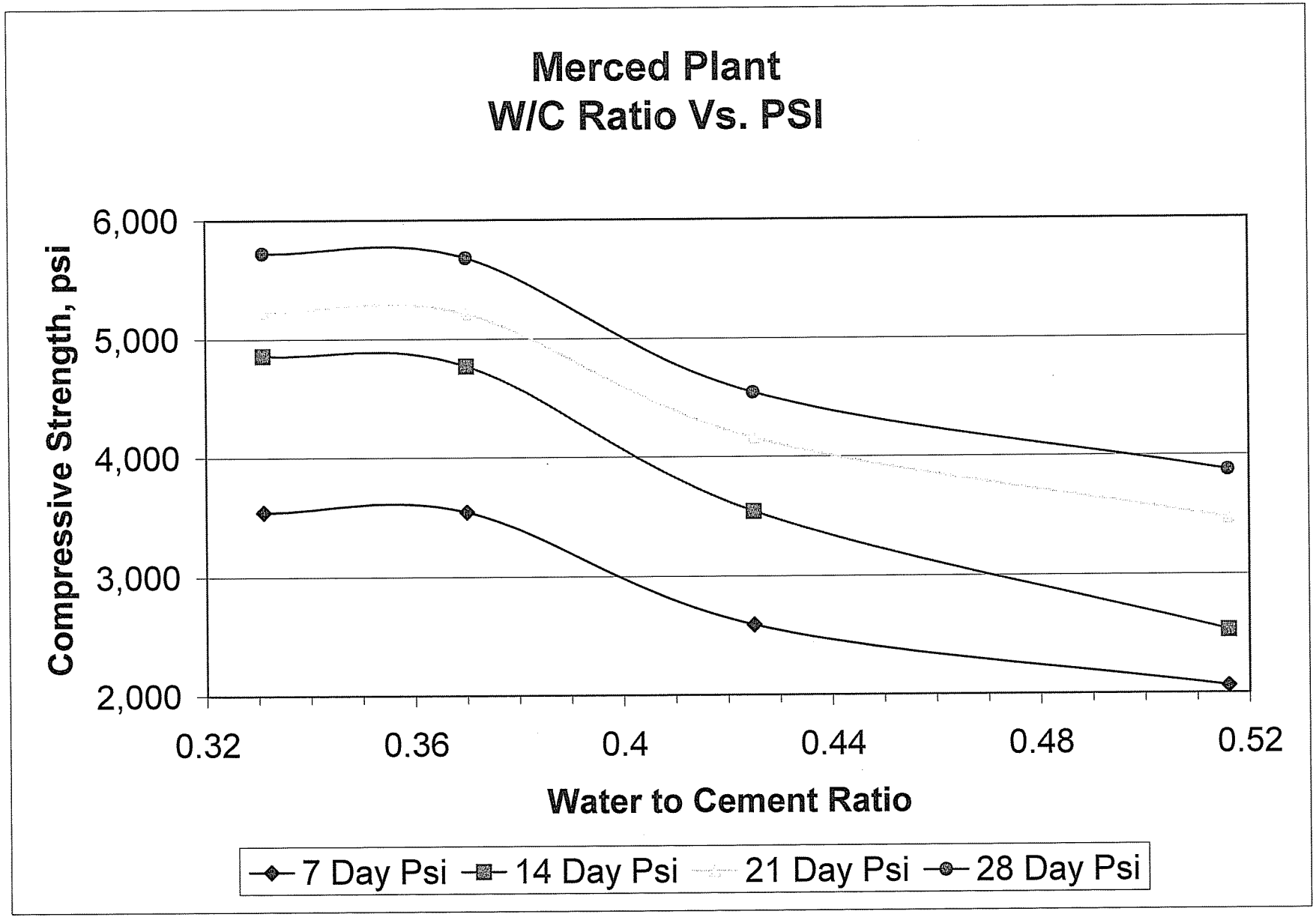
REVIEWED (see GENERAL CONDITIONS)

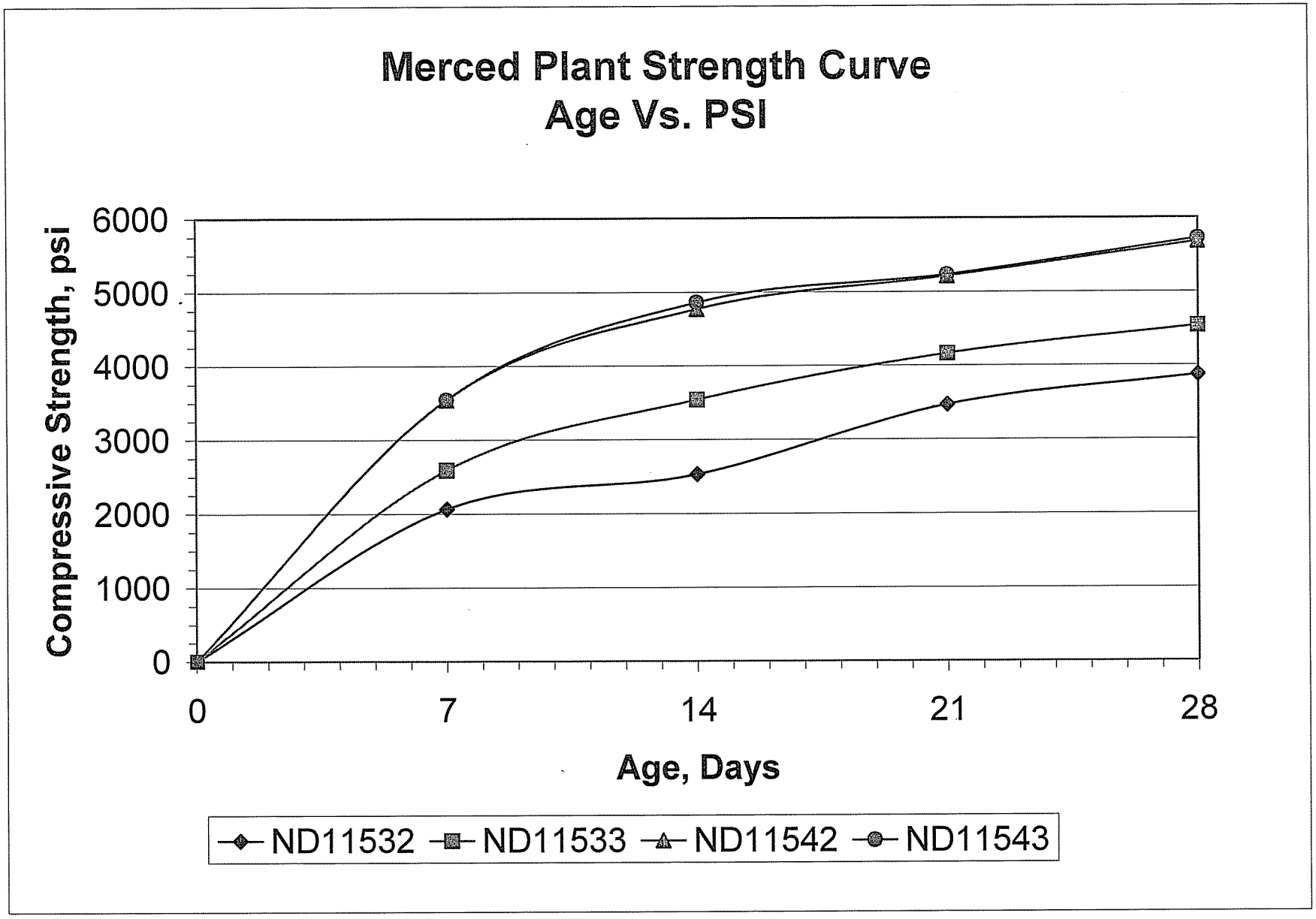
■ NO EXCEPTIONS TAKEN
☐ MAKE CORRECTIONS NOTED
☐ REVISE & RESUBMIT
☐ REJECTED

If noted NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED, fabrication may be undertaken. Review does not authorize changes to contract sum unless saved in duly executed Change Order. If noted REVISE & RESUBMIT or REJECTED, fabrication may not be undertaken. Resubmit corrected copies for re-review. Corrections shall be limited to items marked. Reviewing is only for general conformance with the design concept of the project and general compliance with information given in the Contract Documents. Contractor is responsible for confirmation and correlation of all dimensions at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all trades. Review of a specific item does not indicate review of an assembly of which the item is a component, nor shall it indicate that the item will perform it's intended function or as required by the Contract Documents. Distribution of documents by the Contractor shall constitute his approval.

swa
2200 BRIDGEWAY BOULEVARD SAUSALITO, CA 94965
UNITED STATES OF AMERICA TEL. +1.415.332.5100

By: Rick Story Date Feb. 4, 2015


Merced Plant
W/C Ratio Vs. PSI
Compressive Strength, psi
6,000
5,000
4,000
3,000
2,000
0.32
0.36
0.4
0.44
0.48
0.52
Water to Cement Ratio
7 Day Psi
14 Day Psi
21 Day Psi
28 Day Psi


Merced Plant Strength Curve
Age Vs. PSI
Compressive Strength, psi
6000
5000
4000
3000
2000
1000
0
0
7
14
21
28
Age, Days
ND11532
ND11533
ND11542
ND11543

NATIONAL CEMENT

National Cement Company of California, Inc.

LEBEC Plant

AASHTO R18

MILL TEST REPORT

We certify that the below described Portland Cement,at the time of shipment having Lot # 13- 29 meets the Chemical and physical requirements of TYPE II & V as per ASTM C150/C150M-11 and AASHTO M 85

Chemical Specifications and Analysis

	ASTM C150		Actual	
	TYPE II	TYPE V	Analysis	
SiO2	NA	NA	21.42	%
Al2O3	6.0 max	NR	4.24	%
Fe2O3	6.0 max	NR	3.92	%
CaO	NA	NR	63.69	%
MgO	6.0 max	6.0 max	3.04	%
SO3	3.0 max	2.3 max	2.52	% *
Loss	3.0 max	3.0 max	1.36	%
Insoluble	0.75 max	0.75 max	0.22	%
Eq.Alkalies	0.60 max	0.60 max	0.55	%
Free CaO	NR	NR	1.01	%
*** Meets ASTM C150, Table 1, Option D for Type-II & V**				
Potential Phase Compounds:				
C3S	NR	NR	51.7	%
C2S	NR	NR	22.4	%
C3A	8 max	5 max	4.6	%
C4AF	NR	NR	11.9	%
2C3A+C4AF	NR	25 max	21.1	%
%CO2	NA	NA	0.70	%
% Limestone	5.0 Max	5.0 Max	1.61	%
%CaCO3 in LS	70%min	70%min	98.05	%

Physical Specifications and Analysis

	ASTM C150		Actual
	TYPE II	TYPE V	Analysis
Air content of mortar(%volume)	12 max	12 max	6
Blaine, Sq.cm/gm	2600 min	2600 min	3904
Autoclave Exp. %	0.800 max	0.800 max	0.028
Time of Setting:			
Vicat (A),Initial	45 min	45 min	120
Vicat (A),Final	375 max	375 max	220
Gilmore, Inital	60 min	60 min	170
Gilmore, Final	600 max	600 max	270
C-1038 Mortar bar exp.(%)**		0.020 max	0.009
Compressive Strength:			
1 day (Psi)	NR	NR	2490
3 days (Psi)	1450 min	1160 min	3840
7 days (Psi)	2470 min	2180 min	4870
28 days (Psi)	NR	3050 min	6440

NA = Not Applicable
NR = No Requirement

**** Test result for this production period not available.Most recent test result provided.**

This Cement Meets Or Exceeds The Following Described Specifications

ASTM & AASHTO:	ASTM C150/150M-11and AASHTO M85 Types II & V Modified, (low Alkalie)
California:	Section 201-1.2 of Standard Specifications for Public Works Construction.
Caltrans:	Section 90-2.01 of Standard Specifications, T-II Modified Low Alkali

Main Office:

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Encino, Ca. 91436-2935
(818) 788-4228

NATIONAL CEMENT COMPANY OF CALIFORNIA

By: _____

KRISHNAMOHAN MALAY
QUALITY CONTROL MANAGER
3/1/13

HEADWATERS RESOURCES

ASTM C618 Testing of
Jim Bridger Fly Ash

Sample Type: 3200-ton **Report Date:** 1/13/2015

Sample Date: 11/4 - 11/7/14 **MTRF ID:** 2645JB

Sample ID: BR-130-14-T

Chemical Analysis			ASTM Limits Class F	ASTM Limits Class C	ASTM Test Method
Silicon Dioxide (SiO2)	60.39	%			
Aluminum Oxide (Al2O3)	17.72	%			
Iron Oxide (Fe2O3)	4.72	%			
Sum of Constituents	82.83	%	70.0% min	50.0% min	D4326
Sulfur Trioxide (SO3)	0.68	%	5.0% max	5.0% max	D4326
Calcium Oxide (CaO)	6.57	%			D4326
Moisture	0.04	%	3.0% max	3.0% max	C311
Loss on Ignition	0.75	%	6.0% max	6.0% max	C311
Physical Analysis					
Fineness, % retained on #325	22.63	%	34% max	34% max	C311, C430
Strength Activity Index - 7 or 28 day requirement					C311, C109
7 day, % of control	85	%	75% min	75% min	
28 day, % of control	92	%	75% min	75% min	
Water Requirement, % control	96	%	105% max	105% max	
Autoclave Soundness	0.03	%	0.8% max	0.8% max	C311, C151
Density	2.40				C604

Headwaters Resources certifies that pursu ***listed herein was generated by applicable ASTM metho***

Doug Rhodes, CET
Facility Manager

Materials Testing & Research Facility
2650 Old State Highway 113
Taylorsville, Georgia 30178
P: 770.684.0102
F: 770.684.5114

REVIEWED (see GENERAL CONDITIONS)

- ■ NO EXCEPTIONS TAKEN
- ☐ MAKE CORRECTIONS NOTED
- ☐ REVISE & RESUBMIT
- ☐ REJECTED

If noted NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED, fabrication may be undertaken. Review does not authorize changes to contract sum unless saved in duly executed Change Order. If noted REVISE & RESUBMIT or REJECTED, fabrication may not be undertaken. Resubmit corrected copies for re-review. Corrections shall be limited to items marked. Reviewing is only for general conformance with the design concept of the project and general compliance with information given in the Contract Documents. Contractor is responsible for confirmation and correlation of all dimensions at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all trades. Review of a specific item does not indicate review of an assembly of which the item is a component, nor shall it indicate that the item will perform it's intended function or as required by the Contract Documents. Distribution of documents by the Contractor shall constitute his approval.

swa
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UNITED STATES OF AMERICA TEL. +1.415.332.5100

By: Rick Story Date: Feb.4, 2015

IAP SM
AASHTO R18

Hanson Aggregates
Sunol QC Department

7999 Athenour Way, Sunol, CA 94586 (925) 862-2257 FAX (925) 862-0208

MINERAL AGGREGATE TEST DATA REPORT

DATE RECEIVED: 2/2/2012

DATE COMPLETED: 2/15/2012 TESTING LAB: Hanson-Sunol

SUPPLIER: Hanson

MATERIAL: 1x4 CMI MERCED SAMPLE LOCATION: CMI MERCED

GRADATION RESULTS: [X] **Cal 201,202** [X] **ASTM C117,C136**

Percent passing		Sample I.D.					
Sieve Size		**A**	**B**	**C**	**D**	**E**	**ASTM C 33**
Inches	(mm)						
3"	76.20						
2"	50.80						
1.5"	38.10	**100**					**100**
1"	25.40	**100**					**95 - 100**
3/4"	19.00	**85**					
1/2"	12.50	**47**					**25 - 60**
3/8"	9.50	**26**					
#4	4.75	**3**					**0 - 10**
#8	2.36	**2**					**0 - 5**
#16	1.18						
#30	0.60						
#50	0.30						
#100	0.15						
#200	0.08						

AGGREGATE QUALITY TEST RESULTS:							**ASTM C 33**
Resistance (R-Value [ ]Cal 301 [ ]ASTM D2844							
Cleanness Value [X]Cal 227		**89**					**75 min (CT)**
Durability Index [X]Cal 229 [ ]ASTM D3744	Dc	**74**					
	Df						
Sodium Sulfate Soundness % Loss [ ]Cal 214 [X]ASTM C88	Coarse						**12 % Max**
	Fine						
Los Angeles Abrasion % [X]Cal 211 [ ]ASTM C131	100 Revs	**5.4%**					
	500 Revs	**23.2%**					**50 % Max**
Flat & Elongated Particles (1:3) % [ ]Cal 119,120 [ ]ASTM D4791							
Specific Gravity & Absorption,Coarse [ ] Cal 207 [X] ASTM C128	BSG	**2.670**					
	APSG	**2.809**					
	BSG,SSD	**2.720**					
	%ABS	**1.9%**					
Organic Impurities [ ] ASTM C40							
Clay Lumps & Friable Particles (%) [ ]Cal [X]ASTM C142		**0.1%**					**5.0 % Max**
Coarse Agg. Unit Wt. ASTM C 29							
Coarse Agg. % Voids ASTM C 29							
Material Finer Than 200µm ASTM C 117, %		**1.3%**					**3.0 % Max**
Lightweight Particles ASTM C 123, %							**0.5% Max**

Notes:

ASTM C 88 Tested by Cupertino Laboratory

Tested by: **Mark Weiler** Date: **2/15/2012**

Hanson Aggregates

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MINERAL AGGREGATE TEST DATA REPORT

DATE RECEIVED: **2/2/2012**

DATE COMPLETED: **2/15/2012** TESTING LAB: **HANSON-SUNOL**

SUPPLIER: **CMI MERCED**

MATERIAL: **CONCRETE SAND** SAMPLE LOCATION: **CMI MERCED**

GRADATION RESULTS: [x] **Cal 201,202** [x] **ASTM C117,C136**

		Percent passing					Sample I.D.	
Sieve Size		A	B	C	D	E	ASTM C 33	SPEC. LIMITS
Inches	(mm)							
3"	76.20							
2"	50.80							
1.5"	38.10							
1"	25.40							
3/4"	19.00							
1/2"	12.50							
3/8"	9.50	**100**						**100**
#4	4.75	**96**						**95 -- 100**
#8	2.36	**80**						**80 -- 100**
#16	1.18	**69**						**50 -- 85**
#30	0.60	**46**						**25 -- 60**
#50	0.30	**17**						**5 -- 30**
#100	0.15	**5**						**0 --10**
#200	0.08	**3**						

AGGREGATE QUALITY TEST RESULTS: **ASTM C 33**

Resistance (R-Value) [ ]Cal 301 [ ]ASTM D2844						
Sand Equivalent [x]Cal 217 [ ]ASTM D2419		**81**				**75 min (CT)**
Durability Index [x]Cal 229 [ ]ASTM D3744	Dc					
	Df	**79**				
Sodium Sulfate Soundness % Loss [ ]Cal 214 [x]ASTM C88	Coarse					
	Fine					**10 % Max**
Los Angeles Abrasion % [ ]Cal 211 [ ]ASTM C131	100 Revs					
	500 Revs					
Flat & Elongated Particles (1:3) % [ ]Cal 119,120 [ ]ASTM D4791						
Specific Gravity & Absorption,Fine [ ] Cal 207 [x] ASTM C127	BSG	**2.617**				
	APSG	**2.733**				
	BSG,SSD	**2.660**				
	%ABS	**1.6%**				
Organic Impurities [x] ASTM C40		**CLEAR**				
Clay Lumps & Friable Particles (%) [ ]Cal [x]ASTM C142		**0.8%**				**3.0 % Max**
Fine Agg. Unit Wt. ASTM C-1252						
Fine Agg. % Voids ASTM C-1252						
Material Finer Than 200µm ASTM C 117, %		**2.8%**				**3.0% Max**
Lightweight Particles ASTM C 123, %						**0.5% Max**

ASTM C 88 Tested by Cupertino Lab.

