

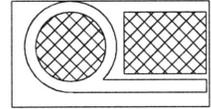
CONCRETE MIX DESIGN**6000 psi****SCC****SDI MIX CODE: P60TER****DATE:** May 30, 2013 **PLANT:** Burlington, VT**PROJECT:** **General DOT Precast - 2013****FINE AGGREGATE:**
ASTM C 33Source: Hinesburg Sand & Gravel
Specific Gravity: 2.65 (Abs.: 1.34%)
Fineness Modulus: 2.9**COARSE AGGREGATE:**
ASTM C 33Source: S.D. Ireland, Brownell Quarry
Specific Gravity: 2.80 (Abs.: 0.30%)
Description: 3/4" 100% Crushed Stone (Size #67)**CEMENT:**Ternary Blend Cement; Lefarge North America Lakes and Seaway Re
St. Constant, Quebec (Sp. Gvty. 3.02)**ADMIXTURES:**Water Reducer (HRWR): Glenium 7500; BASF
Air Entraining Agent: Darex II AEA; Grace Concrete Chemicals**CONSTITUENTS (LBS. /YD³)**

		<u>Abs.Vol.</u>
Coarse Aggregate (SSD)	1750	10.02
Fine Aggregate (SSD)	1009	6.10
Cement	800	4.25
Water	304.6	4.88
Air Content (Entrained)	6.5%	1.75
Total	3864	27.00ft ³

MIX PROPERTIESWater Cement Ratios: 0.38
Entrained Air Content: 5.0 % – 9.0%
Dry Unit Weight: 144.2 ± pcf
Spread: 20" to 27"*** ADMIXTURE(S) DOSEAGE (OZ. /YD³)**

Glenium 7500 (HRWR)	44 - 64
Darex II AEA	2.5

*Admixture dosage rates are subject to change.



Pennsylvania Insert Corp

PO Box 199
Spring City PA 19475
tel: 610-948-9688
fax: 610-948-4975

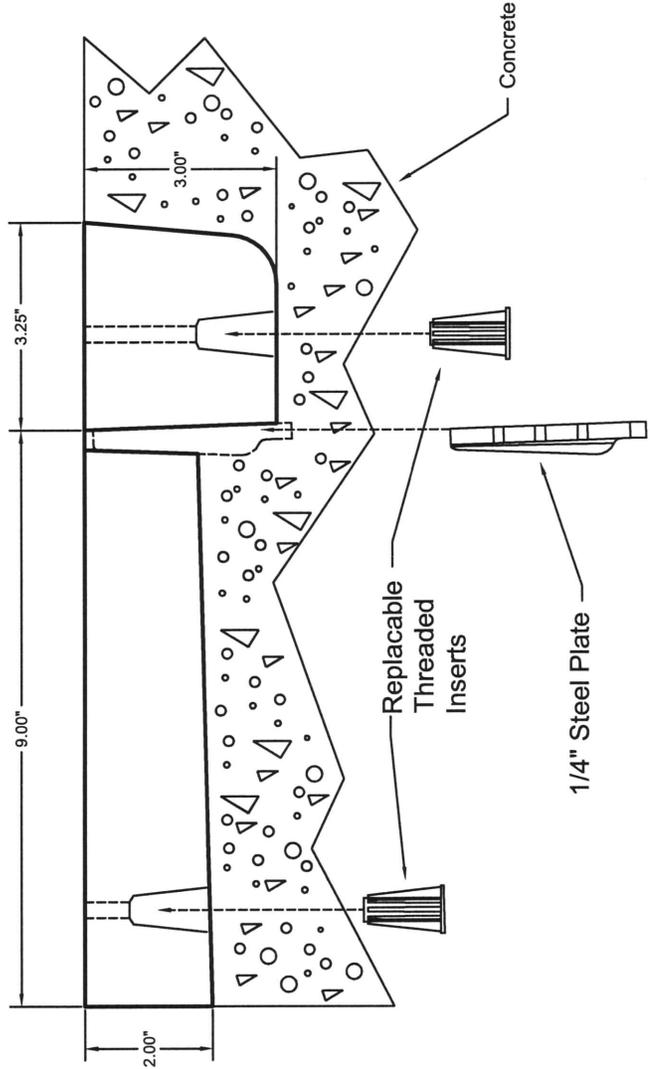
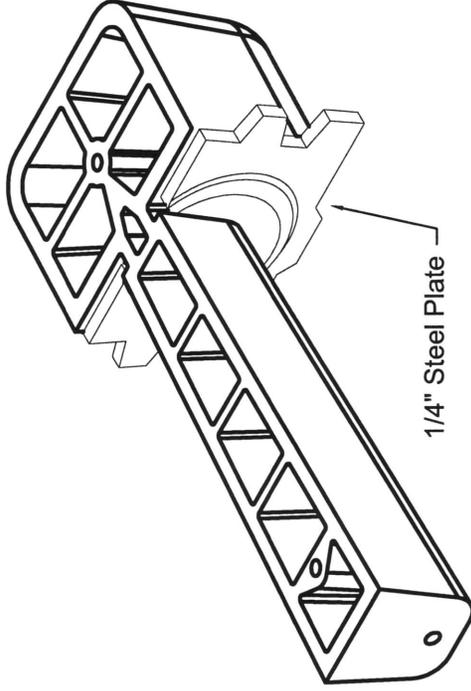
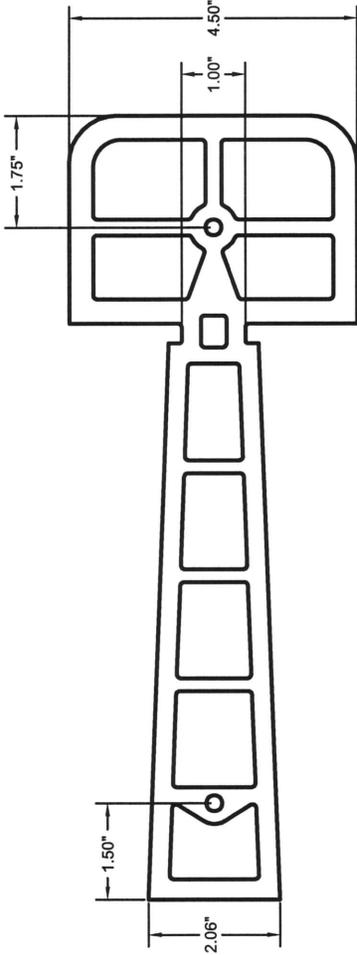
email: sales@pennsylvaniainsert.com
web: www.pennsylvaniainsert.com

