



TRANSMITTAL

DATE June 14, 2011 PROJECT Richey Blvd Fuel Tanks
TO: M3
ATTN: Armando Navarro FROM: Dave O'Hern

PLEASE FIND ATTACHED:

Table with 3 columns: NUMBER, DATE, DESCRIPTION. Row 1: 1, [blank], Concrete Submittal

MESSAGE:

Armando,
I cannot get the email to go through. The file is too big.
I will send the rebar shop drawings by email.
[Signature]

18 pages

MILLER O'HERN CONSTRUCTION
2200 SOUTH AVENIDA LOS REYES
TUCSON, ARIZONA 85748
PHONE 520-385-8470 FAX 520-485-5139

Stamp area containing Miller O'Hern logo, address (2051 W Sunset Road), contact info, and a review checklist with 'REVIEWED' checked.

PAGE 2...NO. 367...JULY 2004

**Application Tools**

Manual Sprayer



Paint Roller

**APPLICATION**

**Preparation...**Application equipment must be clean and free of any previously used materials.

**Mixing...**For optimum performance, gentle mixing or agitation is recommended. **CAUTION: TO AVOID FOAMING, DO NOT MIX EXCESSIVELY.**

**Application Method...New Concrete:** Apply MED-CURE as soon as surface water has disappeared and the surface is dry to the touch or hard enough to walk on. Apply one even coat with a pressure hand sprayer or paint roller.

**Existing (Old) Concrete:** Clean surface thoroughly with a trisodium phosphate solution and rinse thoroughly. Apply MED-CURE after the surface has dried. **NOTE:** Keep heavy traffic off surface for 24-48 hours after applying MED-CURE.

**Clean-up...**Application equipment may be cleaned easily with soap and water while still wet.

**PRECAUTIONS**

**DO NOT DILUTE.** Do not apply if the temperature of the concrete is less than 40°F (4°C). **KEEP FROM FREEZING.** If MED-CURE is accidentally sprayed or spilled on glass, brick, aluminum, painted surfaces, etc., flush immediately with water. Do not over-apply.

**HEALTH HAZARDS**

This product will not support combustion. Read and follow application information and use in accordance with the Health and Safety Information shown on the label. Refer to Material Safety Data Sheet for complete health and safety information.

**TO VERIFY MOST RECENT TECHNICAL DATA SHEET IS BEING USED, VISIT OUR WEBSITE: [www.wrmeadows.com](http://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.

# EUCOBAR

## EVAPORATION RETARDANT

2751.2.4

MISCELLANEOUS

EUCOBAR

Master Format #: 03 35 00

### DESCRIPTION

**EUCOBAR** is designed to be used as an evaporation retardant on concrete surfaces of all types. When sprayed over fresh concrete, **EUCOBAR** forms a thin, continuous film which prevents rapid moisture loss from the concrete surface. It is easy to use requiring only the addition of water before spray application. **EUCOBAR** is especially effective when concreting operations must be performed in direct sun, wind, high temperatures, or low relative humidity.

### PRIMARY APPLICATIONS

- Floors
- Pavements
- Plain concrete toppings
- Vertical/overhead repairs
- Dry shake floors including all SURFLEX and EUCO-PLATE formulations
- Specialty iron toppings
- Parking decks and ramps

### FEATURES/BENEFITS

- Holds in surface moisture on concrete floors, slabs, and repairs
- Helps prevent plastic shrinkage cracking
- Easy and economical to use
- Helps eliminate crusting caused by loss of surface moisture
- Useful as a finishing aid during troweling operations
- Water based for total compatibility with fresh concrete
- Excellent for both interior and exterior concrete projects
- Will not effect adhesion of curing compound or other treatments

### TECHNICAL INFORMATION

**EUCOBAR** is a water based polymer concentrate that is readily dilutable in water.

Evaporation rate is a function of relative humidity, concrete temperature, air temperature and wind velocity. Plastic shrinkage cracking is a strong possibility when the rate of evaporation exceeds 0.2 lb/ft<sup>2</sup>/hr (1.0 kg/m<sup>2</sup>/hr). The chart on the back of this page (Fig. 2.1.5 of ACI 305, Hot Weather Concreting) is useful in determining the evaporation rate under a given set of jobsite conditions. Use **EUCOBAR** when the above limit is exceeded.

**Appearance:** **EUCOBAR** is a free flowing pink liquid designed to be mixed with water. The use of **EUCOBAR** will not affect the color of concrete.

### PACKAGING

**EUCOBAR** is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails and 6/1 gal (3.8 L) units per case.

### SHELF LIFE

2 years in original, unopened package.

### COVERAGE

**Dilution Rate:** 9:1 (Water:**EUCOBAR**)

**EUCOBAR** (after dilution) will cover approximately 200 to 400 ft<sup>2</sup>/gal (5 to 10 m<sup>2</sup>/L). Coverage will vary depending on concrete texture and wind conditions. For estimating purposes, 1 gal (3.8 L) of **EUCOBAR** concentrate will treat 2000 to 4000 ft<sup>2</sup> (186 to 372 m<sup>2</sup>) of concrete surface area, but is highly dependent upon ambient conditions.

MILLER O'HERN CONSTRUCTION has reviewed this submittal and believes it to be in substantial compliance with the contract documents.

By: [Signature]

Date: 6-14-11

Miller O'Hern Construction . LLC 520-395-9479

An **RPM** Company



**The Euclid Chemical Company**

19218 Redwood Rd. • Cleveland, OH 44110  
Phone: [216] 531-9222 • Toll-free: [800] 321-7628 • Fax: [216] 531-9596  
www.euclidchemical.com



**DIRECTIONS FOR USE**

**Surface Preparation:** EUCOBAR is applied directly to the surface of fresh concrete. No surface preparation is necessary.