Calculated By: **Mark Weiler** Date: **2/15/2012**

Hanson Aggregates
Sunol QC Department

7999 Athenour Way, Sunol, CA 94586 (925) 862-2257 FAX (925) 862-0208

MINERAL AGGREGATE TEST DATA REPORT

DATE RECEIVED: 2/2/2012
DATE COMPLETED: 2/15/2012 TESTING LAB: Hanson-Sunol
SUPPLIER:
MATERIAL: 3/8" Pea Gravel SAMPLE LOCATION: CMI - Merced

GRADATION RESULTS: [x] Cal 201,202 [x] ASTM C117,C136

Percent passing		Sample I.D.					
Sieve Size		A	B	C	D	E	ASTM C 33
Inches	(mm)						
3"	76.20						
2"	50.80						
1.5"	38.10						
1"	25.40						
3/4"	19.00						
1/2"	12.50	100					100
3/8"	9.50	89					85 -- 100
#4	4.75	3					10 -- 30
#8	2.36	1					0 -- 10
#16	1.18	1					0 -- 5
#30	0.60						
#50	0.30						
#100	0.15						
#200	0.08						

AGGREGATE QUALITY TEST RESULTS:						ASTM C 33
Resistance (R-Value) [ ] Cal 301 [ ] ASTM D2844						
Cleanness Value [x] Cal 227		81				75 min (CT)
Durability Index [x] Cal 229 [ ] ASTM D3744	Dc	58				
	Df					
Sodium Sulfate Soundness % Loss [ ] Cal 214 [x] ASTM C88	Coarse					12 % Max
	Fine					
Los Angeles Abrasion % [x] Cal 211 [ ] ASTM C131	100 Revs	5.1%				
	500 Revs	20.1%				50 % Max
Flat & Elongated Particles (1:3) % [ ] Cal 119,120 [ ] ASTM D4791						
Specific Gravity & Absorption, Coarse [ ] Cal 206 [x] ASTM C127	BSG	2.672				
	APSG	2.812				
	BSG,SSD	2.722				
	%ABS	1.9%				
Organic Impurities [ ] ASTM C40						
Clay Lumps & Friable Particles (%) [ ] Cal [x] ASTM C142		0.1%				3.0 % Max
Coarse Agg. Unit Wt. ASTM C 29						
Coarse Agg. % Voids ASTM C 29						
Material Finer Than 200µm ASTM C 117, %		0.2%				3.0% Max
Lightweight Particles ASTM C 123, %						.5% Max

Notes:
ASTM C 88 Tested by Cupertino Laboratory

Tested by: **Mark Weiler** Date: **2/15/2012**

EUCON NW

Water Reducing Admixture

Euclid Concrete Admixtures

WATER REDUCERS

EUCON NW

Master Format #: 03 3000 03 4000 03 7000

Description

EUCON NW is a concentrated solution of refined lignosulfonate, polymer and other water reducing and plasticizing chemicals. EUCON NW has no added chlorides and will not promote the corrosion of steel. EUCON NW is a water-reducing, normal-set admixture for concrete which provides a more plastic and cohesive mix in fresh concrete and better durability, reduced shrinkage and less permeability in the hardened concrete.

Primary Applications

- Ready mixed concrete
- Prestressed concrete
- Precast concrete
- Lightweight concrete
- Expansive concrete
- General purpose concrete

Features/Benefits

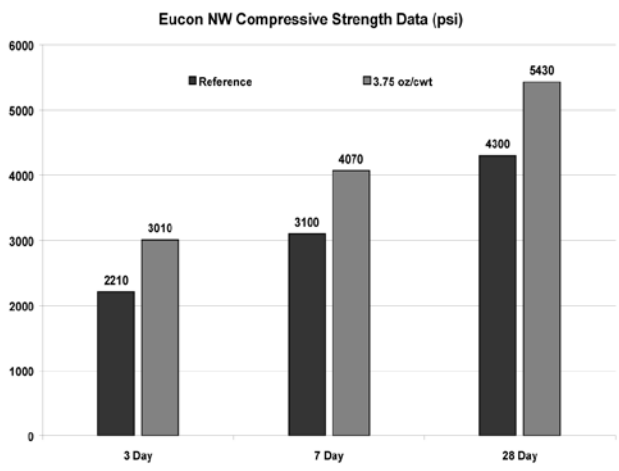
- Provides easier handling and finishing
- Increases strength
- Provides increased durability
- Reduces shrinkage and permeability

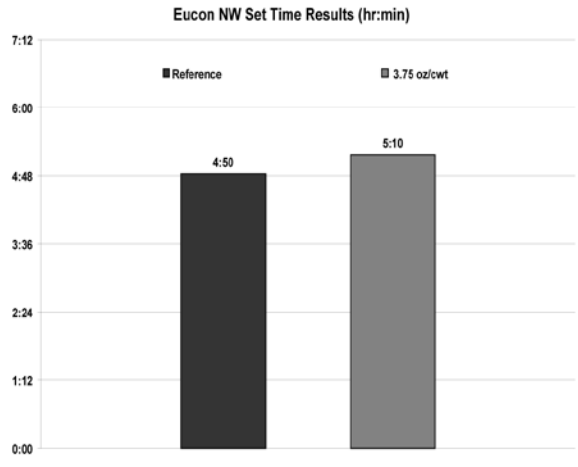
Technical Information

Perfomance Data

The following test results were achieved using typical ASTM C 494 mix design requirements, 517 lb/yd^3 (307 kg/m^3) cement content and similar (± 0.5)% air content.

These results were obtained under laboratory conditions with materials and mix designs meeting the specifications of ASTM C 494. Changes in materials and mix designs can affect the dosage response of EUCON NW.





The Euclid Chemical Company
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www.euclidchemical.com

An RPM Company

UL Registered Firm ISO 9001:2000 File#A129

Packaging

EUCON NW is packaged in bulk, 275 gal (1041 L) totes, 55 gal (208 L) drums and 5 gal (18.9 L) pails.

Shelf Life

1 year in original, unopened package.

Specifications/Compliances

EUCON NW meets or exceeds the requirements of:

- ASTM C 494, Type A
- AASHTO M 194

Directions for Use

EUCON NW is typically used at dosages of 2 to 6 oz per 100 lbs (130 to 390 mL per 100 kg) of cementitious material. Higher dosages are acceptable with prior testing and confirmation of the desired performance with specific materials being used.

EUCON NW should be added to the initial batch water of the concrete mixture. Do not dispense onto dry cement.

Precautions/Limitations

- Care should be taken to maintain EUCON NW above freezing; however, freezing and subsequent thawing will not harm the material if thoroughly agitated.
- Add to mix independent of other admixtures.
- In all cases, consult the Material Safety Data Sheet before use.

Rev. 10.10

Site Mockups to be provided at a later date. Color per SWA direction
Cobblestone 860 Iron oxide- 2lbs dose
Graystone 860 Iron oxide 1.5lbs dose
Pewter 860 Iron oxide 1bs dose.

DAVIS COLORS

1. Product Name
Davis Colors™ - Color Pigment Additives for Concrete and Concrete Products

2. Manufacturer
Davis Colors
3700 E. Olympic Boulevard
Los Angeles, CA 90023
(800) 356-4848
(323) 269-7311
Fax: (323) 269-1053
E-mail: info@daviscolors.com
www.daviscolors.com

3. Product Description
Davis Colors are made with pure, conc
pigments specially processed for mi
concrete or any other building materi
of cement. They are lightfast, alkali
weather resistant and formulated to g
lasting appeal to concrete. Davis Col
been giving concrete the added desig
sion of color since 1952. Davis Colors
exceed ASTM C979, which establishes t
ria for the alkali resistance, stability a
fastness of pigments and their com
with concrete.

BASIC USE
Use Davis Colors to beautify cast-in-place concrete buildings, structures and pavement. Davis Colors are also used in precast and tilt-up concrete, concrete masonry units and unit pavers, masonry mortar, shotcrete, plaster and other Portland cement based products. Concrete suppliers and product manufacturers normally add Davis Colors into the mix at the factory; therefore, the following information regarding packaging and mix instructions may not be necessary for architectural specifications.

COMPOSITION & MATERIALS
Davis Colors are color admixtures made from metal or mineral oxides either recycled from iron or refined from the earth. Most Davis Colors are made from iron oxide, an inert and environmentally safe material. Davis Colors 807 and 8084 are concentrated carbon black, treated in a proprietary process for extra tint strength and dispersibility. They are economical alterna-

ot air entrained and is
nage.
Davis Colors are manufactured to exact quality control standards to maintain uniformity of color from shipment-to-shipment and year-to-year. They are mechanically milled to microscopic particle size to obtain high tinting strength, particularly in concrete applications.

COLORS
Davis Colors are available in a wide spectrum

REVIEWED (see GENERAL CONDITIONS)
☐ NO EXCEPTIONS TAKEN
■ MAKE CORRECTIONS NOTED
☐ REVISE & RESUBMIT
☐ REJECTED
If noted NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED, fabrication may be undertaken. Review does not authorize changes to contract sum unless saved in duly executed Change Order. If noted REVISE & RESUBMIT or REJECTED, fabrication may not be undertaken. Resubmit corrected copies for re-review. Corrections shall be limited to items marked. Reviewing is only for general conformance with the design concept of the project and general compliance with information given in the Contract Documents. Contractor is responsible for confirmation and correlation of all dimensions at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all trades. Review of a specific item does not indicate review of an assembly of which the item is a component, nor shall it indicate that the item will perform it's intended function or as required by the Contract Documents. Distribution of documents by the Contractor shall constitute his approval.

swa
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By: Rick Story Date Feb. 4, 2015

Use Colors in separate Mock Ups for Pavements. Use selected color from pavement mock ups to prepare Seatwall/ wall mock ups that are to receive integral color.
R. Story SWA_ 2/04/16-5

REFERENCE INFORMATION
ACI International (American Concrete Institute)
- ACI 301 Specifications for Structural Concrete for Buildings
- ACI 302.1 Guide for Concrete Floor and Slab Construction
- ACI 303 Guide to Cast-In-Place Architectural Concrete Practice

Integral color adds a design dimension to otherwise ordinary concrete.

- ACI 305 Hot Weather Concreting
- ACI 306 Cold Weather Concreting
- ACI 306.1 Standard Specification for Cold Weather Concreting
- ACI 325.9 Recommendations for Construction of Concrete Pavements & Bases
- ACI 347 Guide to Formwork for Concrete

Portland Cement Association (PCA)
- PA124 Finishing Concrete Slabs with Color and Texture
- SP021 Color and Texture in Architectural Concrete

5. Installation
The keys to successful concrete, whether colored or not, include consistency in materials and craftsmanship and careful planning and detailing of the project. Follow industry standards for high quality concrete work, comply with current editions of the applicable ACI publications unless otherwise specified, and observe the following recommendations.

CONCRETE MIX DESIGN
- Choose color from the Davis color card and specify it by color name and number
- Custom shades are made by varying the amount of color added to the mix. Typical dose rates range from 1 - 5 lb (0.45 - 2 kg) of Davis Colors per 94 lb (43 kg) sack of cement contained in the mix (liquid color dose rates range from 1 - 8 lb (0.45 - 4 kg) per 94 lb (43 kg) of cement)

- Maximum dosage rate of dry color should not exceed 10% of weight of cement content
- Cement content for dosage determination includes Portland cement, fly ash, silica fume, lime and other cementitious materials but not aggregate or sand
- Use the same pigment-to-cement ratio for each mix design
- For consistent color throughout a job, each component of the concrete should be from a single consistent source, uniform in color, and consistently proportioned
- Maintain 5" (127 mm) maximum slump unless otherwise specified
- If greater workability is required, use water reducing or plasticizing admixtures instead of added water
- A low water-cement ratio minimizes shrinkage and cracking, maximizes hardness and promotes a richer, darker concrete color. Adding water causes concrete to pale or wash out
- Specify the largest size of coarse aggregate usable to keep water content low. In locations subject to freeze/thaw conditions, specify entrained air content range of 5 - 7% for improved workability and durability
- Clean mixer thoroughly before batching colored concrete and after pour to prevent color carry-over
- Mix-Ready bags are compatible with vinsol resin-type air entraining agents, water reducing or plasticizing admixtures and reinforcing fibers. They have a track record of compatibility with other commercially available admixtures but have not been tested with all admixtures and mix designs

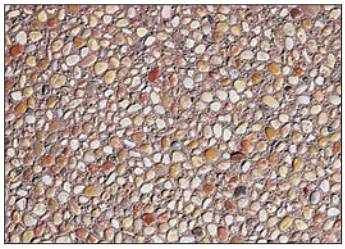
Note - The pure pigments in Davis Colors are not blended with the fillers, additives or admixtures used in some other brands of concrete colors. Preblended admixtures, sometimes called color-conditioning admixtures, add unnecessary expense and can be incompatible with the concrete mix specified for a particular project. Instead of preblended admixtures, Davis Colors recommends using admixtures which have a proven performance record with concrete producers near the project location.

Davis Colors in Mix-Ready disintegrating bags can be added to the concrete mix without opening. Read label on bags. Make sure pigment number and amount added to mixer match batch ticket or mix design.

EXAMPLE OF FINISHES

Broomed - Made by pulling special brooms across stiff, freshly floated or troweled surface. For variety, broom texture can be heavy or light, or in straight or wavy lines.

Exposed Aggregate - Aggregate is exposed by seeding the fresh concrete with aggregate, or spraying a surface set-retarding compound and then scrubbing off cement paste from the surface of the concrete. If retarders are used, exercise caution and follow manufacturer's instructions explicitly.



Mechanically Abraded - Aggregate can also be exposed by removing the surface cement paste by using a high-pressure water wash, sand blasting, grinding, or bushhammering. Exposure level can vary from barely revealing fine aggregate ("brush") or up to 1/3 the diameter of coarse aggregate ("heavy").

Salt Pocked - Rock salt is pressed into the surface after finishing. After 24 hours, the salt is washed away with water and a brush. Remove all traces of salt. Allow surface and pockets to dry before applying curing compound. This finish is not recommended in cold areas where water could collect and freeze in pockets.

Stamped - A powder release agent or plastic sheet is placed on the colored concrete surface after floating. Special stamping tools are pressed into the concrete to create a pattern and then removed. Follow recommendations of stamping tool manufacturer.

Form Liners - Form liners allow endless design possibilities for texture, pattern and relief. They are available in a wide range of standard patterns as well as custom designs.

Davis Colors

BAG MIXING METHOD (STANDARD)

1. Batch mixer truck with at least 3 yd³ (2.3 m³) of concrete.
2. Toss in Mix-Ready bags and mix at charging speed for at least 5 minutes (7 minutes for pea-gravel mixes).

BAG MIXING METHOD (ALTERNATE)

Use the following method if satisfactory results are not obtained:

1. Wet mixer drum with approximately 1/2 - 2/3 of total batch water and some of the aggregate.
2. Toss in Mix-Ready bags and mix at charging speed for 1 - 2 minutes to break bags and disperse pigment.
3. Add cement and remaining aggregate and batch water. Continue mixing at charging speed for 5 minutes (7 minutes for pea-gravel mixes).

Note - In mixes with small aggregate, dry low-slump mixes, or batches with short mixing duration, bags may not completely disintegrate. With sandblasted or exposed aggregate finishes, use smaller bag sizes, 15 lb (7 kg) maximum, to reduce possibility that small pieces of bag could be exposed.

MOCK-UP

- Provide mock-up to establish that proposed materials and construction techniques provide acceptable visual effect. Construct at least 1 month before start of concrete work to allow concrete to cure before final inspection. Materials used for mock-up should be those proposed for actual construction; retain samples of cement and aggregates used. Use the same placement and finishing techniques that will be used in project
- Provide mock-up sections of building and structures which typify the most difficult areas to build. Include full allocation of reinforcing steel to be used in project. Erect forming to simulate all formed conditions in project. Include repaired areas to demonstrate the color and texture of patching materials to be used

Note - While mock-ups are not generally required on paving projects, they should be considered on large or complex projects and to demonstrate special finishes.

PREPARATION - FLATWORK

- Subgrade must be uniformly graded, compacted and dampened
- Do not place concrete if subgrade has standing water, hard or soft spots, ice, frost or muddy areas
- Add a 2" - 3" (51 - 76 mm) layer of sand, gravel or crushed stone and compact with vibrating equipment
- Grading should be sloped so that water drains away from the slab
- If a vapor barrier is used, overlap sheets and tape holes in barrier. Then place a 3" (76 mm) layer of granular self-draining compactible fill over barrier to reduce shrinkage cracking
- Fill should be uniformly compacted and free of self-draining water at time of placement.
- Forms should be positioned to achieve uniform slab thickness

Note - ACI standards for reinforcement and joint placement should be followed to control cracking.

PREPARATION - FORMED CONCRETE

- Comply with ACI 347
- Design forms to prevent pillowing and deflection of forms
- Avoid porous form materials; steel and high density overlaid plywood forms and plastic form liners are recommended. Lumber forms can affect color of concrete surface through variation in absorption of different portions of the board unless sealed with a nonporous coating
- Specify tight joints; surface blemishes occur when water containing cement is allowed to leak from forms
- Seal joints with tape or foam rubber to avoid leakage. Multiple horizontal pours should have tight-fitting forms and should be sealed against previous pours. Rustication strips are recommended at construction joints or between pours
- Use a nonstaining, chemically active release agent to ensure forms can be removed without damaging colored concrete. In general, a very thin application of release agent will result in a higher quality concrete surface and reduce the size and number of bugholes

SCHEDULING

- Schedule deliveries for consistent mixing times for each load so trucks arrive just before concrete is required
- Schedule placement and finishing of paving and exterior slabs to minimize exposure to hot sun before curing materials can be applied
- Postpone concreting until windy conditions pass. Do not concrete if rain, snow or frost is in forecast

Pattern stamping and colored release agents are applied to integrally colored concrete for unique effects.