Approved/Notes

Fax to:	Customer	Page ___ of ___
Fax#	Project	
From	Job#	Ship Date
Date	PA Insert Quote/Order#	

BOLT POCKET FORMER (for up to 1" bolt)

- Made from durable Urethane for reusability
- Ribbed construction increases strength
- *Replacable 1/4" Threaded Inserts
- **1/4" Galvanized Steel Plate Standard
- Available with magnets to attach to form



*Threaded Inserts sold separately (Part Number 1200)

**Steel Plate stays in concrete, sold separately (Part Number 4024)

06/03/04



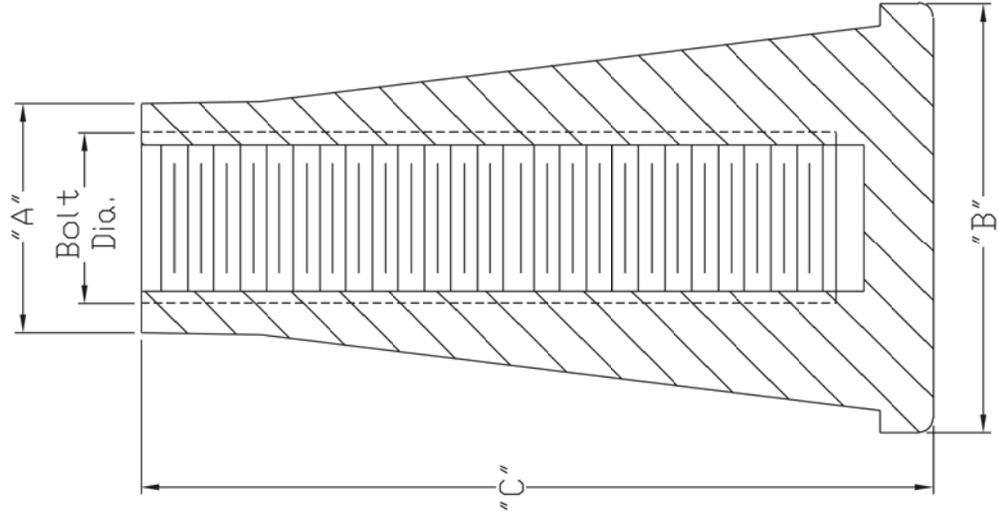
PENNSYLVANIA INSERT
 PO Box 199
 SPRING CITY, PA 19475
 P. 610.948.9688
 F. 610.948.9750