**Mixing:** EUCOBAR is supplied as a concentrate and must be diluted with water at a 9:1 (water:EUCOBAR) ratio. Determine capacity of sprayer and divide by 10. Add this amount of EUCOBAR to the sprayer canister followed by 9 times that amount of water. For example, if 1 quart (0.95 L) of EUCOBAR is added, dilute with 9 quarts (8.5 L) of water. Mix or shake until thoroughly blended.

**Placement:** Apply using a tank type, hand pump sprayer capable of spraying in a fine mist. Use a slotted tip for the best spray. Spray EUCOBAR over the fresh concrete surface as soon as possible after floating. A pink, translucent sheen will appear as the surface is treated. On extreme drying conditions, additional applications may be given as needed. When used on floors with dry shake hardener applications, EUCOBAR may be used on the fresh concrete as well as between each shake application.

**Curing & Sealing:** Proper curing procedures are important to ensure the durability and quality of concrete. To prevent surface cracking, cure flatwork with a high solids curing compound, such as SUPER AQUA-CURE VOX or SUPER REZ-SEAL.

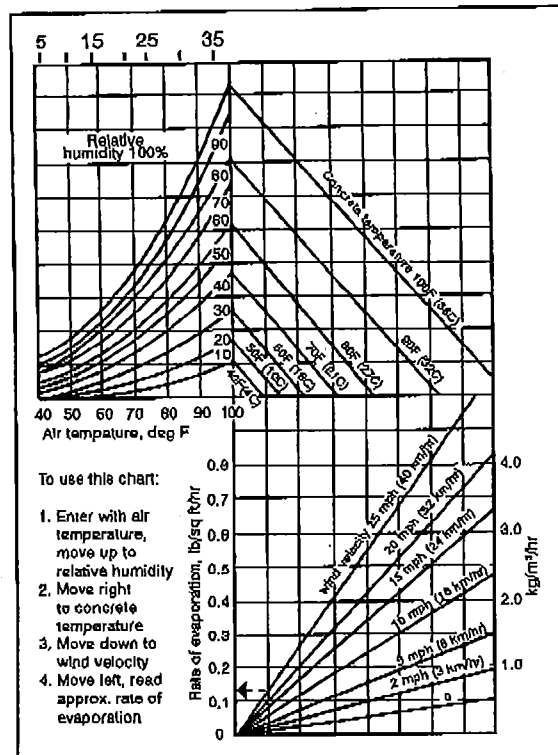


Fig. 2.1.5, ACI 305, Hot Weather Concreting

**CLEAN UP**

Clean spray equipment with soap and water.

**PRECAUTIONS/LIMITATIONS**

- Use with proper dilution rate.
- Do not use as a curing compound.
- Apply only as a fine spray.
- Do not allow to freeze.
- In all cases, consult the Material Safety Data Sheet before use.

Rev. 10.09

**WARRANTY:** The Euclid Chemical Company ("Euclid") solely and expressly warrants that its products shall be free from defects in materials and workmanship for one (1) year from the date of purchase. Unless authorized in writing by an officer of Euclid, no other representations or statements made by Euclid or its representatives, in writing or orally, shall alter this warranty. EUCLID MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR ORDINARY OR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES THE SAME. If any Euclid product fails to conform with this warranty, Euclid will replace the product at no cost to Buyer. Replacement of any product shall be the sole and exclusive remedy available and buyer shall have no claim for incidental or consequential damages. Any warranty claim must be made within one (1) year from the date of the claimed breach. Euclid does not authorize anyone on its behalf to make any written or oral statements which in any way alter Euclid's installation information or instructions in its product literature or on its packaging labels. Any installation of Euclid products which fails to conform with such installation information or instructions shall void this warranty. Product demonstrations, if any, are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. Buyer shall be solely responsible for determining the suitability of Euclid's products for the Buyer's intended purposes.

Received Time: Jun. 14, 2011 6:52PM No. 1669



**Calportland**

6601 N. Casa Grande Hwy,  
Tucson, AZ 85742  
Office: (520) 744-3222  
Fax: (520) 744-4394

2751.2.3,  
2751.2.3.A  
2751.2.3.B  
2751.2.3.C  
2751.2.3.E  
2751.2.6.A

Date: 6/6/2011  
Rons Concrete

RE: Richey Blvd. Fuel Tank Replacement, 3355 N. Dodge Blvd.

Submittal No. 7442

Gentlemen:

Calportland is pleased to submit the attached concrete mix proportions for the referenced project. These concrete mixes have been proportioned in accordance with the requirements of the American Concrete Institute (ACI) sections 318, 301 or 211, applicable practices, project specification or by customer request.

Mix Code	Description
130014	3000 PSI N/Ash
130058	3000 PSI N/AshFlowable

*When placing orders for this project, please order by product mix code number.*

Should the Purchaser choose not to purchase temperature control measures, the Puchaser shall assume all liability for rejected concrete due to non-compliant concrete temperature.

Due to unexpected or unavoidable shortages in the supply of raw materials, Calportland shall not be held liable for consequential damages, delay damages, or other claims on account of an inability to fulfill concrete orders.

All samples and testing of samples for acceptance shall be conducted at the point of discharge from the concrete delivery truck.