PLACING CONCRETE

- Place in accordance with ACI 301
- Protect finished surfaces, landscaping and adjacent structures from splatters with plastic sheets
- Keep concrete temperature consistent. Temperatures between 65 - 85 degrees F (18 - 29 degrees C) will normally produce more uniform color
- Prevent segregation of mix ingredients
- Flatwork - Place concrete near its final location and move it with shovels; do not move with vibrators
- Formed concrete - Deposit concrete in lifts 12" - 18" (305 - 457 mm) thick. Layers should be fairly level so that vibrator does not need to move the concrete laterally. Insert vibrator at about 18" (457 mm) on center depending on concrete mix and vibrator used. Vibrator should penetrate at least 6" (152 mm) into preceding layer. Do not overvibrate

FORM REMOVAL

Remove forms in accordance with ACI 347. Different color hues can be expected between surfaces where adjacent formwork is stripped at different ages.

FINISHING

Textured surfaces produce more uniform looking concrete than smooth troweled or formed surfaces because the roughness of the surface scatters light reflecting off the concrete.

Textured surfaces are also more slip resistant when wet than smooth troweled floors and paving.

Flatwork

Concrete paving and slabs can be finished with a variety of attractive finishes, including broomed, swirled, troweled, rock salt pocked, exposed aggregate, sandblasted, acid-washed or pattern stamped.

- Wood bull-floats and darbies cause less surface discoloration than magnesium tools
- Wait for bleed water to disappear before starting floating and troweling. Over-troweling or starting troweling late can lead to trowel burns and dark spots
- Do not sprinkle the surface with cement or with Davis Colors or other pigments meant for integral coloring
- Do not fog the colored concrete with water or add water to tools or brooms; adding water causes the surface to pale or discolor

Note - For more information, see PCA Publication PA124.

Formed Surfaces

Sandblasting, high pressure water jet, bushhammering and surface retarders can be used to texture the surface and expose the fine or coarse aggregate. Sandblasted finishes can be brush, light, medium or heavy depending on texture desired. For more information, see PCA Publication SP021.

PATCHING COLORED CONCRETE

- Fill holes and defects in formed concrete surface within a few days after form removal. This allows patches and surrounding concrete to age together and reduces the possibility of color variations
- Use the same patching materials and techniques that were approved on mock-up. Make patches with materials from the same sources as the concrete. Because the stiff mortar used for patching typically has a lower water/cement ratio than the rest of the concrete, it will normally dry darker. To overcome this, white cement should be added to the mortar patch mix
- Determine mix proportions by trial and error; a good starting mix is 3 parts sand, 1 part gray cement, and 1 part white cement. Add enough color to create the same color/cement mix rate used on the job, but the white cement used to lighten the patch should not be included when figuring the color/cement mix rate for patching. If necessary, add aggregate to mortar mix so patches will have the same texture and appearance as adjacent concrete

CURING

- Uneven curing = uneven drying = uneven color. Use only curing compounds specifically recommended for colored concrete. Davis Colors W-1000 Clear Cure & Seal™ allows the natural appearance of concrete to show through. Davis Colors Color Seal covers concrete with a thin colored coating, creating a more uniform appearance. Curing with water, membranes or nonapproved compounds can discolor concrete
- Maintain concrete temperature between 65 - 85 degrees F (18 - 29 degrees C) in most applications during the crucial first days after placing. Dark or black-colored concrete will absorb additional heat during sunny conditions and requires extra protection during curing
- Flatwork - Apply curing compound as soon as the surface will not be damaged by walking on the concrete. If saw-cut control joints are required, make cuts before application of curing materials; thoroughly rinse cutting residue off slab to prevent stains
- Formed surfaces - Apply curing compound if forms are removed before concrete is adequately cured

WATER REPELLENTS

The use of a high quality sealer or water repellent treatment can help preserve the beauty of colored concrete by reducing efflorescence and staining. Follow manufacturer's instructions for use on colored concrete.

JOINT SEALANTS

Joint sealants used at construction and control joints in concrete are available in colors to match concrete colors.

PRECAUTIONS

- Color of cured concrete can vary from color cards or samples due to differences in mix water content; forming, finishing and curing methods; weather conditions; and variations in base color of cement or other concrete materials. As with all natural materials, minor variations in appearance are an accepted feature of concrete, both colored and uncolored
- Observe industry practices for quality concrete. Check a test batch to determine if it meets specifications before finalizing mix design. Sample concrete throughout pour to ensure it meets specifications

Davis Colors can transform concrete into a wide range of shades.

- Efflorescence, a salt deposit that forms a white stain on concrete, can be particularly objectionable on colored concrete. Reduce efflorescence by using a low water-cement ratio, using curing compound, and designing concrete mix for less permeability. Seal concrete against water penetration and leaks. Keep de-icing salts away from paving which is not fully cured. Remove efflorescence as soon as possible. If removal is delayed, deposits convert to calcium carbonate; it can be removed with a dilute acid wash but the removal process will affect the surface appearance
- Davis Colors are not hazardous and are nontoxic if accidentally ingested. Protect against breathing dust and contact with eyes, skin or clothing. Wash thoroughly after use. See label on package and Material Safety Data Sheet (MSDS)
- Store containers in a dry, cool place away from sources of heat or open flame

6. Availability & Cost

AVAILABILITY

Davis Colors can be mixed into concrete and delivered directly to the jobsite by concrete producers. Davis Colors are also available from building material dealers for mixing at the jobsite. Contact Davis Colors or visit www.daviscolors.com for the nearest suppliers.

COST
Compared to surface applied coatings and dust-on colors, Davis Colors are economical to color concrete. Integral colors are part of the concrete and eliminate extra costs such as surface preparation, scaffolding and labor associated with coatings. Because Davis Colors are permanent, the life-cycle costs of maintaining and reapplying surface applied materials are reduced. Integral color adds between 5 - 50% to the material cost of concrete. Contact Davis Colors, the local Davis Colors dealer or visit www.daviscolors.com/tech/usage for additional pricing information.

7. Warranty
Davis Colors guarantees its integral color products comply with ASTM C979 standards, with the exception of Davis Colors 8084 and 807 due to their effect on air entraining admixtures. If any Davis Colors products are found to be defective, buyer's sole remedy shall be refund of color purchase price from point of purchase. Davis Colors does not guarantee the concrete materials, jobsite, installation or resulting colored concrete.

8. Maintenance
- Cleanup - Cured concrete can be cleaned using power washing or commercially available cleaning solutions; contact the cleaner manufacturer for instructions. Strong acids can cause discoloration. Test the cleaning method in an inconspicuous location before application and rinse thoroughly with clean water
- Paving and slabs - When desired, Davis Colors' curing compounds can be reapplied periodically to reseal the concrete surface to reduce staining and wear

9. Technical Services
A complete concrete color laboratory is available to provide technical assistance and match custom colors. Davis Colors sales representatives are available nationwide.

10. Filing System
- Reed First Source
- ARCAT®
- Concrete Sourcebook
- Landscape Architecture's OneSource Directory
- Sweet's Catalog Files
- SweetSource
- Additional product information is available from the manufacturer, including:
  Video Presentation
  Material Safety Data Sheets
  Samples and Color Cards
  Guide Specifications
  CD-ROM

W. R. MEADOWS®

SEALTIGHT®

A Family Company Since 1926

QUALITY...SERVICE...INTEGRITY

CONCRETE EXPANSION JOINTS

Minimize Concrete Cracking and Damage with Expansion Joints from W. R. MEADOWS

Whatever your needs...
we have the solution.

GUARDIAN OF THE PAVEMENT®

#BR-18

CONCRETE EXPANSION JOINTS

W. R. MEADOWS – The Innovator In Concrete Expansion Joint Technology

Concrete expands and contracts with temperature and moisture changes. When the temperature rises or the moisture content of the concrete increases, expansion takes place. When temperatures drop, the concrete will contract. The provision to accommodate movement at predetermined locations with proper joint applications prevents the development of stresses that could crack the concrete.

Ignoring expansion joints in pavement construction can lead to various problems.

Joint type and spacing will vary with each project according to the type of structure, climatic conditions, and anticipated stresses in the concrete. The coefficient of thermal expansion in concrete is 0.0000055 per linear inch of concrete per degree Fahrenheit of temperature change, yielding approximately .66 inch of movement per 100 feet with a 100° F (38° C) temperature range. To estimate expansion, multiply length in inches x number of degrees of anticipated temperature differential x 0.0000055. Use the resulting anticipated movement to determine correct thickness of the control joint and proper spacing for placement of the joint. Thinner joints (1/4", 3/8", or 1/2") (6.35 mm, 9.53 mm, or 12.7 mm) spaced at frequent intervals offer greater control than thicker joints spaced at greater intervals. The basic concept is to provide ample room for the concrete to expand and contract without creating damaging stresses and resultant cracking.

W. R. MEADOWS is the innovator in expansion joint technology. Our ASPHALT EXPANSION JOINT was developed in 1926 and to this day is still used in concrete surfaces throughout the world to help minimize damage as concrete expands and contracts. A wide array of product types are available, including patented (U.S. patent numbers 7,8158,772; 8,057,638; 8,038,845; 8,241,463; 6,068,804) fiber-based products, plastic compositions, and epoxy-type fillers. Full details, including sizes, installation procedures, and features/benefits, are available on the individual product data sheets available at www.wrmeadows.com. Here is the expansion joint technology that **W. R. MEADOWS** offers:

FIBRE EXPANSION JOINT

is composed of cellular fibers securely bonded together and uniformly saturated with asphalt to assure longevity. FIBRE EXPANSION JOINT is versatile, resilient, flexible, and non-extruding.

REVIEWED (see GENERAL CONDITIONS)

- ■ NO EXCEPTIONS TAKEN
- ☐ MAKE CORRECTIONS NOTED
- ☐ REVISE & RESUBMIT
- ☐ REJECTED

If noted NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED, fabrication may be undertaken. Review does not authorize changes to contract sum unless saved in duly executed Change Order. If noted REVISE & RESUBMIT or REJECTED, fabrication may not be undertaken. Resubmit corrected copies for re-review. Corrections shall be limited to items marked. Reviewing is only for general conformance with the design concept of the project and general compliance with information given in the Contract Documents. Contractor is responsible for confirmation and correlation of all dimensions at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all trades. Review of a specific item does not indicate review of an assembly of which the item is a component, nor shall it indicate that the item will perform it's intended function or as required by the Contract Documents. Distribution of documents by the Contractor shall constitute his approval.

swa

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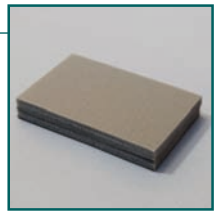
By: Rick Story Date: FEB. 4, 2015

- ASTM D 994
- California Department of Transportation (Caltrans)
- FAA Specification Item P-610-2.7
- Federal Specification HH-F-341 F

CERAMAR®

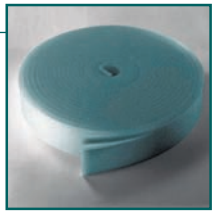


flexible foam expansion joint filler is composed of a unique blend of isomeric polymers in a very small, closed-cell structure. Gray in color, CERAMAR is a lightweight, highly flexible, and resilient material offering recovery qualities of over 99%. This mini closed-cell structure is virtually non-absorbent. It can be wrapped or formed around curved or circular surfaces.

SPECIFICATIONS:

- ASTM D 5249, Type 2
- ASTM D 1752, Sections 5.1 - 5.4, with compression requirement modified to 10 psi (7.03 g/mm^2) minimum and 25 psi (17.58 g/mm^2) maximum.
- ASTM D 7174-05

DECK-O-FOAM®

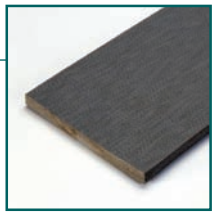


expansion joint filler is a flexible, lightweight, non-staining, polyethylene, closed-cell expansion joint filler. It is a chemical-resistant, ultraviolet stable, non-absorbent, low density, economical, compressible foam that offers an extended service life in both interior and exterior applications. Product is ideal for decorative concrete installations.

SPECIFICATIONS:

- ASTM D 4819, Type II

SPONGE RUBBER EXPANSION JOINT



is produced to a uniform thickness and density from gray-colored, top-quality, blown sponge rubber. It is easily compressed and has a recovery of 95% or more of the original thickness and a density of not less than 30 pounds per cubic foot (480.56 kg per cubic meter).

SPECIFICATIONS:

- AASHTO M 153, Type 1
- ASTM D 1752, Type 1
- Corps of Engineers CRD-C 509, Type I
- FAA Specification Item P-610-2.7
- Federal Specification HH-F-341 F, Type II, Class A

CORK EXPANSION JOINT

is produced from clean, selected, granulated cork bonded with a phenolic resin. It is highly resilient, will compress without extrusion, and recovers to 95% of its original thickness after 50% compression.

SPECIFICATIONS:

- AASHTO M 153, Type II
- ASTM D 1752, Type II
- Corps of Engineers CRD-C 509, Type II
- FAA Specification Item P-610-2.7
- Federal Specification HH-F-341 F, Type II, Class B

SELF-EXPANDING CORK EXPANSION JOINT

is formed and compressed under heat and pressure to permit expansion up to 140% of original thickness after installation, which permits the filler to compensate for concrete shrinkage. Normal humidity conditions after installation activate the self-expanding properties of the cork. Product may be cut on jobsite to exact size required. Product is ideal for water-retaining structures.

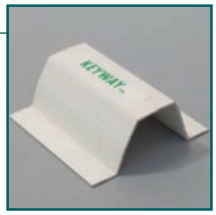
SPECIFICATIONS:

- AASHTO M 153, Type III
- ASTM D 1752, Type III
- Corps of Engineers CRD-C 509, Type III
- FAA Specification Item P-610-2.7
- Federal Specification HH-F-341 F, Type II, Class C

SNAP-CAP®

provides a time and cost-saving method for forming straight, uniform and debris-free joints of the proper configuration, ready to seal. The top of SNAP-CAP pulls free and can be discarded. The exposed concrete surfaces assure balanced adherence to the sides. It is ideal for both horizontal and vertical concrete projects.

KEYWAY™



is lightweight, flexible and an easy way to mold a keyed tongue and groove construction joint. KEYWAY resists impact and will not whip or warp. It strips quickly and can be reused or left in place.

DECK-O-JOINT®

is a decorative expansion joint for use wherever concrete is placed. It is economical, long lasting and trouble-free. DECK-O-JOINT resists acids, alkali, chlorine, etc. A light hose down keeps it bright and clean.

SPEED-E-JOINT®

offers an ideal solution to controlling cracks in concrete. It is a rigid preformed contraction joint that produces a straight-line crack on the surface of concrete slabs and locks into the aggregate just below the surface. SPEED-E-JOINT is strong, economical and eliminates waste in providing straight lines. It is quick and easy to install. The top section pulls free once the joint has been placed correctly in the wet concrete.

CONCRETE EXPANSION JOINTS

Ideal applications:

- Sidewalks
- Driveways
- Streets
- Single- and Multi-Level Floor Slabs
- Airport Runways
- Flatwork
- Commercial and Industrial Applications
- Bridge Structures

If you need more information on our complete line of expansion joints, here are four quick and easy access points:

- Visit our comprehensive website: www.wrmeadows.com
- Contact W. R. MEADOWS, INC. via email: info@wrmeadows.com
- Call toll free: 1-800-342-5976
- Fax: 1-847-683-4544

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FORT WORTH, TX / BENICIA, CA / POMONA, CA
GOODYEAR, AZ / MILTON, ON / ST. ALBERT, AB

PRINTED IN USA

06/14-1M

PRODUCT DATA

W. R. MEADOWS SEALTIGHT

MasterFormat: 03 15 00

NO. 324

JUNE 2013
(Supersedes February 2007)

PLASTIC JOINT MATERIALS

SPEED-E-JOINT®, DECK-O-JOINT®, SNAP-CAP®, KEYWAY™

SPEED-E-JOINT
Preformed Contraction Joint

SPEED-E-JOINT consists of two solid pieces that have been pre-assembled for easy handling and installation.

REVIEWED (see GENERAL CONDITIONS)

- ■ NO EXCEPTIONS TAKEN
- ☐ MAKE CORRECTIONS NOTED
- ☐ REVISE & RESUBMIT
- ☐ REJECTED

If noted NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED, fabrication may be undertaken. Review does not authorize changes to contract sum unless saved in duly executed Change Order. If noted REVISE & RESUBMIT or REJECTED, fabrication may not be undertaken. Resubmit corrected copies for re-review. Corrections shall be limited to items marked. Reviewing is only for general conformance with the design concept of the project and general compliance with information given in the Contract Documents. Contractor is responsible for confirmation and correlation of all dimensions at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all trades. Review of a specific item does not indicate review of an assembly of which the item is a component, nor shall it indicate that the item will perform it's intended function or as required by the Contract Documents. Distribution of documents by the Contractor shall constitute his approval.

swa

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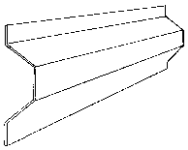
By: Rick Story Date: Feb. 4, 2015

KEYWAY
PVC Tongue and Groove Joint Form

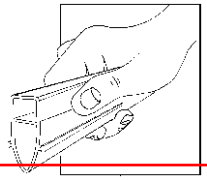
KEYWAY is lightweight, flexible, and an easy way to mold a keyed tongue and groove construction joint. KEYWAY resists impact and will not whip or warp. It strips quickly and can be reused or left in place.



DECK-O-JOINT
PVC Expansion Joint

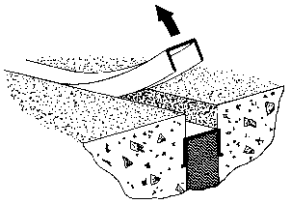
DECK-O-JOINT is a decorative expansion joint for use wherever concrete is placed. It is economical, long-lasting, and trouble-free. DECK-O-JOINT resists acids, alkali, chlorine, etc. A light hose down keeps it bright and clean.

DECK-O-JOINT will not whip or warp during application. It locks into concrete and adjusts for any slab movement. DECK-O-JOINT's exclusive channel design prevents excessive seepage and water damage. Colors: Stone Gray, Desert Tan, Dura-White.



SNAP-CAP
Expansion Joint Cap

SNAP-CAP provides a time- and cost-saving method for forming straight, uniform, and debris-free joints of the proper configuration, ready to seal. The top of SNAP-CAP pulls free and can be discarded. The exposed concrete surfaces assure balanced adherence to the sides. It is ideal for both horizontal and vertical concrete projects. SNAP-CAP is available in four widths as shown in the table on page 2.