2/4/01

**ZINC ALLOY
 DIE CAST INSERT**

YOU CAN FIND THIS INFORMATION ONLINE AT: PENNSYLVANIAINSERT.COM
 OR EMAIL YOUR REQUEST TO: SALES@PENNSYLVANIAINSERT.COM

DATE: _____ CUSTOMER: _____
 REV 1: _____ JOB: _____
 REV 2: _____ OWNER: _____



Model	Bolt Dia.	Thread	A	B	C
MI-038	3/8"	16	9/16"	1-3/16"	1-3/8"
MI-050	1/2"	13	7/8"	1-3/8"	2-7/8"
MI-050S	1/2"	13	3/4"	1-1/2"	1-9/16"
MI-063	5/8"	11	7/8"	1-9/16"	2-7/8"
MI-075	3/4"	10	1"	1-3/4"	3"

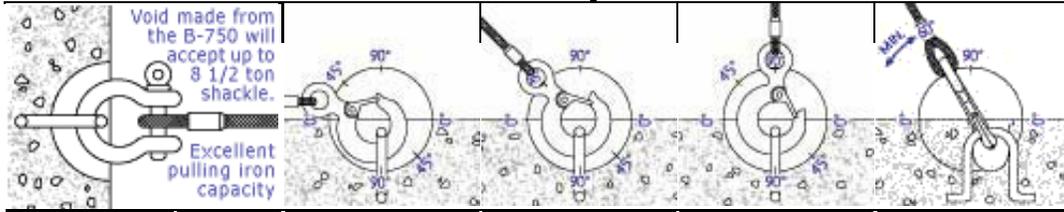
Specifications: Inserts shall be Zinc Alloy Die Cast Inserts as manufactured by Pennsylvania Insert, Spring City, PA. Inserts shall be cast from zinc alloy ZAMAK5. Inserts shall be used in applications which have been field tested to ensure safe working loads based on field conditions. Inserts shall be used with grade 8 bolts and fully threaded to ensure maximum strength.

Disclaimer: PA Insert makes no warranty that the inserts described herein are merchantable or fit for any particular purpose and there are no warranties, express or implied, which extend beyond the description of the inserts set herein. The purchaser acknowledges the PA Insert has no control over the installation and use of the product. Accordingly, PA Insert cannot assume responsibility for any damage arising out of improper use or installation of its products. PA Insert products are intended for use by trained, qualified, and experienced users only. Misuse or lack of supervision and inspection may result in serious injury or death.



PO Box 736 ■ Stevenson, CT 06491
 www.oxfordtechusa.com
 Phone: (203) 268-6030
 Fax: (203) 445-1240
 info@oxfordtechusa.com

Oxford Lift System®



Anchor Product Code	Slab Min. Inches	Safe Working Load @ 90 degree Shear-0 degree Pull	Safe Working Load @ 90 degree Shear-45 degree Pull	Safe Working Load @ 90 degree Tension-90 degree Pull	Safe Working Load @ 90 degree Shear-60 degree Pull
A 500-3	4.00"	4,500	4,000	3,500	4,000
A 500-4	5.00"	8,000	5,500	4,000	5,000
A 500-5	6.00"	10,500	6,500	5,000	5,500
A 750-5	6.00"	12,500	8,000	7,000	7,000
A 750-7	8.00"	15,000	12,500	10,000	10,000

Note: Safe Working Load provides a factor of safety of approximately 4:1

Test Results are based on a minimum concrete compressive strength of 4,000 psi.

[< back](#) [next >](#)

Home	B-500 & B-750	S-150	S-300	Lift Anchor & Order Form	Concrete Products
Pull Iron Capacity	Anchors & Accessories	Toggle-Lok	Insert/Lift Anchor	Grid-Lok/Rebar Chair	Helpful Calculations <small>COMING SOON!</small>

ALP LIFTING PIN ANCHORS



All ALP lifting pins are manufactured using high strength steel with hot forged ends. The head design provides uniform engagement with the Lifting Eye, and the large forged anchor “foot” is embedded in the concrete to create the lifting capacity. Safe Working Loads (SWL) displayed in the below chart apply to loading in any direction. These Lifting Pin Anchors are designed to meet the OSHA requirements of a 4 to 1 Safety Factor.