Calportland warrants that the concrete as delivered to this project will meet or exceed the design strength specified on the delivery ticket when evaluated in accordance with ACI-318, ACI-310, and ASTM C-94, latest revision. The measured slump must not exceed the design slump, and the concrete must be tested in strict accordance with the provisions of ASTM standards C-172, C-143, C-31, C-39 and C-617, C-231, C-173, C-138, C-1019, C-78, C-567, C-1064, latest revision. ✓

The Arizona Rock Products Association certifies Calportland batching facilities and delivery equipment. Concrete will be delivered as per the requirements of ASTM C-94. ✓

*In accordance with ASTM C-94, please copy our office with all test results obtained on this concrete by independent testing laboratories.*

MILLER O'HERN CONSTRUCTION has reviewed this submittal and believes it to be in substantial compliance with the contract documents.

By: [Signature]

Date: 6-14-11

Miller O'Hern Construction . LLC 520-393-9479

Respectfully submitted,  
Calportland-

[Signature]

Tom Romero  
Quality Control Manager



**Calportland**

6601 N. Casa Grande Hwy.  
Tucson, AZ 85742  
Office: (520) 744-3222  
Fax: (520) 744-4394

Date Issued: 6/6/2011

Customer: Rons Concrete

Plant No.: 111R / 770a Orange Grove

Project: Richey Blvd. Fuel Tank Replacement, 3355 N. Dodge Blvd.

Submission No. 7442

*Mix Code must be used when ordering concrete.*

130014		3000 PSI N/Ash					
Material	Source	Description	ASTM	Spec. Gravity	Volume(CF)	oz.	Weight (lb)
Coarse Aggregate	CalPortland CM0039	Size No.57	C 33 ✓	2.59	8.36		1,352
Coarse Aggregate	CalPortland CM0039	3/8" Rock OG	C 33	2.58	2.10		339
Fine Aggregate	CalPortland CM0039	Concrete Sand	C 33	2.58	8.76		1,411
Type II-V Cement	CalPortland	APC / CalPortland	C 150	3.15	2.44		480
Mid Range Water Reducer	Grace	Daracem 55		1.00	0.00	20.00	
Potable Water	City	Water		1.00	4.93		308
Air					0.41		
					27.00	<b>TOTAL</b>	<b>3,890</b>
Specified F'c :	3,000	PSI					
Specified Slump:	3.00 To 5.00	in.					
Specified Air:		%					
Designed Air:	1.5	%					
				Designed Unit Weight:		144.1	lbs./cu.ft.
				Designed W/C + P Ratio:		0.64	
				Designed Volume:		27.00	cu.ft.

**NOTES:**

Calportland has no knowledge or authority regarding where this mix is to be placed. Calportland has not been requested to investigate, nor has it been provided with information concerning the soil, subsurface or other environmental conditions at the project site. Therefore it is the responsibility of the project architect/engineer, and or contractor/customer to insure that the above mix parameters of compressive strength, water cement ratio, cement content, and air content, are appropriate for the anticipated soil, subsurface and other environmental conditions at the project site. (ie. ACI-318 sections 4.1-4.3, and the local Building Codes).

This Submittal has been prepared by Calportland for the above client and project ONLY. It is not to be used or reproduced by the client or any third party for any other project without the written permission of Calportland. Calportland may use admixtures or procedures not listed above to control the mixture during Hot or Cold weather, for pumping, long hauls, or other special applications, unless restricted in writing by the client.

**COMMENTS:**

Date: 6/6/2011

Mix Name: 130014

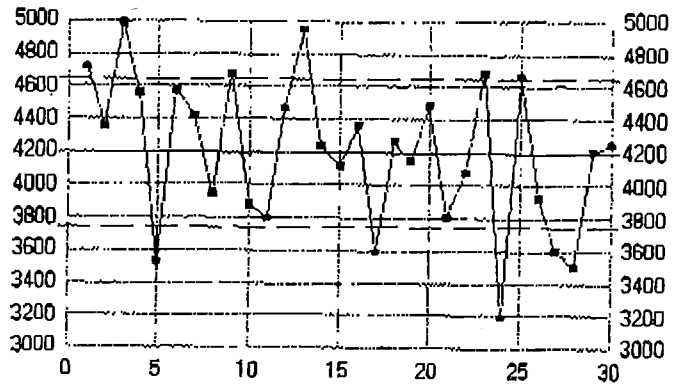
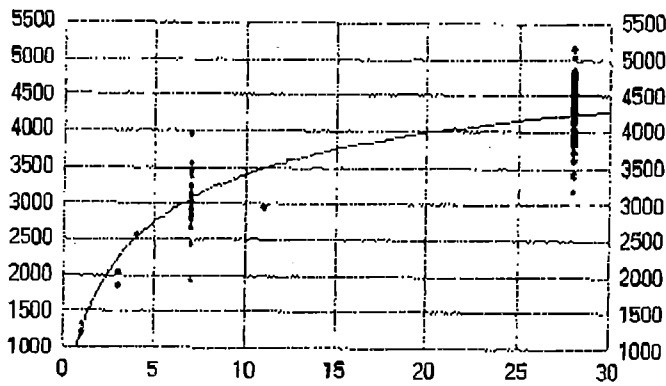
Units: US

PSI Strength and Strength Fit vs Maturity

PSI PSI

28 Day Strength vs Control Chart

PSI



Maturity Days

Sample Number

average

+/- 1 std dev

STRENGTH SUMMARY, Compression

Either 4" x 8" Or 6" x 12"

No. Of Tests	Avg Slump	Avg Air	Avg 3 Day	Avg 7 Day	Avg 28 Day	Accept Age	Std Dev	ACI318 Req'd
30	4.88	.00	1910	3060	4200	28	460	3620