CONTINUED ON REVERSE SIDE…

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1-800-342-5976
www.wrmeadows.com

APPLICATION

SPEED-E-JOINT

Preformed Contraction Joint

To install SPEED-E-JOINT, press a straight edge cutting tool into the wet concrete to part the aggregate in a straight line. Place SPEED-E-JOINT into the separation until the top segment lays on the surface of the wet concrete. Remove the top. Float concrete to fill all voids adjacent to SPEED-E-JOINT and finish in the normal manner.

DECK-O-JOINT

PVC Expansion Joint

Press DECK-O-JOINT into the wet concrete until top is level with the concrete. Float concrete to fill all voids adjacent to DECK-O-JOINT. Finish in the normal manner. Remove protective tape.

KEYWAY

PVC Tongue and Groove Joint Form

Nail or staple KEYWAY to the form or header prior to pouring concrete. Pour the concrete. After the concrete sets up, remove KEYWAY to leave the ideal tongue and groove type joint. If desired, KEYWAY can be left in place.

SNAP-CAP

Expansion Joint Cap

To install, slide SNAP-CAP over the top of the expansion joint. Place the concrete and screed to finish grade as usual. When concrete is cured, insert a screwdriver through the top of SNAP-CAP, pull free and discard. The joint is ready to seal.

Plastic Joint Materials Size Information

TYPE	WIDTH	DEPTH	LENGTH
SPEED-E-JOINT	N/A	1" (25.4 mm) 1 ½" (38.1 mm) 2" (50.8 mm)	10' (3.05 m)
DECK-O-JOINT	5/8" (15.88 mm)	1 5/8" (41.3 mm)	10' (3.05 m)
KEYWAY	2.5" (63.5 mm) 3.5" (88.9 mm)	3 ½" (88.9 mm)	10' (3.05 m)
SNAP-CAP	3/8" (9.53 mm) 1/2" (12.7 mm) 3/4" (19.05 mm) 1" (25.4 mm)	1/2" (12.7 mm)	10' (3.05 m)

LEED INFORMATION

May help contribute to LEED credits:

- MR Credit 2: Construction Waste Management
- MR Credit 4: Recycled Content
- MR Credit 5: Regional Materials

For most recent data sheet, further LEED information, and MSDS, visit www.wrmeadows.com.

LIMITED WARRANTY

W. R. MEADOWS, INC. warrants at the time and place we make shipment, our material will be of good quality and will conform with our published specifications in force on the date of acceptance of the order. Read complete warranty. Copy furnished upon request.

Disclaimer

The information contained herein is included for illustrative purposes only, and to the best of our knowledge, is accurate and reliable. W. R. MEADOWS, INC. cannot however under any circumstances make any guarantee of results or assume any obligation or liability in connection with the use of this information. As W. R. MEADOWS, INC. has no control over the use to which others may put its product, it is recommended that the products be tested to determine if suitable for specific application and/or our information is valid in a particular circumstance. Responsibility remains with the architect or engineer, contractor and owner for the design, application and proper installation of each product. Specifier and user shall determine the suitability of products for specific application and assume all responsibilities in connection therewith.

BASF
The Chemical Company

PRODUCT DATA

7 07 92 00 **Joint Sealants**

SONOLASTIC® NP 1™

One-component, elastomeric, gun-grade polyurethane sealant

Description

NP 1™ is a one-component, high-performance, nonpriming, gun-grade, elastomeric polyurethane sealant. It requires no mixing and typically requires no priming to bond to many materials, including concrete and masonry.

Yield

See page 3 for charts.

Packaging

300 ml (10.1 fl oz) cartridges, 30 cartridges per carton

20 fl oz (590 ml) ProPaks, 20 per carton

2 gallons (7.6 L) pails; available on special order only

For color availability in bulk packaging, call Customer Service.

Color

White, off-white, limestone, stone, tan, aluminum gray, hunter green, medium bronze, special bronze, redwood tan, tile red and black.

Shelf Life

Cartridges and ProPaks:
1 year when properly stored.

Pails:
4 months when properly stored.

Storage

Store in original, unopened containers away from heat and direct sunshine. Storing at elevated temperatures will reduce the shelf life.

Features	Benefits
• Ready to use	Requires no mixing; reduces labor costs
• Joint movement capability ±35%	Provides excellent flexibility for keeping moving joints tight
• Easy to gun and tool	Speeds application and makes neater joints
• Available in cartridges, 20 ounce ProPaks, and in bulk	Reduces jobsite waste, lowers disposal costs
• Eleven standard colors	Matches common substrates
• No primer required for most construction materials	Lowers installation costs
• Weather resistant	Produces long-lasting weather-tight seals
• Wide temperature-application range	Suitable for all climates
• Compatible with nonrigid paints	May be painted
• Superior holding power	Long-lasting roof tile instalation
• UL listed	Passes 4 hour, 4 inch, fire and hose stream test when used with Ultra Block® or mineral wool
• Suitable for water immersion	Documented performance in wet areas
• Low VOC content	Meets VOC requirements in all 50 states

Where to Use

APPLICATION

- Expansion joints
- Curtain wall construction
- Panel walls
- Precast units
- Aluminum and wood window frames
- Roofing
- Fascia
- Parapets
- Structural components
- Vinyl siding
- Wastewater treatment plants
- Dams
- Spillways and storm drains
- Wetwells and manholes

LOCATION

- Interior and exterior
- Above grade
- Immersed in water

SUBSTRATE

- Concrete
- Masonry
- Aluminum
- Wood
- Clay & concrete roof tiles

Sonneborn®

Refer to Selection on Color Chart.
SWA 2/4/15

Technical Data

Composition

Sonolastic® NP 1™ is a one-component moisture-curing polyurethane.

Compliances

- ASTM C 920, Type S, Grade NS, Class 35, Use NT, M, A, G, and I
- Federal Specification TT-S- 00230C, Type II, Class A
- Corps of Engineers CRD-C- 541, Type II, Class A
- Canadian Specification CAN/CGSB-19.13-M87, Classification MCG-2-25-A-N, No. 81026
- USDA compliant for use in meat and poultry areas
- Underwriters Laboratories Inc.® classified (fire resistance only)
- Canadian approval for use in establishments that handle food
- SWR Institute validated
- ISO 11600-F-25LM

SEALANT•WATERPROOFING & RESTORATION INSTITUTE

Issued to: BASF Building Systems
Product: Sonolastic NP-1

C719: Pass ✓ Ext:+35% Comp:-35%

Substrate: Aluminum, Mortar, Granite
[mortar and granite substrates primed with primer No. 733]

C661: Rating 25

Validation Date: 6/20/06 - 6/19/11

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SEALANT VALIDATION
www.swrionline.org

Typical Properties

PROPERTY	VALUE
Service temperature range, ° F (° C)	-40 to 180 (-40 to 82)
Shrinkage	None

Test Data

PROPERTY	RESULTS	TEST METHODS
Movement capability, %	±35	ASTM C 719
Tensile strength, psi (MPa)	350 (2.4)	ASTM D 412
Tear strength, pli	50	ASTM D 1004
Ultimate elongation at break, %	800	ASTM D 412
Rheological, (sag in vertical displacement) at 120° F (49° C)	No sag	ASTM C 639
Extrudability, 3 seconds	Passes	ASTM C 603
Hardness, Shore A		ASTM C 661
At standard conditions	25 – 30	
After heat aging (max Shore A: 50)	25	
Weight loss, after heat aging, %	3	ASTM C 792
Cracking and chalking, after heat aging	None	ASTM C 792
Tack-free time, hrs, (maximum 72 hrs)	Passes	ASTM C 679
Stain and color change	Passes (no visible stain)	ASTM C 510
Bond durability,* on glass, aluminum, and concrete	Passes ±35% movement	ASTM C 719
Adhesion* in peel, pli (min. 5 pli)	30	ASTM C 794
Adhesion* in peel after UV radiation through glass (min. 5 pli)	Passes	ASTM C 794
Artificial weathering, Xenon arc, 250 hours	Passes	ASTM C 793
Artificial weathering, Xenon arc, 3,000 hours	No surface cracking	ASTM G 26
Water immersion, 122° F (50° C)	Passes 10 weeks with movement cycling	ASTM C 1247

*Primed for water immersion dictated by ASTM C 920. Concrete and aluminum primed with 733; glass primed with 766.

Test results are typical values obtained under laboratory conditions. Reasonable variations can be expected.

Yield

LINEAR FEET PER GALLON*

JOINT DEPTH (INCHES)	JOINT WIDTH (INCHES) 1/4	3/8	1/2	5/8	3/4	7/8	1
1/4		308	205	154	122	–	– –
3/8 51		–	–	–	82	68	58
1/2 38		–	–	–	–	51	44

*One gallon equals approximately 12 cartridges or 6 ProPaks

METERS PER LITER

JOINT DEPTH (MM)	JOINT WIDTH (MM) 6	10	13	16	19	22	25
6	24.8	16.5	12.4	9.8	–	–	–
10	–	–	–	6.6	5.5	4.7	4.1
13	–	–	–	–	4.1	3.5	3.0

How to Apply

Joint Preparation

1. The number of joints and the joint width should be designed for a maximum of ±25% movement.

2. The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 1/2" (13 mm) and the minimum is 1/4" (6 mm). Refer to Table 1.

TABLE 1

Joint Width and Sealant Depth

JOINT WIDTH, AT MIDPOINT, IN (MM)	SEALANT DEPTH IN (MM)
1/4 – 1/2 (6 – 13)	1/4 (6)
1/2 – 3/4 (13 – 19)	1/4 – 3/8 (6 – 10)
3/4 – 1 (19 – 25)	3/8 – 1/2 (10 – 13)
1 – 1-1/2 (25 – 38)	1/2 (13)

3. In deep joints, the sealant depth must be controlled by Closed-Cell Backer-Rod or Soft Backer-Rod. Where the joint depth does not permit the use of backer-rod, a bondbreaker (polyethylene strip) must be used to prevent three-point bonding.

4. To maintain the recommended sealant depth, install backer-rod by compressing and rolling it into the joint channel without stretching it lengthwise. Closed-Cell Backer-Rod should be about 1/8" (3 mm) larger in diameter than the width of the joint to allow for compression. Soft Backer-Rod should be approximately 25% larger in diameter than the joint width. The sealant does not adhere to it, and no separate bondbreaker is required. Do not prime or puncture the backer-rod.

Surface Preparation

Surfaces must be structurally sound, fully cured, dry, clean, free of dirt, moisture, loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofing or curing and parting compounds, and membrane materials.

CONCRETE, STONE, AND OTHER MASONRY

Clean by grinding, sandblasting, or wire brushing to expose a sound surface free of contamination and laitance.

WOOD

New and weathered wood must be clean and sound. Scrape away loose paint to bare wood. Any coating that cannot be removed must be tested to verify adhesion of sealant or to to determine an appropriate primer.

METAL

Remove scale, rust, and coatings from metal to expose a bright white surface. Remove protective coatings as well as any chemical residue or film. Aluminum window frames are frequently coated with a clear lacquer that must be removed before the application of NP 1™. Any coating that cannot be removed must be tested to verify adhesion of sealant or determine an appropriate primer. Remove any other protective coatings or finishes that could interfere with adhesion.

Priming

1. NP 1™ is generally considered a nonpriming sealant, but special circumstances or substrates may require a primer. It is the user's responsibility to check the adhesion of the cured sealant on typical test joints at the project site before and during application. Refer to product data sheet on Primer 733 or 766, and consult Technical Services for additional information.

2. For immersion applications, Primer 733 must be used.

3. Apply primer full strength with a brush or clean cloth. A light, uniform coating is sufficient for most surfaces. Porous surfaces require more primer; however, do not overapply.

4. Allow primer to dry before applying NP 1™. Depending on temperature and humidity, primer will be tack free in 15 – 120 minutes. Priming and sealing must be done on the same work day.

Application

1. NP 1™ comes ready to use. Apply by professional caulking gun. Do not open cartridges, sausages, or pails until preparatory work has been completed.

2. Fill joints from the deepest point to the surface by holding a properly sized nozzle against the back of the joint.

3. Dry tooling is recommended. DO NOT use soapy water when tooling. Tooling results in the correct bead shape, a neat joint, and maximum adhesion.

4. For roof tile applications apply a bead of Sonolastic® NP 1™ sufficient to make a bond between two tiles on the upper surface of the down slope tile. Install the upslope tile & press into the sealant bead to ensure good contact between the sealant and both tiles.

Clean Up

1. Immediately after use, clean equipment with Reducer 990 or xylene. Use proper precautions when handling solvents.

2. Remove cured sealant by cutting with a sharp-edged tool.

3. Remove thin films by abrading.

Curing Time

The cure of NP 1™ varies with temperature and humidity. The following times assume 75° F (24° C), 50% relative humidity, and a joint 1/2" width by 1/4" depth (13 by 6 mm).

Skins: overnight or within 24 hours

Functional: within 3 days

Full cure: approximately 1 week

Immersion service: 21 days

For Best Performance

- Do not allow uncured NP 1™ to come into contact with alcohol-based materials or solvents.
- Do not apply polyurethane sealants in the vicinity of uncured silicone sealants or uncured Sonolastic® 150 or 150 Tint Base.
- NP 1™ should not come in contact with oil-based caulking, uncured silicone sealants, polysulfides, or fillers impregnated with oil, asphalt, or tar.
- Protect unopened containers from heat and direct sunshine.
- In cool or cold weather, store container at room temperature for at least 24 hours before using.
- When NP 1™ is to be used in areas subject to continuous water immersion, cure for 21 days at 70˚ F (23˚ C) and 50% relative humidity. Allow longer cure times at lower temperatures and humidities. Always used Primer 733.
- Do not use in swimming pool or other submerged conditions where the sealant will be exposed to strong oxidizers. Avoid submerged conditions where water temperatures will exceed 120˚ F (50˚ C).
- Do not apply over freshly treated wood; treated wood must have weathered for at least 6 months.
- Substrates such as copper, stainless, and galvanized typically require the use of a primer; Primer 733 or 766 is acceptable. For Kynar 500 based coatings use Primer 733 only. An adhesion test is recommended for any other questionable substrate.
- UV exposure may cause white NP 1™ to discolor. This does not affect sealant performance; where maintaining a true white appearance is critical, use Ultra or Sonolastic® 150 sealants.
- NP 1™ can be applied below freezing temperatures only if substrates are completely dry, free of moisture, and clean. Contact Technical Service for more information.
- Lower temperatures and humidities will extend curing times.
- NP 1™ can be painted over provided it is fully cured and clean. When painting over any elastomeric sealant, use a paint that is also elastomeric. (If movement occurs, the paint will also move.)
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current versions.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety

NP 1™

Warning

NP 1™ contains Stoddard solvent and crystalline quartz silica.

Risks

May cause skin, eye or respiratory irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Ingestion may cause irritation. Reports associate repeated or prolonged occupational overexposure to solvents with permanent brain, nervous system, liver and kidney damage. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAYBE HARMFUL OR FATAL.

Precautions

Keep container closed. Use only with adequate ventilation. Prevent contact with skin, eyes and clothing. Wash thoroughly after handling. Avoid breathing vapors. DO NOT take internally. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. SEEK IMMEDIATE MEDICAL ATTENTION. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

Proposition 65

This product contains materials listed by the State of California as known to cause cancer, birth defects and other reproductive harm.

VOC Content

NP 1™ contains 43 g/L or 0.36 lbs/gal, less water and exempt solvents.

For medical emergencies only, call ChemTrec (1-800-424-9300).

BASF Construction Chemicals, LLC – Building Systems

889 Valley Park Drive
Shakopee, MN, 55379

www.BuildingSystems.BASF.com

Customer Service 800-433-9517
Technical Service 800-243-6739

Form No. 1017906 12/07
Printed on recycled paper including 10% post-consumer fiber.

Sonolastic Sealants

Standard Colors

Distributed by: BEST
Ph: 800-474-7570, (
Email: sales@bestma
www.bestmaterials.c

REVIEWED (see GENERAL CONDITIONS)

- ☐ NO EXCEPTIONS TAKEN
- ■ MAKE CORRECTIONS NOTED
- ☐ REVISE & RESUBMIT
- ☐ REJECTED

If noted NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED, fabrication may be undertaken. Review does not authorize changes to contract sum unless saved in duly executed Change Order. If noted REVISE & RESUBMIT or REJECTED, fabrication may not be undertaken. Resubmit corrected copies for re-review. Corrections shall be limited to items marked. Reviewing is only for general conformance with the design concept of the project and general compliance with information given in the Contract Documents. Contractor is responsible for confirmation and correlation of all dimensions at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all trades. Review of a specific item does not indicate review of an assembly of which the item is a component, nor shall it indicate that the item will perform it's intended function or as required by the Contract Documents. Distribution of documents by the Contractor shall constitute his approval.

swa

2200 BRIDGEWAY BOULEVARD SAUSALITO, CA 94965
UNITED STATES OF AMERICA TEL. +1.415.332.5100

By: Rick Story Date: Feb. 4, 2015

Natural Stone
White
Cameo
Precast Gray
Off White
Limesto
Gray
Saltbox
Black
Ivory
Hunter Green
Special Bronze
Medium Bronze
Riverbend

Use both of these colors in equal amounts for Mock Up EJ's I 1/2 the joint has Precast Gray the remainder of the joint has Gray.
SWA 2/4/15

Sonolastic® Sealant Systems PRODUCT NAME	Translucent	White	Cameo	Buff	Saltbox	Off White	Limestone	Riverbend	Ivory	Tan	Natural Stone	Gray	Aluminum Gray	Precast Gray	Stone	Redwood Tan	Black	Hunter Green	Medium Bronze	Special Bronze
TX 1		•		•		•			•		•		•		•	•	•		•	•
NP 1™		•				•	•			•			•		•	•	•		•	•
NP 2™ *		•	•		•	•	•	•		•			•	•	•	•	•	•	•	•
Polysulfide Sealant		•				•	•			•			•		•					
SL 1™							•					•								
SL 2™ *		•	•		•	•	•	•		•			•	•	•	•	•	•	•	•
OmniPlus™	•	•											•				•			•
OmniSeal™ 50	•	•											•				•			•
Ultra		•					•			•			•	•						
Sonolac® **		•				Also available in special colors						•			•					
150 with VLM Technology		•	•		•	•	•	•		•			•		•	•	•		•	•

* Available in over 463 colors. ** Almond also available (not shown)

Custom colors and color formulas are available upon request to Customer Service. The color of actual products may vary; perform final color matching with actual material. Sonneborn® is not responsible for color matching when actual material is not used.

Safety Data Sheet
MasterSeal NP 1 lst also NP1 LST

1. Product and Company Identification

Company
BASF Canada Inc.
100 Milverton Drive
Mississauga, ON L5R 4H1, CANADA

24 Hour Emergency Response Information
CANUTEC (reverse charges): (613) 996-6666
BASF HOTLINE: (800) 454-COPE (2673)

2. Hazards Identification

Emergency overview

SENSITIZER.
IRRITANT.
Irritating to eyes, respiratory system and skin.
May cause sensitization by inhalation and skin contact.
CONTAINS MATERIAL WHICH MAY CAUSE CANCER.