DETAILED STRENGTH, Compression

Either 4" x 8" Or 6" x 12"

Mix Number	Batch Number	Date	Plant	Slump	Air	Strengths 3 Day	7 Day	28 Day	Acc Age
130014	180008	1/21/2009	115R /	2.25			3460	4360	28
130014	179996	1/21/2009	117R /	4.50			3560	4730	28
130014	180208	1/24/2009	111R /	4.00			3420	4990	28
130014	180252	1/26/2009	111R /	5.25			3060	4560	28
130014	180356	1/27/2009	101R /	4.75			2450	3530	28
130014	180415	1/27/2009	101R /	4.00			3570	4580	28
130014	180578	1/29/2009	111R /	5.25			2680	4420	28
130014	180678	1/30/2009	115R /	5.00			2920	3950	28
130014	180858	2/3/2009	111R /	5.00			3210	4680	28
130014	180000	2/4/2009	101R /	4.50			2810	3880	28
130014	181022	2/4/2009	111R /	5.00			2990	3800	28
130014	181146	2/5/2009	111R /	4.75			3950	4950	28
130014	00000000	2/5/2009	117R /	5.00			3550	4470	28
130014	181249	2/6/2009	111R /	5.00				4240	28
130014	181941	2/16/2009	111R /	5.50			2760	4120	28
130014	182018	2/17/2009	117R /	4.75	1860	3320	4360		28
130014	182093	2/18/2009	101R /	4.50		3200	4270		28
130014	182098	2/18/2009	101R /	4.75		3030	4150		28
130014	182083	2/18/2009	101R /	5.00		1920	3600		28
130014	182381	2/19/2009	111R /	5.00		2990	4490		28
130014	184596	3/19/2009	115R /	6.00		2710	3810		28

Mix Number	DETAILED STRENGTH, Compression			Either 4" x 8" Or 6" x 12"			Acc Age	
	Batch Number	Date	Plant	Slump Air	Strengths			
					3 Day	7 Day	28 Day	
130014	184675	3/20/2009	101R /	5.50			4080	28
130014	185196	3/26/2009	111R /	4.75		3440	4690	28
130014	201101	10/27/2009	111R /	5.00	1850	2420	3190	28
130014	201328	10/29/2009	115R /	5.50		3240	4670	28
130014	201915	11/6/2009	117R /	6.00		2880	3920	28
130014	202076	11/10/2009	117R /	5.00	2030	2860	3600	28
130014	207205	1/14/2010	111R /	5.50		2850	3510	28
130014	208726	1/30/2010	111R /	4.25		3100	4200	28
130014	211900	3/1/2010	117R /	5.00		3420	4250	28



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Fax: (520) 744-4394

Date Issued: 6/6/2011

Plant No.: 111R / 770a Orange Grove

Customer: Rons Concrete

Project: Richey Blvd. Fuel Tank Replacement, 3355 N. Dodge Blvd.

Submittal No. 7442

*Mix Code must be used when ordering concrete.*

130058		3000 PSI N/AshFlowable					
Material	Source	Description	ASTM	Spec. Gravity	Volume(CF)	oz.	Weight (lb)
Coarse Aggregate	CalPortland CM0039	Size No.57	C 33	2.59	8.29		1,341
Coarse Aggregate	CalPortland CM0039	3/8" Rock OG	C 33	2.58	2.09		336
Fine Aggregate	CalPortland CM0039	Concrete Sand	C 33	2.58	8.69		1,399
Type II-V Cement	CalPortland	APC / CalPortland	C 150	3.15	2.59		510
Mid Range Water Reducer	Grace	Daracem 55		1.00	0.00		46.00
Type A Water Reducer	Grace	WRDA 64	C 494	1.00	0.00		10.00
Potable Water	City	Water		1.00	4.93		308
Air					0.41		
					27.00	TOTAL	3,894
Specified Fc :	3,000	PSI					
Specified Slump:	6.00 To 8.00	in.		Designed Unit Weight:		144.2	lbs./cu.ft.
Specified Air:		%		Designed W/C + P Ratio:		0.60	
Designed Air:	1.5	%		Designed Volume:		27.00	cu.ft.

**NOTES:**

CalPortland has no knowledge or authority regarding where this mix is to be placed. CalPortland has not been requested to investigate, nor has it been provided with information concerning the soil, subsurface or other environmental conditions at the project site. Therefore it is the responsibility of the project architect/engineer, and or contractor/customer to insure that the above mix parameters of compressive strength, water cement ratio, cement content, and air content, are appropriate for the anticipated soil, subsurface and other environmental conditions at the project site. (ie. ACI-318 sections 4.1-4.3, and the local Building Codes).

This Submittal has been prepared by CalPortland for the above client and project ONLY. It is not to be used or reproduced by the client or any third party for any other project without the written permission of CalPortland. CalPortland may use admixtures or procedures not listed above to control the mixture during Hot or Cold weather, for pumping, long hauls, or other special applications, unless restricted in writing by the client.

**COMMENTS:**

Date: 6/6/2011

Mix Name: 130058

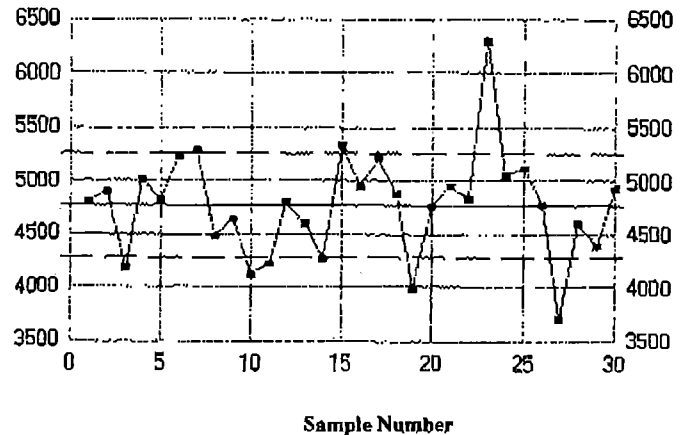
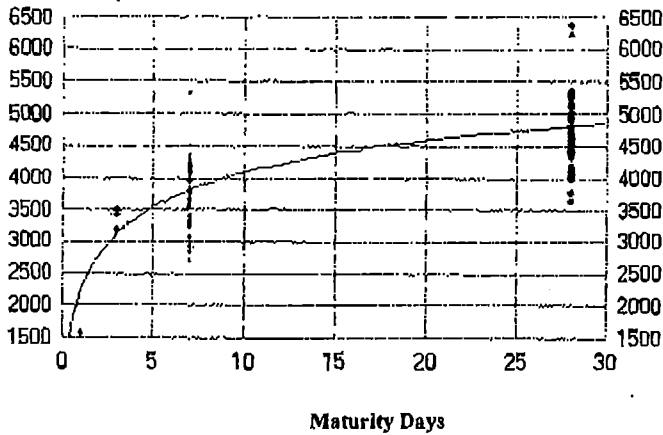
Units: US

PSI Strength and Strength Fit vs Maturity

PSI PSI

28 Day Strength vs Control Chart

PSI



STRENGTH SUMMARY, Compression Strengths

Either 4" x 8" Or 6" x 12"

No. Of Tests	Avg Slump	Avg Air	Avg 3 Day	Avg 7 Day	Avg 28 Day	Accept Age	Std Dev	ACT318 Req'd
30	5.77	.00	3370	3800	4770	28	500	3670

DETAILED STRENGTH, Compression

Either 4" x 8" Or 6" x 12"

Mix Number	Batch Number	Date	Plant	Strengths			Acc Age
				Slump	Air	3 Day 7 Day 28 Day	
130058	169346	10/9/2008	111R /	3.50		4140 4820	28
130058	170445	10/17/2008	111R /	6.00		4040 4900	28
130058	170650	10/21/2008	117R /	6.00		2840 4190	28
130058	171205	10/24/2008	115R /	5.50		3930 4820	28
130058	171125	10/24/2008	115R /	4.50		3980 5010	28
130058	172169	10/31/2008	111R /	7.00		4210 5240	28
130058	175070	11/26/2008	115R /	6.00		4190 5290	28
130058	175515	12/3/2008	111R /	7.00		3400 4650	28
130058	175500	12/3/2008	111R /	7.50		3270 4480	28
130058	175540	12/3/2008	111R /	8.00		3220 4120	28
130058	175955	12/5/2008	111R /	6.25		2930 4220	28
130058	176320	12/9/2008	111R /	6.00		3800 4600	28
130058	176262	12/9/2008	115R /	7.25		3320 4810	28
130058	176757	12/11/2008	111R /	5.00		3220 4280	28
130058	177274	12/16/2008	111R /	5.00		4190 5330	28
130058	179479	1/15/2009	117R /	5.50		4210 4960	28
130058	206196	1/6/2010	111R /			4490 5220	28
130058	207195	1/14/2010	111R /	4.25		4070 4880	28
130058	210796	2/17/2010	111R /	7.75		3060 3990	28
130058	211517	2/25/2010	117R /	6.75		3660 4770	28
130058	212042	3/2/2010	111R /	5.00		4140 4960	28

Mix Number	DETAILED STRENGTH, Compression			Either 4" x 8" Or 6" x 12"			Acc Age
	Batch Number	Date	Plant	Slump	Air Strengths	3 Day 7 Day 28 Day	
130058	212877	3/9/2010	111R /	4.00		4230 4840	28
130058	252282	2/2/2011	111R /	4.75		5310 6300	28
130058	255896	2/22/2011	111R /	5.00	3420	4110 5050	28
130058	255956	2/22/2011	111R /	5.50	3180	4060 4790	28
130058	255904	2/22/2011	111R /	4.75	3500	4270 5120	28
130058	256059	2/22/2011	117R /	7.50		2690 3710	28
130058	269527	4/20/2011	111R /	7.00		3650 4600	28
130058	271481	4/27/2011	111R /	4.00		3580 4400	28
130058	272034	4/29/2011	117R /	5.00		3780 4930	28



# ARIZONA PORTLAND CEMENT

A CalPortland Company  
Manufacturers of Arizona Cements  
PO Box 338

Rillito, AZ 85654-0338

Phone: (520) 682-2221

Fax: (520) 682-4345

## CERTIFICATE OF TEST

Arizona Portland Cement Type I / II Low Alkali

We certify that the test results below of the Low Alkali Cement shipped from the Rillito Plant meet or exceed all current ASTM C-150-07 requirements and specifications for both Type I and II Portland Cement. The following represents the monthly average chemical and physical data for the month of MARCH 2011.