State of matter: solid
Colour: pigmented
Odour: slight odour

Potential health effects

Acute toxicity:
Of very high toxicity after short-term inhalation. Virtually nontoxic after a single skin contact. Virtually nontoxic after a single ingestion.

Irritation / corrosion:
Irritating to eyes, respiratory system and skin.

Sensitization:
Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract.

Chronic toxicity:

Carcinogenicity: Indication of possible carcinogenic effect in animal tests.

Repeated dose toxicity: Prolonged exposure may cause chronic effects.
Overexposure may cause CNS depression including headache, dizziness, nausea and loss of consciousness.

Reproductive toxicity: The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Genotoxicity: The substance was mutagenic in various bacterial test systems; however, a mutagenic effect could not be confirmed in mammalian cell culture.

Potential environmental effects

Aquatic toxicity:
Acutely harmful for aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Degradation / environmental fate:
The product is unstable in water. The elimination data also refer to products of hydrolysis.

3. Composition / Information on Ingredients

CAS Number	Content (W/W)	Hazardous ingredients
1317-65-3	>= 10.0 - <= 30.0 %	Limestone
14807-96-6	>= 3.0 - <= 7.0 %	talc
13463-67-7	>= 3.0 - <= 7.0 %	Titanium dioxide
53306-54-0	>= 1.0 - <= 5.0 %	bis(2-propylheptyl) phthalate
8052-41-3	>= 1.0 - <= 5.0 %	Stoddard solvent
1305-78-8	>= 0.5 - <= 1.5 %	calcium oxide
584-84-9	>= 0.1 - <= 0.5 %	toluene-2,4-diisocyanate
91-08-7	>= 0.01 - <= 0.05 %	toluene-2,6-diisocyanate

4. First-Aid Measures

General advice:
First aid personnel should pay attention to their own safety. Remove contaminated clothing.

If inhaled:
If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

If on skin:
Wash thoroughly with soap and water. Under no circumstances should organic solvent be used. If irritation develops, seek medical attention.

If in eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:
Rinse mouth and then drink plenty of water. Do not induce vomiting unless told to by a poison control center or doctor.

Note to physician

Treatment:	Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Flash point:	89 °C	(ASTM D3278)
		Non-flammable.
Autoignition:		not applicable
Flammability:	does not ignite	(UN Test N.1 (ready combustible solids))

Suitable extinguishing media:
foam, water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

Hazards during fire-fighting:
carbon dioxide, carbon monoxide, harmful vapours, nitrogen oxides, fumes/smoke, carbon black

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

6. Accidental release measures

Personal precautions:
Use personal protective clothing. Handle in accordance with good building materials hygiene and safety practice.

Environmental precautions:
Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Cleanup:
For small amounts: Sweep/shovel up. Dispose of absorbed material in accordance with regulations.
For large amounts: Sweep/shovel up. Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Handling

General advice:
Avoid skin contact. No special measures necessary provided product is used correctly.

Protection against fire and explosion:
Keep away from sources of ignition - No smoking. The relevant fire protection measures should be noted.

Storage

General advice:
Keep only in the original container in a cool, well-ventilated place. Protect from direct sunlight. Store protected against freezing.

8. Exposure Controls and Personal Protection

Components with occupational exposure limits

Stoddard solvent	OSHA	PEL 500 ppm 2,900 mg/m3 ;
	ACGIH	TWA value 100 ppm ;
Titanium dioxide		
	ACGIH	TWA value 10 mg/m3 ;
calcium oxide	OSHA	PEL 5 mg/m3 ;
	ACGIH	TWA value 2 mg/m3 ;

talc	OSHA	TWA value 20 millions of particles per cubic foot of air ; TWA value 2.4 millions of particles per cubic foot of air Respirable ; The value is calculated from a specified equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation. TWA value 0.1 mg/m3 Respirable ; The value is calculated from a specified equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation. TWA value 0.3 mg/m3 Total dust ; The value is calculated from a specified equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation.
	ACGIH	TWA value 2 mg/m3 Respirable fraction ; The value is for particulate matter containing no asbestos and <1% crystalline silica.
toluene-2,6-diisocyanate		
	ACGIH	TWA value 0.005 ppm ; STEL value 0.02 ppm ;
toluene-2,4-diisocyanate	OSHA	CLV 0.02 ppm 0.14 mg/m3 ;
	ACGIH	TWA value 0.005 ppm ; STEL value 0.02 ppm ;
Limestone	OSHA	PEL 5 mg/m3 Respirable fraction ; PEL 15 mg/m3 Total dust ;

Personal protective equipment

Hand protection:
Chemical resistant protective gloves

Eye protection:
Safety glasses with side-shields.

Body protection:
Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:
Avoid contact with the skin, eyes and clothing. No special measures necessary if stored and handled correctly. Handle in accordance with good building materials hygiene and safety practice. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks).

9. Physical and Chemical Properties

Form:	paste	
Odour:	slight odour	
Odour threshold:	No data available.	
Colour:	pigmented	
pH value:		not applicable
Boiling point:		not applicable
Density:	1.20 g/cm3	(20 °C)
Solubility in water:		(15 °C) insoluble
Miscibility with water:		not (e.g. <10%)

10. Stability and Reactivity

Conditions to avoid:

See MSDS section 7 - Handling and storage.

Substances to avoid:
strong acids, strong bases, strong oxidizing agents

Hazardous reactions:
The product is stable if stored and handled as prescribed/indicated.

Decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:
No decomposition if stored and handled as prescribed/indicated.

Oxidizing properties:
Not an oxidizer.

11. Toxicological information

Acute toxicity

Information on: Stoddard solvent
Assessment of acute toxicity:
Aspiration may result in chemical pneumonitis, which may be fatal.

Information on: toluene-2,6-diisocyanate
Assessment of acute toxicity:
Of very high toxicity after short-term inhalation. In animal studies the substance is virtually nontoxic after a single ingestion. In animal studies the substance is virtually nontoxic after a single skin contact. EU-classification

Information on: toluene-2,4-diisocyanate
Assessment of acute toxicity:
Of very high toxicity after short-term inhalation. Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact.

Irritation / corrosion

Information on: calcium oxide
Assessment of irritating effects:
Corrosive! Damages skin and eyes.

Information on: toluene-2,6-diisocyanate
Assessment of irritating effects:
Irritating to eyes and skin.

Information on: toluene-2,4-diisocyanate
Assessment of irritating effects:
Irritating to eyes and skin.

Sensitization

Information on: toluene-2,6-diisocyanate
Assessment of sensitization:
The substance may cause sensitization of the respiratory tract. Sensitization after skin contact possible.

Information on: toluene-2,4-diisocyanate
Assessment of sensitization:
The substance may cause sensitization of the respiratory tract. Sensitization after skin contact possible.

Repeated dose toxicity

Information on: talc

Information on: bis(2-propylheptyl) phthalate
Assessment of repeated dose toxicity:
Repeated exposure to high doses of the substance causes reversible liver changes in rodents. According to present knowledge, these effects do not occur in man.

Information on: Stoddard solvent
Assessment of repeated dose toxicity:
Overexposure may cause liver and kidney toxicity. Repeated exposures may result in pulmonary congestion.

Information on: toluene-2,4-diisocyanate
Assessment of repeated dose toxicity:
The substance may cause damage to the lung even after repeated inhalation of low doses, as shown in animal studies.

Genetic toxicity

Information on: toluene-2,6-diisocyanate
The substance was mutagenic in various test systems with bacterias and cell cultures; however, these results could not be confirmed in tests with mammals. Literature data.

Information on: toluene-2,4-diisocyanate
The substance was mutagenic in various test systems with bacterias and cell cultures; however, these results could not be confirmed in tests with mammals. Literature data.

Carcinogenicity

Information on: bis(2-propylheptyl) phthalate
In long-term studies in rodents exposed to high doses, a tumorigenic effect was found; however, these results are thought to be due to a rodent-specific liver effect that is not relevant to humans. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.
Information on: Titanium dioxide
IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans). In long-term studies in rats in which the substance was given by inhalation, a carcinogenic effect was observed. Tumors were only observed in rats after chronic inhalative exposure to high concentrations which caused sustained lung inflammation. In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed. Dermal exposure is not expected to be carcinogenic.
Information on: toluene-2,6-diisocyanate
IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans).
Information on: toluene-2,4-diisocyanate
IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans). NTP listed carcinogen
---

Other Information:

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses. The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.
Information on: Stoddard solvent
In tests with mammals a central nervous system disorder was observed.
---

12. Ecological Information

Degradability / Persistence
Biological / Abiological Degradation

Evaluation: Poorly biodegradable.

Poorly biodegradable.
The product is unstable in water. The elimination data also refer to products of hydrolysis.

Other adverse effects:

Acutely harmful for aquatic organisms. Do not discharge product into the environment without control. The product has not been tested. The statements on ecotoxicology have been derived from the properties of the individual components.

13. Disposal considerations

Waste disposal of substance:
Dispose of in accordance with local authority regulations. Do not discharge into drains/surface waters/groundwater.

14. Transport Information

Land transport
TDG

Not classified as a dangerous good under transport regulations

Sea transport
IMDG

Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:
Chemical DSL, CA released; restriction on use / not listed

CEPA, Significant New Activity Restriction (SNAc)
Not for use in products designed to be used by children under the age of 7.
SNAc 12541

WHMIS classification: D2A: Materials Causing Other Toxic Effects - Very toxic material

THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.

16. Other Information

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

MSDS Prepared by:
BASF NA Product Regulations
msds@basf.com
BASF HOTLINE (800) 454 – COPE (2673)

MSDS Prepared on: 2012/09/26

END OF DATA SHEET

TECHNICAL DATA

REVIEWED (see GENERAL CONDITIONS)

- ☐ NO EXCEPTIONS TAKEN
- ■ MAKE CORRECTIONS NOTED
- ☐ REVISE & RESUBMIT
- ☐ REJECTED

If noted NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED, fabrication may be undertaken. Review does not authorize changes to contract sum unless saved in duly executed Change Order. If noted REVISE & RESUBMIT or REJECTED, fabrication may not be undertaken. Resubmit corrected copies for re-review. Corrections shall be limited to items marked. Reviewing is only for general conformance with the design concept of the project and general compliance with information given in the Contract Documents. Contractor is responsible for confirmation and correlation of all dimensions at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all trades. Review of a specific item does not indicate review of an assembly of which the item is a component, nor shall it indicate that the item will perform it's intended function or as required by the Contract Documents. Distribution of documents by the Contractor shall constitute his approval.

swa

2200 BRIDGEWAY BOULEVARD SAUSALITO, CA 94965
UNITED STATES OF AMERICA TEL. +1.415.332.5100

By: Rick Story Date: Feb. 4, 2015

Form Release Agent shall not discolor the appearance of the concrete. SWA 2/4/15

STRIP WB

le water based form release agent

GREENCONSCIOUS

B
ac
si
st
vi
bc

B

ly re-
ental
and
pro-
ctural

U

plywood,
iberglass

ment

- Cleans and reconditions forms
- Helps eliminate build-up and bugholes

MIXING INSTRUCTIONS

Stir BIO STRIP WB slowly and thoroughly before each use using slow speed mixing equipment.

APPLICATION

BIO STRIP WB should be applied with a sprayer, brush or roller in a thin uniform film. No special application equipment is necessary, but a spray application is the most practical. Ponding or puddling is to be avoided. Specific application rates:

Steel, Plastic, Fiberglass	1,500 sq ft/gal
Aluminum, HDO Plywood	1,500 sq ft/gal
Elastometric Form Liners	1,500 sq ft/gal
MDO Plywood	1,000 sq ft/gal
Urethane Coated Plywood	1,000 sq ft/gal
Coated Paper Forms	1,000 sq ft/gal
Dimensional Lumber	750 sq ft/gal
Rough Sawn Lumber	750 sq ft/gal
Striated Plywood	750 sq ft/gal

STANDARDS

- Tested and certified to the performance requirements of NSF/ANSI 61
- Corps of Engineers CEGS-03300, Section 10.8 Form Coating; CE-204, Section 7.10
- Navy Dock and Piers 56359
- V.O.C. Compliant (0 grams/liter)
- 100% Biodegradable

CLEANING

Sprayers and other application equipment can be cleaned with water.

PHYSICAL PROPERTIES

Finished Appearance:	Clear
Color:	Milky White
Flash Point:	None
VOC Content:	0 g/L

PACKAGING

BIO STRIP WB is packaged in 275 gallon totes, 55 gallon drums and 5 gallon pails.

SHELF LIFE

Shelf life of BIO STRIP WB in the original tightly closed containers is one year from date of manufacture.

LIMITATIONS

For subsequent coatings over concrete, follow recommended application procedures by paint and coating manufacturers. When any material is to be applied on top of the concrete, follow the application instructions of the manufacturer. Protect from freezing.

PRECAUTIONS

DO NOT CUT OR WELD CONTAINER
INDUSTRIAL USE ONLY

Additional precautions, safety information and first aid are contained in the Material Safety Data Sheet.

WARRANTY

NOTICE-READ CAREFULLY
CONDITIONS OF SALE

SpecChem offers this product for sale subject to and limited by the warranty which may only be varied by written agreement of a duly authorized corporate officer of SpecChem. No other representative of or for SpecChem is authorized to grant any warranty or to waive limitation of liability set forth below.

WARRANTY LIMITATION

SpecChem warrants this product to be free of manufacturing defects. If the product when purchased was defective and was within use period indicated on container or carton, when used, SpecChem will replace the defective product with new product without charge to the purchaser. SpecChem makes no other warranty, either expressed or implied, concerning this product. There is no warranty of merchantability. NO CLAIM OF ANY KIND SHALL BE GREATER THAN THE PURCHASE PRICE OF THE PRODUCT IN RESPECT OF WHICH DAMAGES ARE CLAIMED.

INHERENT RISK

Purchaser assumes all risk associated with the use or application of the product.

SPECCHEM
Solution to Service

1511 Baltimore Ave, Suite 600
Kansas City, MO 64108
www.specchemllc.com 866.791.8700

MATERIAL SAFETY DATA SHEET

Bio Strip WB

1. COMPANY IDENTIFICATION

Manufacturer: SpecChem
444-B Richmond Ave.
Kansas City, KS 66101
Phone (866) 791-8700
24 Hour Emergency Contact: CHEMTREC (800) 424-9300

2. COMPOSITION INFORMATION

None of the materials are considered a hazardous material.

3. HAZARDS IDENTIFICATION

None of the materials are considered a hazardous material.
NFPA CLASSIFICATION (0=Least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)
Health 0, Fire 0, Reactivity 0
HAZARD DESCRIPTION: None
SYMPTOMS OF OVEREXPOSURE: Headache, nausea, respiratory irritation, skin irritation, drowsiness.

4. FIRST AID PROCEDURES

EYE CONTACT: Immediately flush with water for 15 minutes or until irritation subsides. Obtain medical attention if irritation persists.
SKIN CONTACT: Remove contaminated clothing and wash skin thoroughly with soap and water. Obtain medical attention if irritation persists. Discard contaminated leather articles such as shoes and belt.
INHALATION: Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor from hot product, immediately remove victim to fresh air. Give artificial respiration if not breathing. Obtain medical attention if breathing problems persist.
INGESTION: If ingested, DO NOT induce vomiting and DO NOT give liquids. Immediately obtain medical attention. Should a small amount accidentally enter mouth, rinse with water until taste is gone.

5. FIRE FIGHTING MEASURES

Flash Point: >200^{o}F (PMCC)
Autoignition Temperature: >300^{o}C (est.)
Flammability Limits in air: Lower flammable limit 0.8%
Upper flammable limit 7.0%
EXTINGUISHING MEDIA: Foam, water spray (fog), dry chemical, carbon dioxide, and vaporizing liquid type extinguishing agents.
EXTINGUISHING MEDIA TO AVOID: No information available.
SPECIAL FIREFIGHTING PROCEDURES: Do not direct a solid stream of water or foam into hot, burning pools; this may cause frothing and increase fire intensity. Use water to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse vapors and provide protection for personnel attempting to stop the leak. Water spray may be used to flush spills away from exposures. Minimize breathing gases, vapor, smoke, or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed. DECOMPOSITION PRODUCTS: Carbon monoxide, sulfur oxides, aldehydes, and others in the case of incomplete combustion. "EMPTY" CONTAINER WARNING: "Empty" containers retain residue (liquid and/or vapor) and can be dangerous. **Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition; they may explode and cause injury or death**.
Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. For work on tanks refer to OSHA, ANSI Z 49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

MATERIAL SAFETY DATA SHEET

Bio Strip WB

6. ACCIDENTAL RELEASE MEASURES
LARGE SPILLS: Evacuate the hazard area of unprotected personnel. Dike and contain with suitable absorbent. Shut off source of leak only if it is safe to do so. Do not allow to enter sewers or open waterways. Advise authorities if product has entered sewers, waterways, or extensive land areas.
SMALL SPILLS: Extinguish all possible sources of ignition. Take up with absorbent materials such as sand or sawdust and place in non-leaking containers. Dispose of in accordance with all federal, state, and local regulations.

7. HANDLING AND STORAGE
HANDLING: For industrial use only. Avoid skin and eye contact. Minimize breathing vapor or mist. Respiratory protection is required when ventilation is inadequate. Cleanse skin thoroughly after contact, before breaks and meals, and at the end of a work period. Product is readily removed from skin by waterless hand cleaners following by washing thoroughly with soap and water.
STORAGE: Store in a cool, dry location and in accordance with good industrial practices. Keep containers closed when not in use. Do not handle or store near heat, sparks, flame, or strong oxidizers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION
VENTILATION: Use local exhaust to capture vapor or mists if necessary. Provide ventilation sufficient to prevent exceeding OSHA PELs.
RESPIRATORY PROTECTION: Normally not needed at ambient temperatures. Use OSHA/NIOSH approved supplied-air respiratory protection in confined or enclosed spaces, where mist is present or may be generated, or in event of fire.
SKIN PROTECTION: Use chemical resistant gloves, boots, apron, and other impervious clothing to prevent prolonged or repeated skin contact. Nitrile boots recommended.
EYE PROTECTION: Use splash goggles or face shield when eye contact may occur.
PERSONAL HYGIENE: Remove contaminated clothing and launder or dry clean before reuse. Discard contaminated leather articles such as shoes and belt.

9. PHYSICAL AND CHEMICAL PROPERTIES
VOC CONTENT: 0 GRAMS/LITER
APPEARANCE: Milky white liquid
ODOR: Mild to none
BOILING POINT: 212^{oF} (est.)
VAPOR PRESSURE: Less than 0.01 mm Hg $20^{o}C$
SPECIFIC GRAVITY: 0.99
VAPOR DENSITY: Greater than 5.0
EVAPORATION RATE @ STP (n-butyl acetate=1): Less than 0.01
SOLUBILITY IN WATER: Complete

10. STABILITY AND REACTIVITY
This product is stable and will not react violently with water. Hazardous polymerization will not occur.
Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite. Do not store with or allow contact with acids.

11. TOXICOLOGICAL INFORMATION
ACUTE EXPOSURE: Tests on similar materials show a low order of acute oral and dermal toxicity. As a precaution, exposure to liquids, vapor, mists, or fumes should be minimized.
EYE EFFECTS: Minimal irritation on contact.
SKIN EFFECTS: May cause mild irritation with prolonged and repeated exposure.
ORAL EFFECTS: Tests on similar materials indicate a low order of acute oral toxicity.
INHALATION EFFECTS: Low acute toxicity expected on inhalation.

MATERIAL SAFETY DATA SHEET

Bio Strip WB

12. ECOLOGICAL INFORMATION
ENVIRONMENTAL FATE: Information may be available, contact manufacturer.
ECOTOXICITY: Information may be available, contact manufacturer.
FURTHER INFORMATION: None.

13. DISPOSAL CONSIDERATIONS
When disposed of properly, this product does not meet RCRA classification or listing for hazardous waste. Dispose in accordance with all applicable federal, state, provincial, and local environmental regulations. Empty containers should be recycled or disposed of through an approved waste management facility.
Disposal methods identified are for the product as sold. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permissible under applicable rules, regulations and/or laws governing your location.

14. TRANSPORT INFORMATION
DOT SHIPPING LABEL: **Not regulated by the U.S. DOT**
HAZARD CLASS: Not applicable

For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents (DOT P 5800.3).

15. REGULATORY INFORMATION
FEDERAL/NATIONAL
This product is not hazardous as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
SUPERFUND AMENDMENTS AND REAUTHORIAZATION ACT OF 1986 (SARA) TITLE III (Emergency Planning and Community Right to Know Act) SECTION 313
This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:
NONE
TOXIC SUBSTANCES CONTROL ACT (TSCA)
All components of this product are on the TSCA Inventory or are exempt from the TSCA Inventory requirements.

16. OTHER INFORMATION
The information and recommendations contained herein were obtained from sources we believe to be accurate and reliable as of the date revised. However, manufacturer does not warrant or guarantee their accuracy or reliability, and shall not be liable for any loss or damage arising out of the use thereof. The information and recommendations are offered for the user's consideration and examination and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use.

TOP-CAST™

RONMENTALLY-FRIENDLY TOP SURFACE RETARDER

REVIEWED (see GENERAL CONDITIONS)
☐ NO EXCEPTIONS TAKEN
■ MAKE CORRECTIONS NOTED
☐ REVISE & RESUBMIT
☐ REJECTED
If noted NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED, fabrication may be undertaken. Review does not authorize changes to contract sum unless saved in duly executed Change Order. If noted REVISE & RESUBMIT or REJECTED, fabrication may not be undertaken. Resubmit corrected copies for re-review. Corrections shall be limited to items marked. Reviewing is only for general conformance with the design concept of the project and general compliance with information given in the Contract Documents. Contractor is responsible for confirmation and correlation of all dimensions at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all trades. Review of a specific item does not indicate review of an assembly of which the item is a component, nor shall it indicate that the item will perform it's intended function or as required by the Contract Documents. Distribution of documents by the Contractor shall constitute his approval.
swa
2200 BRIDGEWAY BOULEVARD SAUSALITO, CA 94965
UNITED STATES OF AMERICA TEL. +1.415.332.5100
By: Rick Story Date: Feb. 4, 2015

Refer to SWA Comments/ review of 1/18/15 SWA 2/4/15

- Solvent-free, odorless
- Requires no plastic covering
- Fast turnaround, enhanced appearance and protection when using Dayton Superior's Ultra Seal 30 EF

MOCK-UP
Always prepare small test panels to determine the most suitable grade to obtain the desired depth of etch. When ...late job site conditions as ... the ...ade

For pavement Mock Ups use each one of these on each mock up panel

APPLICATION
Surface Prep
In preparation for placement of concrete, protect all curbs, borders, adjacent stones, pavers, etc. with a coat of Face Off. Allow coating to dry before placing concrete. Place concrete and float or trowel finish.

MIXING
Mix thoroughly prior to each use.

PLACEMENT
Apply Top-Cast uniformly to the wet concrete after the evaporation of the initial bleed water. Spray with a low-pressure sprayer (plastic preferred) until the surface has a complete hiding coat. Do not apply too sparingly. Use water for clean up. Once dry (1–2 hours after application), Top-Cast provides good protection against intermittent rain and does not require additional cover.

REMOVAL
The retarded cement matrix is normally washed away the next day, using high-pressure water. When using certain mix designs, especially in warmer temperatures, it may be necessary to remove the retarded matrix the same day for best results, particularly, when using the lightest etches. In hot weather it may also be necessary to remove the retarded matrix the same day for best results.

SEALING
For enhanced a... 30 EF can be ap... concrete. Allow ... evaporate prior ... ASTM C 309 curing compound, apply Cure & Seal 30 EF after pressure washing and evaporation of the surface water. For added protection and appearance, Ultra Seal 30 EF may be applied over the Cure & Seal 30 EF once the Cure & Seal 30 EF has dried.

PACKAGING
Top-Cast is available 5 gal (19 L) plastic pails in the following grades.

	NO. CODE	ETCH AGGREGATE SIZE TO EXPOSURE	PACKAGE COLOR
MICRO ETCH	03	Acid Etch Finish	Violet
	05	Sandblast Finish	Light Blue
	15	Up to 1/4" (6.5 mm)	Yellow
MEDIUM EXPOSURE	25	1/8"– 1/4" (3 mm–6.5 mm)	Beige
	50	1/8"– 3/8" (3 mm–9.5 mm)	Canary Green
	75	1/8"– 3/8" (3 mm–9.5 mm)	Blue
	100	3/8"– 1/2" (9.5 mm–13 mm)	Gray
FULL-DEPTH EXPOSURE	125	3/8"– 5/8" (9.5 mm–16 mm)	Pink
	150	3/8"– 5/8" (9.5 mm–16 mm)	Green
	200	5/8 – 1" (16 mm–25 mm)	Salmon
	250	1" – 1 1/2" (25 mm–38 mm)	Orange

Refer to www.daytonsuperior.com for latest Technical Data Sheet and MSDS
1125 Byers Road, Miamisburg OH 45342
Customer Service: (888) 977-9600
Technical Assistance: (866) 329-8724

TOP-CAST™

CONTINUED

** Values listed are for standard mix designs with 564 lbs./yd³ (355 kg./m³) with the aggregate sizes listed above. Mixes with more or less cement may yield different results. In most conditions it is best to test prior to placement.*

CLEAN UP
Clean tools and equipment with clean water after use.

COVERAGE
Top-Cast will cover approximately 250-350 ft²/gal (6.1–8.6 m² /L).

STORAGE
Keep from Freezing. Top-Cast has a shelf life of two years from date of manufacture, in closed original container.

WASTE DISPOSAL
Dispose of waste material and empty packaging in accordance with all Federal, State and Local requirements. Refer to the product's MSDS for further information.

LIMITATIONS
In hot weather it may also be necessary to remove the retarded matrix the same day for best results.

PRECAUTIONS: REFER TO MSDS BEFORE USE FOR ADDITIONAL INFORMATION.

PRECAUTIONARY MEASURES
- Keep out of the reach of children.
- Avoid contact with skin and eyes.

FIRST AID
After inhalation: If symptoms develop, supply fresh air. If required, provide artificial respiration and seek immediate medical treatment. After skin contact: Immediately wash contaminated skin with soap or mild detergent and water. If this chemical soaks clothing, immediately remove clothing and wash skin. If skin irritation continues, consult a doctor. After eye contact: Rinse opened eye for several minutes under running water. Seek immediate medical advice. After swallowing: Do not induce vomiting; immediately call for medical help.

DISTRIBUTED BY:
Dayton Superior Corporation
1125 Byers Road
Miamisburg, OH 45342
Customer Service: 888-977-9600
Technical Services: 866-329-8724
Website: www.daytonsuperior.com

WARRANTY
Dayton Superior Corporation ("Dayton") warrants for 12 months from the date of manufacture or for the duration of the published product shelf life, whichever is less, that at the time of shipment by Dayton, the product is free of manufacturing defects and conforms to Dayton's product properties in force on the date of acceptance by Dayton of the order. Dayton shall only be liable under this warranty if the product has been applied, used, and stored in accordance with Dayton's instructions, especially surface preparation and installation, in force on the date of acceptance by Dayton of the order. The purchaser must examine the product when received and promptly notify Dayton in writing of any non-conformity before the product is used and no later than 30 days after such non-conformity is first discovered. If Dayton, in its sole discretion, determines that the product breached the above warranty, it will, in its sole discretion, replace the non-conforming product, refund the purchase price or issue a credit in the amount of the purchase price. This is the sole and exclusive remedy for breach of this warranty. Only a Dayton officer is authorized to modify this warranty. The information in this data sheet supersedes all other sales information received by the customer during the sales process. THE FOREGOING WARRANTY SHALL BE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, TRADE OR OTHERWISE.

Dayton shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for loss of sales, revenues or profits; cost of capital or funds; business interruption or cost of downtime, loss of use, damage to or loss of use of other property (real or personal); failure to realize expected savings; frustration of economic or business expectations; claims by third parties (other than for bodily injury), or economic losses of any kind; or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform, its obligations under any contract for sale of product, even if Dayton could foresee or has been advised of the possibility of such damages. The Parties expressly agree that these limitations on damages are allocations of risk constituting, in part, the consideration for this contract, and also that such limitations shall survive the determination of any court of competent jurisdiction that any remedy provided in these terms or available at law fails of its essential purpose.

PERMACOLOR® Grout^

DS-250.0-0614

Globally Proven Construction Solutions

1. PRODUCT NAME

PERMACOLOR® Gro

2. MANUFACTURE

LATICRETE Internati
1 LATICRETE Park N
Bethany, CT 06524-3
Telephone: +
Toll Free:
Fax: +
Internet:

3. PRODUCT DES

PERMACOLOR Grou
provides a grout joint
is color consistent. M

REVIEWED (see GENERAL CONDITIONS)

- ■ NO EXCEPTIONS TAKEN
- ☐ MAKE CORRECTIONS NOTED
- ☐ REVISE & RESUBMIT
- ☐ REJECTED

If noted NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED, fabrication may be undertaken. Review does not authorize changes to contract sum unless saved in duly executed Change Order. If noted REVISE & RESUBMIT or REJECTED, fabrication may not be undertaken. Resubmit corrected copies for re-review. Corrections shall be limited to items marked. Reviewing is only for general conformance with the design concept of the project and general compliance with information given in the Contract Documents. Contractor is responsible for confirmation and correlation of all dimensions at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all trades. Review of a specific item does not indicate review of an assembly of which the item is a component, nor shall it indicate that the item will perform it's intended function or as required by the Contract Documents. Distribution of documents by the Contractor shall constitute his approval.

swa

2200 BRIDGEWAY BOULEVARD SAUSALITO, CA 94965
UNITED STATES OF AMERICA TEL. +1.415.332.5100

By: Rick Story Date: Feb. 4,2015

Use a natural Gray color:

Advantages

- Consistent color
- Fast setting
- Mixes with water
- Ideal for floor [1.5 to 12 mm])
- Equipped with ar
- Component of LATICRETE® 25-Year System Warranty (United States and Canada) (DS ime Warranty (United States ar
- Improved stain resistance for a cement based grout
- Interior and exterior applications
- Residential and commercial
- Conforms to ISO 13007 and EN 13888 (CG2WA)
- Meets ANSI A118.7 requirements

Packaging

25 lb (11.3 kg) bags
8 lb (3.6 kg) cartons

Shelf Life

Factory sealed containers of this product are guaranteed to be of first quality for the time period listed below if stored off the ground in a dry area.

- 25 lb (11.3 kg) bags – one (1) year
- 8 lb (3.6 kg) cartons – two (2) years

Limitations

- Adhesives/mastics, mortars and grouts for ceramic tile, pavers, brick and stone are not replacements for waterproofing membranes. When a waterproofing membrane is required, use a LATICRETE Waterproofing Membrane (see Section 10 FILING SYSTEM).

Use SPECTRALOCK® 2000 IG when chemical resistance is required.

DO NOT use acid to clean colored grout joints.

Job site conditions will affect the final color of colored grouts. Try a small test area to determine your results before grouting the entire installation.

Certain types of tile are more absorbent than others and will trap color pigment during grouting. Prior to grouting, test for absorption of color pigment. Porous tiles will need to be sealed prior to grouting.

Selecting other grouting materials: LATICRETE has grouting materials designed for every use. For installations that require high strength and chemical resistance choose SPECTRALOCK 2000 IG. This product is ideal for installations where a stain resistant colorfast grout is desired.

: Surfaces must be structurally sound, stable and rigid enough to ort ceramic/stone tile, thin brick and similar finishes. Substrate ection under all live, dead and impact loads, including centrated loads, must not exceed L/360 for thin bed ceramic rick installations or L/480 for thin bed stone installations where an length.

Cautions

Consult SDS for more safety information.

- During cold weather, protect finished work from traffic until fully cured.
- Contains portland cement and silica sand. May irritate eyes and skin. Avoid contact with eyes or prolonged contact with skin. In case of contact, flush thoroughly with water.
- Do not take internally. Silica sand may cause cancer or serious lung problems. Avoid breathing dust. Wear a respirator in dusty areas.
- Grout may scratch soft glazed or polished surfaces. Conduct a test area to verify results.

- In submerged applications or steam rooms allow PERMACOLOR® Grout^ to cure for 14 days at 70°F (21°C) prior to filling with water or exposing to steam. See TDS 192 and TDS 172 for more information on these applications.
- Keep out of reach of children.

4. TECHNICAL DATA

VOC/LEED Product Information

This product has been certified for Low Chemical Emissions (ULCOM/GG UL2818) under the UL GREENGUARD Certification Program for Chemical Emissions for Building Materials, Finishes and Furnishings (UL 2818 Standard) by UL Environment.

Applicable Standards

(ANSI A118.6, A118.7, EN 13888 & ISO 13007)

Physical Properties

Tensile Strength (28 Days)	510 psi (3.5 MPa)
Compressive Strength (28 Days)	4500 psi (31.0 MPa)
Flexural Strength (28 Days)	1250 psi (8.62 MPa)
Linear Shrinkage (7 Days)	0.0450 %
Water Absorption (28 Days)	4.25%

Test	Test Method	ISO 13007-3 CG2WA Specification	Results
28 Day Cure Abrasion Resistance	ISO 13007-4 4.4	Less than or equal to 1000 mm^3 (0.061 in^3)	121–132 mm^3 (0.0074–0.0081 in^3)
28 Day Cure Flexural Strength	ISO 13007-4 4.1.3	Greater than 2.5 MPa (362 psi)	8.5–9.2 MPa (1226–1340 psi)
6 Day 21 Day Water Soak 25 Freeze/Thaw Cycle Flexural Strength	ISO 13007-4 4.1.3	Greater than 2.5 MPa (362 psi)	3.31–3.79 MPa (480–550 psi)
28 Day Cure Compressive Strength	ISO 13007-4 4.1.4	Greater than 15 MPa (2175 psi)	35.7–36.8 MPa (5176–5339 psi)
6 Day 21 Day Water Soak 25 Freeze/Thaw Cycle Compressive Strength	ISO 13007-4 4.1.4	Greater than 15 MPa (2175 psi)	30.4–31.2 MPa (4408–4518 psi)
28 Day Cure Shrinkage	ISO 13007-4 4.3	Less than 3 mm/m (0.12 in./3.28 ft)	0.51–0.62 mm/m (0.02–0.024 in/3.28 ft)
28 Day Water Absorption Soaked 30 Minutes	ISO 13007-4 4.2	Less than 2 g (0.0044 lb)	0.09–0.14 g (0.0002–0.0003 lb)
28 Day Water Absorption Soaked 240 Minutes	ISO 13007-4 4.2	Less than 5 g (0.011 lb)	0.54–0.7 g (0.0012–0.0015 lb)

Working Properties

Pot Life	45–60 min at 70°F (21°C)
Final Set	3 – 4 hrs
Heavy Foot Traffic	6 hrs

Specifications subject to change without notification. Results shown are typical but reflect test procedures used. Actual field performance will depend on installation methods and site conditions.

5. INSTALLATION

Surface Preparation

Before starting to grout, remove spacers and debris in grout joints and remove dust and dirt using a wet sponge. Do not leave water standing in joints. Note: when grouting in hot weather refer to TDS 176 Hot Weather Tiling and Grouting. Substrate temperature must be between 40°F (4°C) and 90°F (32°C). Apply grout release or sealer if necessary. Refer to TDS 400 Grout Guide for more information on grouting.

Mixing

Use approximately 2 – 2 1/4 quarts (1.9 L – 2.15 L) of clean potable water for 25 lbs (11.3 kg) of PERMACOLOR Grout. Do not use with 1776 Grout Enhancer or any other latex additive. Place water in a clean mixing container and add grout powder. Mix with a slow speed drill mixer (300 rpm) for 1 minute. Wait for 5 minutes and remix with drill for 1 minute.

Application

Clean tile surface with a damp sponge. Spread with a sharp, firm rubber grout float or wall float for narrow wall joints. To remove excess grout hold the float at a 90° angle and pull it at a 45° angle diagonally across the joints to avoid pulling out the material.

Note: If the grout begins to stiffen during installation, remix with drill mixer for 10–15 seconds. DO NOT ADD MORE WATER.

Cleaning

Wait 35 – 40 minutes at 70°F (21°C). For wider joints or cooler temperatures wait longer (25 – 30 minutes) Begin initial cleaning by lightly wiping down entire area to be cleaned with a damp sponge. Wash with a damp sponge (not wet). Work diagonally to the joints. Allow to dry 3 hours at 70°F (21°C). For second cleaning use a damp sponge or dry cloth to remove remaining grout haze.

Note: Use caution when polishing soft glazed tile or polished stone. If grout is to be sealed, LATICRETE generally recommends waiting a minimum of a 48 hours at 70°F (21°C) prior to sealing PERMACOLOR Grout^, or any other cement-based grout; however, we suggest deferring to the written recommendations of the sealer manufacturer to make the final determination, as certain sealers may require the cement grout to cure for an extended period of time.

6. AVAILABILITY AND COST

Availability

LATICRETE® and LATAPOXY® materials are available worldwide.
For Distributor information:

Toll Free: 1.800.243.4788
Telephone: +1.203.393.0010

For on-line distributor information, visit LATICRETE at **www.laticrete.com**.

Cost

Contact a LATICRETE Distributor in your area.