CHEMICAL ANALYSIS (Oxides in %)	ASTM C-150-07 Limits	
	Minimum %	Maximum %
Silicon Dioxide, SiO <sub>2</sub>	19.74	
Alumina Oxide, Al <sub>2</sub> O <sub>3</sub>	4.11	6.0
Ferric Oxide, Fe <sub>2</sub> O <sub>3</sub>	3.35	6.0
Calcium Oxide, CaO	62.61	
Magnesium Oxide, MgO	4.63	6.0
Sulphur Trioxide, SO <sub>3</sub>	2.80	3.0
Loss on ignition	1.90	3.0
Insoluble residue	0.56	0.75
Alkali Equivalent (%Na <sub>2</sub> O+0.658% K <sub>2</sub> O)	0.30	0.60
Carbon Dioxide, CO <sub>2</sub>	0.82	
Limestone, CaCO <sub>3</sub> (In Cement)	1.97	5.0
Calcium Carbonate, CaCO <sub>3</sub> (In Limestone)	94.68	70
<b>POTENTIAL COMPOSITION (corrected)</b>		
Tricalcium Silicate, 3CaO.SiO <sub>2</sub> (C3S)	60	
Dicalcium Silicate, 2CaO.SiO <sub>2</sub> (C2S)	11	
Tricalcium Aluminate, 3CaO.Al <sub>2</sub> O <sub>3</sub> (C3A)	5	8
Tetracalcium Aluminoferrite 4CaO.(AlFe) <sub>2</sub> O <sub>3</sub> (C4AF)	10	
Sum of (C3S + 4.75*C3A)	85	100
<b>PHYSICAL ANALYSIS</b>		
Fineness, Blaine, Specific Surface (m <sup>2</sup> /kg) Single Sample	414	260 (m <sup>2</sup> /kg) 430 (m <sup>2</sup> /kg)
Average of Preceding 5 samples	416	280 (m <sup>2</sup> /kg) 420 (m <sup>2</sup> /kg)
Percent passing 325 mesh screen (45um)	99.5	
<b>COMPRESSIVE STRENGTH, C-109 p.s.i.</b>		
3-day	4150	1450 psi
7-day	5240	2470 psi
28-day (February Data)	6350	4060 psi
Autoclave expansion	0.15	(Optional) table 4
False Set	88	0.80
Vicat time of setting: Initial (minutes)	127	50 (Optional) table 4
Air Content of Mortar (volume %)	5.9	45 (minutes) 375 (minutes)
Water	27.2	12
Heat of Hydration (cal/g) (August Data)	88	

Remarks: Apparatus and methods in use in this laboratory have been checked by the National Institute of Standards and Technology.  
Major oxides are analyzed by X-ray Fluorescence Spectrometry.

*John Bartolucci*

John A. Bartolucci, Q.C. Superintendent

# Concrete

P R O D U C T I N F O R M A T I O N

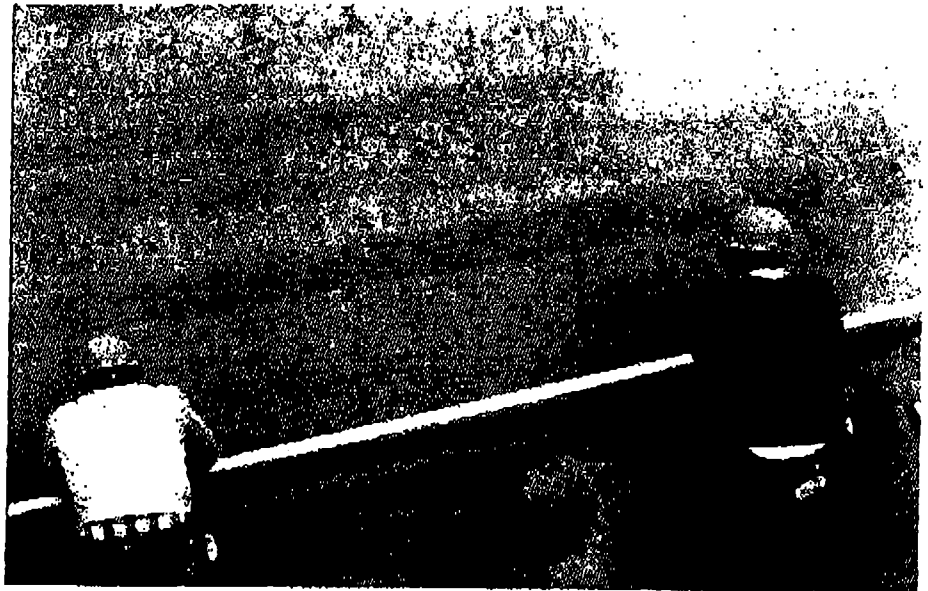
## Daracem® 55

Mid-Range Water-Reducing Admixture ASTM C494, Types A and F

### Description

Daracem® 55 is a mid-range water reducer specifically formulated to produce concretes with dramatically enhanced finishing characteristics and normal setting times. Effective through a wide addition rate range, Daracem 55 combines the benefits of normal and high range water reducers allowing for the ultimate control of the concretes placing and finishing properties.

Daracem 55 is an aqueous solution of complex organic compounds, each of which contributes uniquely to the concretes final properties. It contains both patented dispersing and patented finishability agents that provide performance superior to conventional water-reducing products. Daracem 55 is also formulated with a catalyst which promotes more complete hydration of portland cement to assure superior strength performance. It is manufactured under rigid controls which provide uniform, predictable performance. Daracem 55 contains no calcium chloride. Daracem 55 is supplied as a dark brown, low viscosity liquid, weighs approximately 1.28 kg/L (10.7 lbs/gal) and meets the requirements of ASTM C494, Types A and F.