7. WARRANTY

See 10. FILING SYSTEM:

DS 230.13: LATICRETE® Product Warranty

A component of:

DS 230.05: LATICRETE 5 Year System Warranty (United States and Canada)

DS 230.10: LATICRETE 10 Year System Warranty (United States and Canada)

DS 230.15: LATICRETE 15 Year System Warranty for Steel or Wood Framed Exterior Facades (United States and Canada)

DS 025.0: LATICRETE 25 Year System Warranty (United States and Canada)

DS 230.99: LATICRETE Lifetime System Warranty

8. MAINTENANCE

LATICRETE and LATAPOXY® grouts require routine cleaning with a neutral pH soap and water. Contact the cleaner manufacturer if another cleaner type will be used to ensure compatibility with the grout. Installation performance and durability may depend on properly maintaining products supplied by other manufacturers. Routine maintenance can be done with detergents and a sponge or mop. For tough or difficult to remove soil, a bleaching cleaner (e.g. Soft Scrub, Comet, Ajax, etc. or electric dish washing detergent) on a nylon scrubbing pad or a long handled stiff bristle brush can be used. Please note: Prior to using any cleaning material on a tile, etc. installation, test a discrete area or scrap piece of tile to ensure desired results. For additional information, please refer to the Grout Guide, TDS 400.

9. TECHNICAL SERVICES

Technical Assistance

Information is available by calling the LATICRETE Technical Service Hotline:

Toll Free: 1.800.243.4788, ext. 235
Telephone: +1.203.393.0010, ext. 235
Fax: +1.203.393.1948

Technical and Safety Literature

To acquire technical and safety literature, please visit our website at **www.laticrete.com**.

10. FILING SYSTEM

Additional product information is available on our website at www.laticrete.com. The following is a list of related documents:

DS 230.13: LATICRETE Product Warranty

DS 230.05: LATICRETE 5 Year System Warranty (United States and Canada)

DS 230.10: LATICRETE 10 Year System Warranty (United States and Canada)

DS 230.15: LATICRETE 15 Year System Warranty for Steel or Wood Framed Exterior Facades (United States and Canada)

DS 025.0: LATICRETE 25 Year System Warranty (United States and Canada)

DS 230.99: LATICRETE Lifetime System Warranty

DS 030.0: SPECTRALOCK® 2000 IG

DS 236.0: 9235 Waterproofing Membrane

DS 663.0: HYDRO BAN®

TDS 192: Installation of Ceramic Tile in Swimming Pools

TDS 176: Hot Weather Tiling and Grouting

[] United States Invention Patent No.: 6784229 (and other Patents)

LATICRETE International, Inc.
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LATICRETE® and LATAPOXY® Grouts and Sealants

Morteros para juntas y selladores LATICRETE y LATAPOXY

44 Bright White ▲ ■ # ★ ✱ ✔ For LATICRETE® SpectraLOCK® PRO Premium Grout† and LATICRETE SpectraLOCK PRO Grout, **#44 Bright White** may appear less bright than swatch.

18 Sauterne ■ # ★

16 Siltstone ■

85 Almond ▲ ■ # ★

03 Silk ■ ★

23 Antique White ▲ ■ # ★

39 Mushroom ▲ ■ ★ ✱

41 Kashmir ■ ★

81 Butter Cream ■ ★

52 Toasted Almond ▲ ■ ★

55 Tawny ▲

17 Marble Beige ▲ ■ # ★

40 Latte ▲ ■ ★ ✱

61 Parchment ▲ ■ # ★

30 Sand Beige ▲ ★

56 Desert Khaki ▲ ■

38 River Rock ■ ✱

27 Hemp ★

57 Hot Cocoa ▲

92 Saltillo ★

58 [illegible]

46 Quarry Red ★ ✱

43 Chocolate Truffle ★

66 Chestnut Brown ▲ ★ ✱

59 Espresso ▲

35 Mocha ▲ ★

50 Sea Glass ▲ ■ ★

67 Autumn Green ▲

53 Twilight Blue

USE the Natural Gray
SWA 2/4/15

42 Platinum ▲ ★

91 Slate Grey ★

88 Silver Shadow ▲ ■ # ★

89 Smoke Grey ▲ ■ ★

90 Light Pewter ■ ★

78 Sterling Silver ▲ ■ ★

24 Natural Grey ▲ ★ ✱

34 Sandstone ★

60 Dusty Grey ▲

45 Raven ★ ✱

22 Midnight Black ▲ ★

GROUT AND SEALANT SELECTION KEY / GUIA DE SELECCIÓN DE REJUNTES

Available in All 40 Colors:
(Disponibles en todos los 40 colores)

LATICRETE® SpectraLOCK® PRO Premium Grout†

LATICRETE SpectraLOCK PRO Grout

LATICRETE PermaColor™ Grout*
25 lbs, 8 lbs (11.3 kg, 3.6 kg)

LATICRETE Premium Acrylic Caulk
(Sanded and Unsanded)

Available in Selected Colors: (Disponibles en colores seleccionados)

▲ LATICRETE Latasil™

■ LATICRETE SpectraLOCK Grout Dazzle Glow

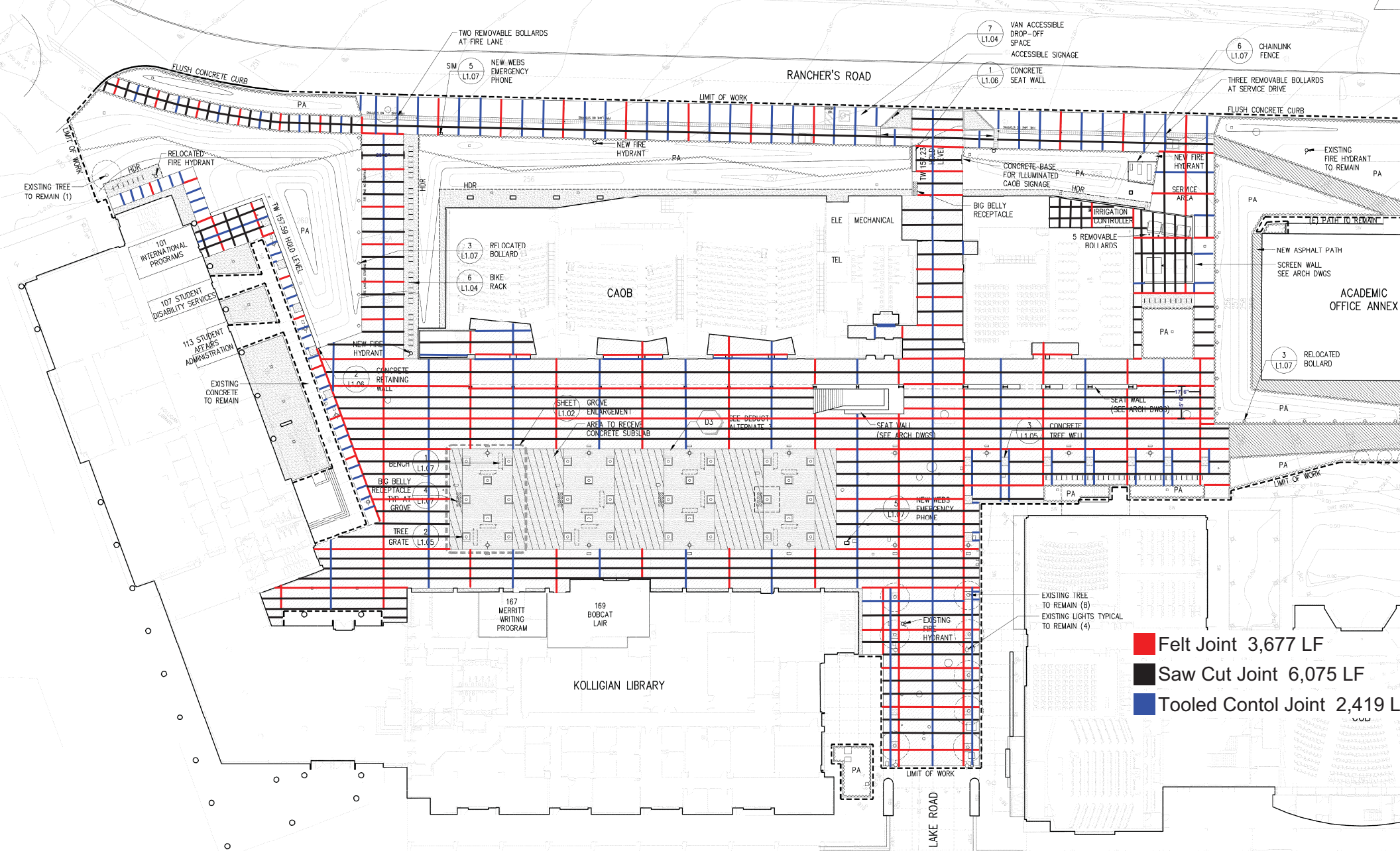
★ LATICRETE 1500 Sanded Grout 25 lbs, 10 lbs (11.3 kg, 4.5 kg) and LATICRETE 1600 Unsanded Grout 8 lbs (3.6 kg)

LATICRETE 1600 Unsanded Grout 25 lbs (11.3 kg)

✱ LATICRETE Masonry Pointing Mortar

✔ LATICRETE SpectraLOCK 2000 IG is not available in #44 Bright White
✔ LATICRETE SpectraLOCK 2000 IG no se encuentra disponible en color #44 Blanco brillante

Please note that the colors contained within this PDF-based Grout and Sealant Color Chart are an approximation only. Please see www.laticrete.com/tools to order a printed copy


RANCHER'S ROAD
FLUSH CONCRETE CURB
LIMIT OF WORK
TWO REMOVABLE BOLLARDS AT FIRE LANE
SIM 5 L1.07 NEW WEBS EMERGENCY PHONE
7 L1.04 VAN ACCESSIBLE DROP-OFF SPACE
ACCESSIBLE SIGNAGE
1 L1.06 CONCRETE SEAT WALL
6 L1.07 CHAINLINK FENCE
THREE REMOVABLE BOLLARDS AT SERVICE DRIVE
RELOCATED FIRE HYDRANT
EXISTING TREE TO REMAIN (1)
HDR
PA
NEW FIRE HYDRANT
TW 157.23 HOLD LEVEL
CONCRETE BASE FOR ILLUMINATED CAOB SIGNAGE
BIG BELLY RECEPTACLE
SERVICE AREA
IRRIGATION CONTROLLER
5 REMOVABLE BOLLARDS
EXISTING FIRE HYDRANT TO REMAIN
10' PATH TO REMAIN
NEW ASPHALT PATH
SCREEN WALL SEE ARCH DWGS
ACADEMIC OFFICE ANNEX
3 L1.07 RELOCATED BOLLARD
101 INTERNATIONAL PROGRAMS
107 STUDENT DISABILITY SERVICES
113 STUDENT AFFAIRS ADMINISTRATION
EXISTING CONCRETE TO REMAIN
TW 157.59 HOLD LEVEL
3 L1.07 RELOCATED BOLLARD
6 L1.04 BIKE RACK
CAOB
ELE
MECHANICAL
TEL
NEW FIRE HYDRANT
2 L1.06 CONCRETE RETAINING WALL
SHEET L1.02 GROVE ENLARGEMENT
AREA TO RECEIVE CONCRETE SUBSLAB
D3 SEE DEDUCT ALTERNATE
SEAT WALL (SEE ARCH DWGS)
3 L1.05 CONCRETE TREE WELL
BENCH 1 L1.07
BIG BELLY RECEPTACLE 4 L1.07 TYP AT GROVE
TREE GRATE 2 L1.05
5 L1.07 NEW WEBS EMERGENCY PHONE
167 MERRITT WRITING PROGRAM
169 BOBCAT LAIR
KOLLIGIAN LIBRARY
EXISTING FIRE HYDRANT
EXISTING TREE TO REMAIN (8)
EXISTING LIGHTS TYPICAL TO REMAIN (4)
LAKE ROAD
Felt Joint 3,677 LF
Saw Cut Joint 6,075 LF
Tooled Contol Joint 2,419 L

Tile Tech Warnings®

Paving America one step at a time!

REVIEWED (see GENERAL CONDITIONS)

- ■ NO EXCEPTIONS TAKEN
- ☐ MAKE CORRECTIONS NOTED
- ☐ REVISE & RESUBMIT
- ☐ REJECTED

If noted NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED, fabrication may be undertaken. Review does not authorize changes to contract sum unless saved in duly executed Change Order. If noted REVISE & RESUBMIT or REJECTED, fabrication may not be undertaken. Resubmit corrected copies for re-review. Corrections shall be limited to items marked. Reviewing is only for general conformance with the design concept of the project and general compliance with information given in the Contract Documents. Contractor is responsible for confirmation and correlation of all dimensions at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; and for coordination of the work of all trades. Review of a specific item does not indicate review of an assembly of which the item is a component, nor shall it indicate that the item will perform it's intended function or as required by the Contract Documents. Distribution of documents by the Contractor shall constitute his approval.

swa

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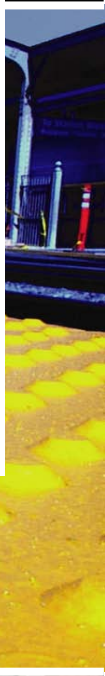
UNITED STATES OF AMERICA TEL. +1.415.332.5100

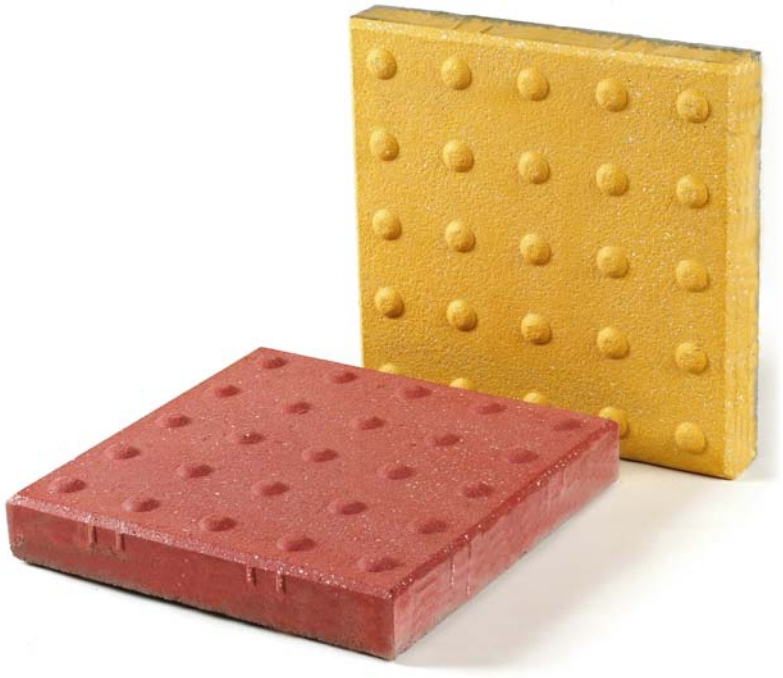
By: Rick Story Date: Jan 9, 2015

Provide sample for University's and architects review.
Color: Charcoal
Provide Grout sample/ color card for Section by the University.



MANUFACTURER OF DETECTABLE WARNING PAVERS AND TILES

Detectable Warning Pavers



5-Year Warranty

ADA PAVERS • STATE OF CALIFORNIA • TITLE 24 COMPLIANT

Manufactured in accordance with the requirements set forth in the American Disabilities Act (ADA), Tile Tech Detectable Warning Paver is fabricated with a non-slip texture produced by shot blasting technique . Projects will benefit from its high 8,000psi strength and ability to withstand snow removal and freeze thaw conditions. Typical installations include railway platforms, handicap ramps and curb and grade changes.

Detectable Warning Pavers are stocked in the four standard colors shown bellow. Custom colors & sizes are available on special request when quantities permit. Detectable Warning Paver can be sand set, mortar set or thinset. Contact Tile Tech Pavers for more information.

Freeze/ Thaw Resistance Due to its high 8,000psi density, resulting in less than 1% loss of dry weight in 50 c- Color as Specified rning Pavers can withstand extreme weather conditions and are even installed in Alaska!

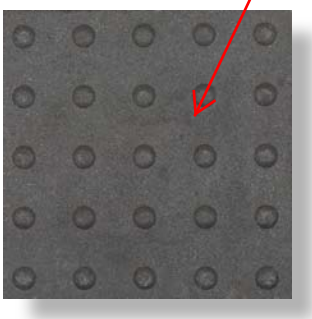
ADAAG/PROW/CA Title 24 Compliant Dome spacing and geometry strictly compliant with all applicable codes. Architectural finish integrates well with adjacent site works.

Superior Color Stability Pigment is uniformly distributed throughout the thickness of our products. Long term color stability without the need for secondary coatings.

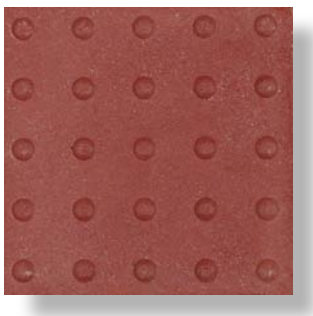
5-Year Warranty

Superior Wear Resistance Wear resistance properties far superior to that achieved with composite based materials of any type.

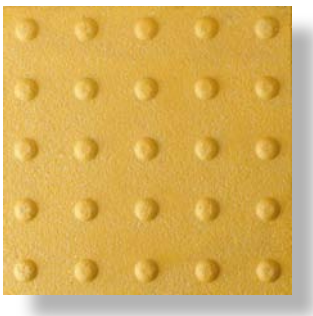
Standard Colors



Charcoal



Red



Yellow

Natural

Please Note: Colors & finishes shown are only a representation. Please request samples for approval.

REVIEWED (see GENERAL CONDITIONS)

- ■ NO EXCEPTIONS TAKEN
- ☐ MAKE CORRECTIONS NOTED
- ☐ REVISE & RESUBMIT
- ☐ REJECTED

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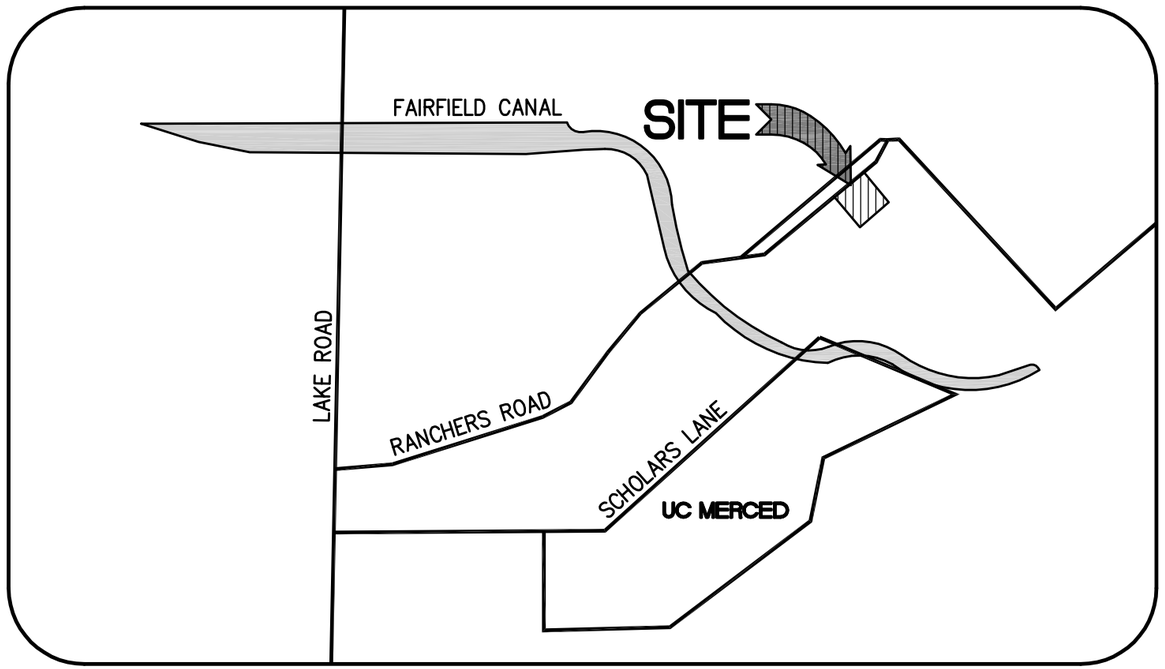
By: Rick Story Date: Feb 4, 2015

SAmple Received 2/3/15. Sundt
Transmittal Ref # 0530.
Sample: NET.
SWA 2/4/15

UC MERCED COB2 DRAINAGE IMPROVEMENTS

MERCED, CALIFORNIA



VICINITY MAP

N.T.S.

811 Know what's **below.** **Call** before you dig.

BACKGROUND FILE DISCLAIMER

THE BACKGROUND FILES SHOWN IN THIS PLAN SET ARE FROM THE UC MERCED CLASSROOM AND ACADEMIC OFFICE BUILDING PROJECT DRAWINGS AND HAVE NOT BEEN FIELD VERIFIED. ANY DISCREPANCIES FOUND IN THE FIELD SHOULD BE COMMUNICATED BACK TO THE ENGINEER.

PROJECT DESCRIPTION

THE DRAINAGE IMPROVEMENTS PROJECT INCLUDES NEW CONCRETE PAVEMENT AND A TRENCH DRAIN, WITH A CONNECTION TO EXISTING STORM DRAINAGE INFRASTRUCTURE, AT THE EXISTING COB2 BUILDING AT THE UC MERCED CAMPUS.

SHEET INDEX

ADDENDUM 1 6/13/2019

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DATE: 05-06-19
SCALE: N.T.S.
DRAWN BY: GL
APPROVED BY: SMU
DRAWING NO.: 612049

UNIVERSITY OF CALIFORNIA MERCED
MERCED CALIFORNIA

COVER SHEET

SHEET C-0 OF 4 SHEETS

CONSTRUCTION NOTES

1. ALL OFF-SITE CONSTRUCTION MATERIAL AND METHODS SHALL COMPLY WITH THE LATEST CALTRANS STANDARD SPECIFICATIONS.

2. CONTRACTOR SHALL LEAVE AN EMERGENCY PHONE NUMBER WITH THE POLICE AND FIRE DEPARTMENTS.

3. CONTRACTOR SHALL POST ON THE SITE, EMERGENCY TELEPHONE NUMBERS FOR PUBLIC WORKS, AMBULANCE, POLICE, AND FIRE DEPARTMENTS.

4. CONTRACTOR SHALL NOTIFY ALL PUBLIC OR PRIVATE UTILITY OWNERS 48 HOURS PRIOR TO COMMENCEMENT OF WORK ADJACENT TO THE UTILITY UNLESS AN EXCAVATION PERMIT SPECIFIES OTHERWISE.

5. UTILITIES AND UNDERGROUND FACILITIES INDICATED ARE FOR INFORMATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND DEPTH WITH THE APPROPRIATE AGENCIES. NEITHER THE OWNER NOR THE CITY NOR THE DESIGN PROFESSIONAL ASSUMES RESPONSIBILITY THAT THE UTILITIES AND UNDERGROUND FACILITIES INDICATED WILL BE THE UTILITIES AND UNDERGROUND FACILITIES ENCOUNTERED.

6. CONTRACTOR TO CONTACT UNDERGROUND SERVICE ALERT U.S.A. 800-227-2600 FORTY-EIGHT (48) HOURS PRIOR TO BEGINNING WORK TO HAVE THE LOCATION OF EXISTING UNDERGROUND UTILITIES MARKED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY, LOCATE, AND PROTECT ALL UNDERGROUND FACILITIES.

7. THE CONTRACTOR SHALL HIRE A STREET CLEANING CONTRACTOR TO CLEAN UP DIRT AND DEBRIS FROM CITY STREETS THAT ARE ATTRIBUTABLE TO THE DEVELOPMENT'S CONSTRUCTION ACTIVITIES.

8. ALL GRADING SHALL BE PERFORMED IN SUCH A MANNER AS TO COMPLY WITH THE STANDARDS ESTABLISHED BY THE AIR QUALITY MAINTENANCE DISTRICT FOR AIRBORNE PARTICULATES (DUST).

9. ALL GRADING SHALL CONFORM TO APPROVED SPECIFICATIONS PRESENTED HEREON OR ATTACHED HERETO. ALL GRADING WORK SHALL BE OBSERVED AND APPROVED BY THE SOILS ENGINEER. THE SOILS ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS BEFORE BEGINNING ANY GRADING. UNOBSERVED AND UNAPPROVED GRADING WORK SHALL BE REMOVED AND REDONE AT THE CONTRACTORS EXPENSE.

10. ALL MATERIALS, REQUIRED FOR THE COMPLETE EXECUTION OF THE PROJECT, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.

11. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGMEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY DURING THE CONSTRUCTION PERIOD.

12. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR OR REPLACE ANY EXISTING IMPROVEMENTS OF UNDERGROUND FACILITIES DAMAGED DURING THE CONSTRUCTION PERIOD.

13. THE CONTRACTOR SHALL HAVE A SUPERINTENDENT OR REPRESENTATIVE ON SITE AT ALL TIMES DURING CONSTRUCTION.

14. STORAGE OF CONSTRUCTION MATERIAL AND EQUIPMENT ON CITY STREETS WILL NOT BE PERMITTED.

15. CONSTRUCTION EQUIPMENT SHALL BE PROPERLY MUFFLED. UNNECESSARY IDLING OF GRADING CONSTRUCTION EQUIPMENT IS PROHIBITED.

16. CONSTRUCTION EQUIPMENT, TOOLS, ETC. SHALL NOT BE CLEANED OR RINSED INTO A STREET, GUTTER OR STORM DRAIN.

17. A CONTAINED AND COVERED AREA ON-SITE SHALL BE USED FOR STORAGE OF CEMENT BAGS, PAINTS, FLAMMABLE, OILS, FERTILIZERS, PESTICIDES, OR ANY OTHER MATERIALS THAT HAVE POTENTIAL FOR BEING DISCHARGED TO THE STORM DRAIN SYSTEM BY WIND OR IN THE EVENT OF A MATERIAL SPILL, AS REQUIRED.

18. ALL CONSTRUCTION DEBRIS SHALL BE GATHERED ON A REGULAR BASIS AND PLACED IN A DUMPSTER WHICH IS EMPTIED OR REMOVED WEEKLY. WHEN FEASIBLE, TARPS SHALL BE USED ON THE GROUND TO COLLECT FALLEN DEBRIS OR SPLATTERS THAT COULD CONTRIBUTE TO STORMWATER POLLUTION.

19. ANY TEMPORARY ON-SITE CONSTRUCTION PILES SHALL BE SECURELY COVERED WITH A TARP OR OTHER DEVICE TO CONTAIN DEBRIS.

20. CONCRETE TRUCKS AND CONCRETE FINISHING OPERATIONS SHALL NOT DISCHARGE WASH WATER INTO THE STREET GUTTERS OR DRAINS.

ADA NOTES

1. ALL SITE WORK SHALL BE IN CONFORMANCE WITH TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS AND WITH THE AMERICANS WITH DISABILITIES ACT.

2. CURB RAMPS SHALL NOT EXCEED A SLOPE OF 1:12 (8.33%).

3. PATH OF TRAVEL TO BUILDINGS SHALL NOT EXCEED A SLOPE OF 1:20 (5%) UNLESS RAILINGS ARE SHOWN ON ARCHITECTURAL PLANS, IN WHICH CASE THE SLOPE SHALL NOT EXCEED 1:12 (8.33%).

4. A 2% MAXIMUM SLOPE LANDING SHALL BE PROVIDED AT PRIMARY ENTRANCES TO BUILDINGS, THE LANDINGS SHALL HAVE A MINIMUM WIDTH OF 60" AND A MINIMUM DEPTH OF 60" WHEN THE DOOR OPENS INTO THE BUILDING, AND 42" PLUS THE WIDTH OF THE DOOR WHEN THE DOOR OPEN ONTO THE LANDING.

5. RAMPS ARE DEFINED AS ANY WALKWAY BETWEEN SLOPES OF 1:20 (5%) AND 1:12 (8.33%), AND SHALL HAVE A MINIMUM WIDTH OF 48" AND A MAXIMUM CROSS-SLOPE OF 2%. RAMPS EXCEEDING 2'-6" VERTICAL SHALL HAVE INTERMEDIATE (2% MAXIMUM SLOPE) LANDINGS HAVING A MINIMUM LENGTH IN THE DIRECTION OF TRAVEL OF 60". BOTTOM LANDINGS AT CHANGES IN RAMP DIRECTION SHALL HAVE A MINIMUM LENGTH OF 72".

6. MAXIMUM CROSS SLOPE ON ANY SIDEWALK OR RAMP SHALL BE 2%. MAXIMUM. MAXIMUM SLOPE WITHIN PARKING STALLS DESIGNATED AS ACCESSIBLE PARKING SHALL BE 2% IN ANY DIRECTION.

7. ALL SIDEWALK SHALL HAVE A 4' MINIMUM CLEAR WIDTH FOR ACCESSIBLE CONFORMANCE.

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NOTES
ADDENDUM 1 6/13/2019

SHEET C-1 OF 4 SHEETS

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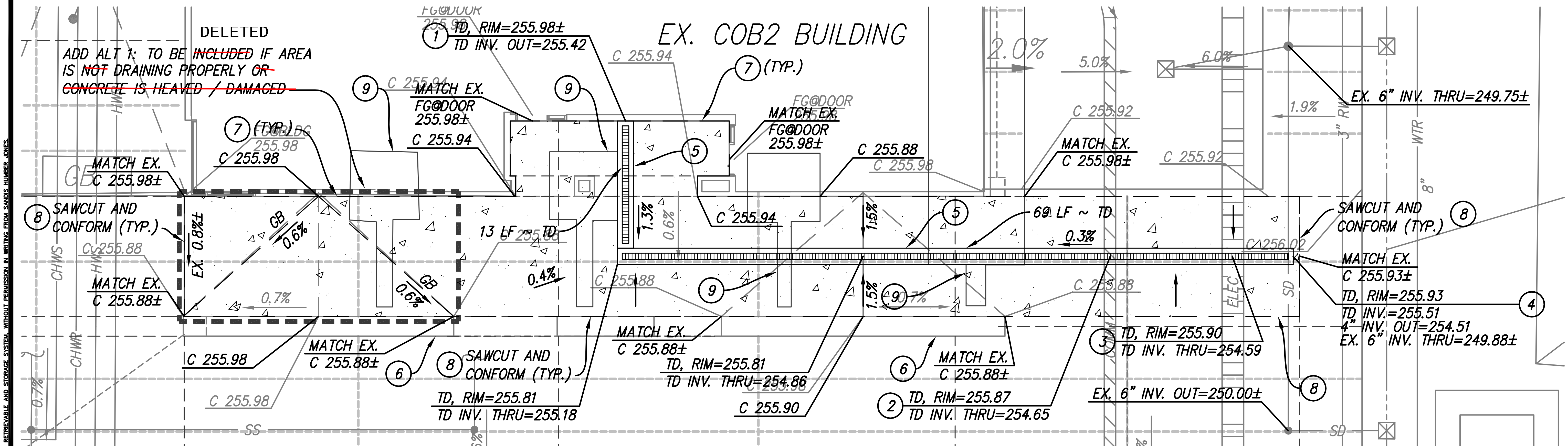

GRAPHIC SCALE

0 2 4 6 8 10

1 inch = 10 ft.

LEGEND

SD	EXISTING STORM DRAIN LINE
WTR	EXISTING WATER LINE
RW	EXISTING RECLAIMED WATER LINE
CHWR / CHWS	EXISTING CHILLED WATER SUPPLY/RETURN LINE
HWR / HWS	EXISTING HOT WATER SUPPLY/RETURN LINE
ELEC	EXISTING ELECTRICAL LINE
COMM	EXISTING COMMUNICATIONS LINE
	PROPOSED TRENCH DRAIN
— — —	SAWCUT LINE
	DEMOLISH AND REMOVE EXISTING CONCRETE AND REPLACE WITH LIGHT-DUTY CONCRETE PAVEMENT. SEE DETAIL 1, SHEET C-3.

SHEET NOTES:

1. APPROXIMATE LOCATION OF EXISTING ROOF OVERFLOW DRAIN. PROPOSED TRENCH DRAIN SHALL BE ALIGNED WITH OVERFLOWN DRAIN.
2. UTILITY CROSSING. TRENCH DRAIN OVER COMMUNICATION LINE.
3. UTILITY CROSSING. TRENCH DRAIN OVER ELECTRICAL LINE.
4. CONNECT TRENCH DRAIN TO EXISTING STORM DRAIN. SEE DETAIL 4, SHEET C-3.
5. PREFABRICATED TRENCH DRAIN. SEE DETAIL 3, SHEET C-3.
6. EX. WALL AND FOUNDATION TO BE PROTECTED.
7. CONCRETE EDGE AT BUILDING FACE. SEE DETAIL 2, SHEET C-3.
8. REMOVE AND REPLACE CONCRETE TO NEAREST SCORE JOINT.
9. PROTECT EX. GRADE BEAMS AND FOUNDATIONS (TYP.) DEPTH FROM FINISHED GRADE TO TOP OF GRADE BEAM OR FOUNDATION = -2.0'(±).

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CIVIL IMPROVEMENTS PLAN

SHEET C-2 OF 4 SHEETS

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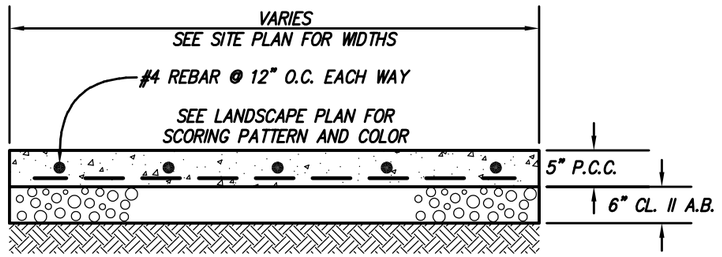
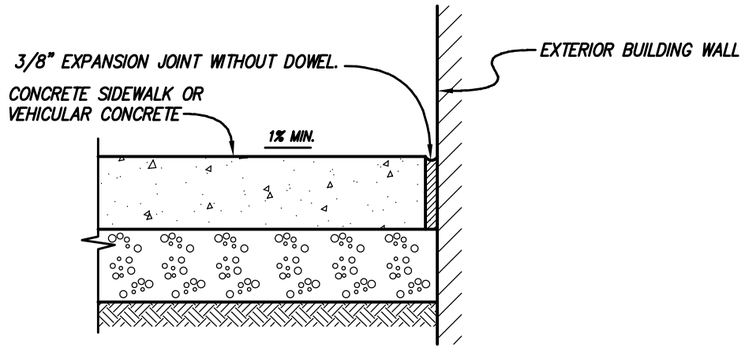


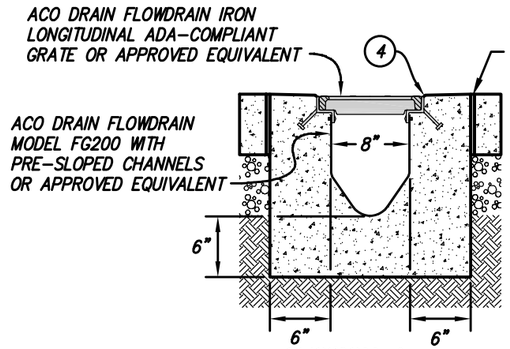
NOTE:
CONCRETE SHALL BE CALTRANS MINOR CONCRETE PER CALTRANS STANDARD SPECIFICATION SECTION 90-2.

LIGHT-DUTY CONCRETE SECTION 1
N.T.S.



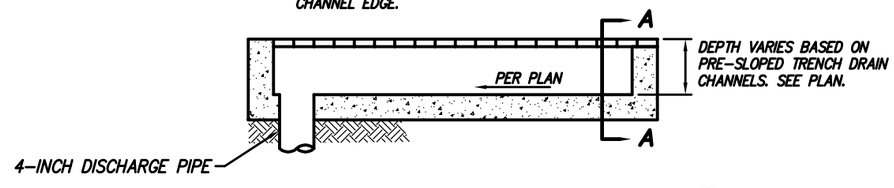
CONCRETE EDGE @ BLDG FACE

CONCRETE EDGE DETAIL 2
N.T.S.

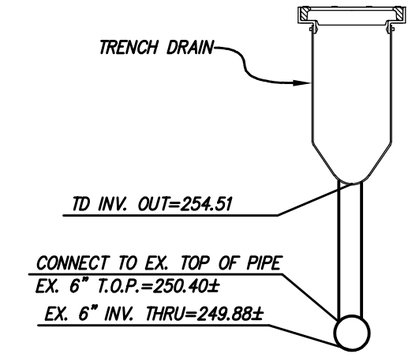


SECTION A-A

1. TRENCH DRAIN DEPTH VARIES, SEE PLAN.
2. TRENCH DRAIN INVERT LONGITUDINAL SLOPE SHALL BE 0.50% MINIMUM.
3. CONCRETE SHALL BE CALTRANS MINOR CONCRETE WITH A MINIMUM CONCRETE STRENGTH OF 3000 PSI. THE CONCRETE SHALL BE VIBRATED TO ELIMINATE AIR POCKETS.
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" ABOVE THE TOP OF THE CHANNEL EDGE.



TRENCH DRAIN DETAIL 3
N.T.S.



TRENCH DRAIN TO STORM DRAIN CONNECTION DETAIL 4
N.T.S.

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CIVIL CONSTRUCTION DETAILS
ADDENDUM 1 6/13/2019

SHEET C-3 OF 4 SHEETS

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