### Uses

Daracem 55 produces a concrete with lower water content, improved placement properties, and enhanced finishability. It yields a less permeable and more durable concrete. Daracem 55 is used in ready mix, job site, and concrete paving plants for normal and lightweight concrete, in block and precast. It imparts a "slickness" to the surface of the concrete making it most appropriate for concrete flatwork as well as slip form work.

Daracem 55 is also particularly effective in lean or fly ash and slag compensated mixes.

### Advantages

Daracem 55 offers significant advantages over conventional water reducers. Laboratory and field work has consistently demonstrated:

- **Ultimate Workability and Finishability**  
The exceptional water-reducing capabilities allow for concrete production at higher slumps

MILLER O'HERN CONSTRUCTION has reviewed this submittal and believes it to be in substantial compliance with the contract documents.

By: D. J. O'Her

Date: 6.14.11

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Construction Products

with better water retention and internal cohesiveness, providing a less "sticky" concrete with improved placement properties. Formulated with proven finishing enhancing components, Daracem 55 controls bleeding while bringing the mortar to the surface. Finishers have stated that the concrete has improved trowelability. The influence of Daracem 55 on the finishability of lean mixes has been particularly noticeable. Floating and troweling, by machine or by hand, easily imparts a smooth, close tolerance surface with less machine time and labor.

- **Neutral Setting Times**  
Formulated with a set control agent, Daracem 55 provides normal setting characteristics throughout its addition rate range. This allows for increased water reduction and increased slump without significantly extended setting times. It also allows the flexibility to vary addition based on specific job and weather requirements.
- **Superior Strength Performance**  
The water reduction properties, up to 12%, and dispersion characteristics allow the production of lower water to cement ratio concretes and more complete hydration. The combined effect is increased compressive and flexural strengths at all ages.

#### Addition Rate

The addition rate range of Daracem 55 is 190 to 590 mL/100 kg (3 to 9 fl oz/100 lbs) of cement. Typically excellent results are achieved between 325 to 460 mL/100 kg (5 to 7 fl oz/100 lbs) of cement. Optimum addition depends on the other concrete mixture components, job conditions, and desired performance characteristics.

#### Compatibility with Other Admixtures

Daracem 55 is compatible with all air-entraining admixtures such as Darex® II AEA and Daravair®. Due to a synergistic effect of Daracem 55, the amount of air-entraining may be reduced by 25 to 50% when added to concrete with Daracem 55. By combining the separate effects of air entrainment and dispersion, the water requirement of concrete may be reduced up to 15%. Each admixture should be added to the concrete separately.

#### Dispensing Equipment

A complete line of accurate, automatic dispensing equipment is available. Daracem 55 may be added to the concrete mix on the sand or in the batch water.

#### Packaging

Daracem 55 is available in bulk, delivered in metered tank trucks, and 210 L (55 gal) drums. Daracem 55 contains no flammable ingredients. It will freeze at approximately -9°C (15°F) but will return to full strength after thawing and thorough mechanical agitation.

#### Architects' Specifications

Concrete shall be designed in accordance with Standard Recommended Practice for Selecting Proportions for Concrete, ACI 211.

The water-reducing admixture shall be a mid-range water-reducing admixture such as Daracem 55 as manufactured by Grace Construction Products, or its equivalent. The admixture shall not contain calcium chloride. It meets the requirements of Specification for Chemical Admixtures for Concrete ASTM Designation C494 as a Type A and Type F admixture.

Certification of compliance shall be made available on request. The admixture shall be considered part of the total mixing water.

The admixture shall be delivered as a ready-to-use liquid product and shall require no mixing at the batching plant or job site.

North American Customer Service: 1-877-4AD-MIXI (1-877-423-6491)



Visit our web site at: [www.graceconstruction.com](http://www.graceconstruction.com)

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W. R. Grace & Co.-Conn. 62 Whittemore Avenue Cambridge, MA 02140

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# Concrete

## PRODUCT INFORMATION

# WRDA<sup>®</sup> 64

Water-Reducing Admixture ASTM C 494, Type A and Type D

### Description

WRDA<sup>®</sup> 64 is a polymer based aqueous solution of complex organic compounds. WRDA 64 is a ready-to-use low viscosity liquid which is factory pre-mixed in exact proportions to minimize handling, eliminate mistakes and guesswork.

WRDA 64 contains no calcium chloride and weighs approximately 1.21 kg/L (10.1 lb/gal).

### Uses

WRDA 64 produces a concrete with lower water content (typically 8 to 10% reduction), greater plasticity and higher strength. It is used in ready-mix plants, block and concrete product plants, in lightweight and prestressed work ... wherever concrete is produced.

### Advantages

WRDA 64 offers significant advantages over single component water reducers. Water reduction and setting times are more consistent due to the polymer components. WRDA 64 also performs especially well in concrete containing fly ash and other pozzolans.



The use of WRDA 64 produces a plastic concrete that is more workable, easier to place and more finishable than plain or other admixed concrete. In the hardened state, WRDA 64 concrete has higher compressive and flexural strengths at all ages than untreated or conventional admixed concrete.

The greater degree of plasticity achieved, compared with conventional water-reducing admixtures, allows improved finishability.

### Finishability

Finishers have stated that the cement paste, or mortar, in WRDA 64 admixed concrete has improved trowelability. The influence of WRDA 64 on the finishability of lean mixes has been particularly noticeable. Floating and troweling, by machine or hand, imparts a smooth, close tolerance surface.

MILLER O'HERN CONSTRUCTION has reviewed this submittal and believes it to be in substantial compliance with the contract documents.

By: WJO

Date: 6-14-11  
6:52 PM No. 1669  
Miller O'Hern Construction, LLC 520-395-9479

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Construction Products

Received Time Jun. 14. 2011

**Addition Rate**

The addition rate range of WRDA 64 is 195 to 390 mL/100 kg (3 to 6 fl oz/100 lb) of cement. Pretesting is required to determine the appropriate addition rate for Type A and Type D performance. Optimum addition depends on the other concrete mixture components, job conditions, and desired performance characteristics.

**Dispensing Equipment**

A complete line of accurate, automatic dispensing equipment is available. WRDA 64 may be introduced to the mix on the sand or in the water.

**Compatibility with Other Admixtures**

WRDA 64 is compatible in concrete with all air-entraining admixtures such as Darex® II AEA and Daravair®. Due to the slight air-entraining properties of WRDA 64, itself, the addition rate of air-entraining admixture may be reduced by about 25%. **EACH ADMIXTURE SHOULD BE ADDED SEPARATELY.** While WRDA 64 contains no calcium chloride, it is compatible with calcium chloride in concrete mixes. Again, each should be added separately.

**Packaging**

WRDA 64 is available in bulk, delivered by metered tank trucks, and in 210 L (55 gal) drums. It will freeze at about -2°C (28°F), but will return to full strength after thawing and thorough agitation.

**Architects' Specification for Concrete Water-Reducing Admixture**

Concrete shall be designed in accordance with ACI Standard Recommended Practice for Selecting Proportions for Concrete, ACI 211.

The water-reducing (or water-reducing and retarding) admixture shall be WRDA 64, as manufactured by Grace Construction Products, or equal. The admixture shall not contain calcium chloride. It shall be used in strict accordance with the manufacturer's recommendations. The admixture shall comply with ASTM Designation C 494, Type A water-reducing (or Type D water-reducing and retarding) admixtures. Certification of compliance shall be made available on request.

The admixture shall be considered part of the total water. The admixture shall be delivered as a ready-to-use liquid product and shall require no mixing at the batching plant or job site.



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2751.2.2.4



The QUIKRETE Companies, Inc.

One Securities Centre  
3490 Piedmont Road, Suite 1300  
Atlanta, GA 30305  
404.634.9100

DATE: 06/07/11

**RE: Concrete Dobies (2" x 3" x 3") plain**

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To Whom It May Concern:

This is to certify that the concrete blocks ("Dobies"), specified above, which are made at Quikrete, Corona, comply with the following:

The 'Dobies' are made with a mix design consisting of washed aggregates and Portland Cement which equal or exceed 4000 PSI at 28 days.

Respectfully

**John Rodriguez  
Plant Manager  
The Quikrete Companies**

MILLER O'HEARN CONSTRUCTION has reviewed this submittal and believes it to be in substantial compliance with the contract documents.

By: \_\_\_\_\_

Date: 6-14-11

Miller O'Hearn Construction, LLC 520-395-9479



2751.2.4



CSI Code: 03050

No. 367

JULY 2004  
(Supersedes September 2002)

### MED-CURE™ Concrete Curing Compound & Hardener

#### DESCRIPTION

MED-CURE Concrete Curing Compound was specially formulated to supplement the W. R. MEADOWS' line of curing compounds and provide the contractor with a good, general-purpose curing compound for construction applications where economy is of prime importance. It contains no wax, resin or acids. MED-CURE meets maximum VOC content limits of 350 g/L for Concrete Curing Compounds as required by the U.S. EPA Architectural Coatings Rule.

#### USES

MED-CURE is ideal for curing, hardening and dustproofing exposed concrete floor slabs, sidewalks, driveways, beams, columns, etc. It can be used to provide a hard, dust-free surface on concrete floors to be painted or covered by resilient, carpeted, wood or synthetic flooring.

#### TECHNICAL DATA

- DRYING TIME...Depends on weather conditions and coverage, but will generally dry in one hour.
- FLASH POINT...Product will not flash.

#### PACKAGING

5 Gallon (18.93 liter) Pails  
55 gallon (208.20 liter) Drums

#### COVERAGE

BROOMED SURFACE: 400 sq.ft./gal.  
(9.82 sq.m/L)

TROWELED SURFACE: 600 sq.ft./gal.  
(14.73 sq.m/L)

#### FEATURES AND BENEFITS

- Penetrates to cure and harden in one easy application
- Provides a low-maintenance finished surface
- Tint aids in identifying coverage
- Ideal for new or old, interior or exterior, horizontal or vertical concrete surfaces
- Dries fast and may be re-coated if desired
- Application tools may be cleaned with water
- VOC compliant...actual VOC content is 0

#### ADDITIONAL CURING COMPOUNDS

FROM W. R. MEADOWS CAN BE FOUND BY VISITING OUR WEBSITE: [www.wrmeadows.com](http://www.wrmeadows.com)

MILLER O'HERN CONSTRUCTION has reviewed this submittal and believes it to be in substantial compliance with the contract documents.

By: Duro

Date: 6.14.11

Miller O'Hern Construction, LLC 520-395-9479



CONTINUED ON REVERSE SIDE...

W.R. MEADOWS, INC.  
P.O. Box 338 • HAMPSHIRE, IL 60140-0338  
Phone: 847/214-2100 • Fax: 847/683-4544

HAMPSHIRE, IL / CARTERSVILLE, GA YORK, PA / FORT WORTH, TX / BENICIA, CA POMONA, CA / GOODYEAR, AZ / MILTON, ONT.
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Received Time Jun. 14. 2011 6:52PM No. 1669