Standard Finish is Hot-Dipped Galvanized

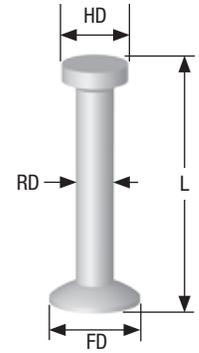
Part Number	Ton	Length (in.)	Min. Slab Thickness (in.)	1500 PSI, 4:1 SWL (lbs)	2000 PSI, 4:1 SWL (lbs)	2500 PSI, 4:1 SWL (lbs)	3000 PSI, 4:1 SWL (lbs)	3500 PSI, 4:1 SWL (lbs)	4000 PSI, 4:1 SWL (lbs)	4500 PSI, 4:1 SWL (lbs)	5000 PSI, 4:1 SWL (lbs)	Min. Edge Distances (in.)
LPA1T258G	1T	2-5/8"	3-1/2"	1,415	1,630	1,825	2,000	2,000	2,000	2,000	2,000	6"
LPA1T338G	1T	3-3/8"	5"	1,820	2,000	2,000	2,000	2,000	2,000	2,000	2,000	7"
LPA1T434G	1T	4-3/4"	6"	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	8"
LPA2T234G	2T	2-3/4"	4"	1,375	1,585	1,775	1,940	2,100	2,245	2,380	2,510	6"
LPA2T338G	2T	3-3/8"	5"	2,710	3,130	3,500	3,830	4,000	4,000	4,000	4,000	7"
LPA2T434G	2T	4-3/4"	6"	3,500	4,000	4,000	4,000	4,000	4,000	4,000	4,000	10"
LPA2T512G	2T	5-1/2"	7"	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	12"
LPA2T634G	2T	6-3/4"	8"	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	12"
LPA2T11G	2T	11"	12-1/2"	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	18"
LPA4T3G	4T	3"	4"	1,950	2,250	2,515	2,755	2,975	3,180	3,375	3,555	6"
LPA4T312G	4T	3 1/2"	5"	2,815	3,255	3,640	3,985	4,305	4,600	4,880	5,145	10"
LPA4T334G	4T	3-3/4"	5"	3,250	3,755	4,200	4,600	4,965	5,310	5,635	5,940	10"
LPA4T334G	4T	3-3/4"	8"	4,225	4,880	5,460	5,980	6,460	6,905	7,325	7,720	12**
LPA4T414G	4T	4-1/4"	6"	3,845	4,445	4,965	5,440	5,880	6,285	6,665	7,025	10"
LPA4T434G	4T	4-3/4"	6"	4,445	5,130	5,740	6,285	6,790	7,260	7,700	8,000	10"
LPA4T434G	4T	4-3/4"	10"	5,420	6,260	7,000	7,665	8,000	8,000	8,000	8,000	14**
LPA4T512G	4T	5-1/2"	7"	4,840	5,590	6,250	6,850	7,400	7,910	8,000	8,000	12"
LPA4T718G	4T	7-1/8"	9"	6,710	8,000	8,000	8,000	8,000	8,000	8,000	8,000	13"
LPA4T912G	4T	9-1/2"	11"	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	16"
LPA8T434G	8T	4-3/4"	6-1/2"	4,185	4,835	5,405	5,925	6,400	6,840	7,255	7,645	10"
LPA8T634G	8T	6-3/4"	8"	7,025	8,110	9,070	9,935	10,730	11,475	12,170	12,825	14"
LPA8T634G	8T	6-3/4"	14"	9,715	11,215	12,540	13,740	14,840	15,865	16,000	16,000	21**
LPA8T10G	8T	10"	12"	12,220	14,110	15,775	16,000	16,000	16,000	16,000	16,000	18"
LPA8T1338G	8T	13-3/8"	15"	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	22"
LPA8T2634G	8T	26-3/4"	29"	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	36"
LPA16T10G	16T	10"	11-1/2"	11,960	13,810	15,440	16,915	18,270	19,530	20,715	21,835	20"
LPA16T10G	16T	10"	20"	16,970	19,595	21,910	24,000	25,920	27,710	29,295	30,985	24**
LPA16T1934G	16T	19-3/4"	22"	28,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	36"
LPA20T10G	20T	10"	11-1/2"	11,960	13,810	15,440	16,915	18,270	19,530	20,715	21,835	20"
LPA20T10G	20T	10"	20"	16,970	19,595	21,910	24,000	25,920	27,710	29,295	30,985	24**
LPA20T1934G	20T	19-3/4"	22"	28,000	32,328	36,145	39,595	40,000	40,000	40,000	40,000	36"

☐ - Shaded area indicates the capacity in concrete is limited by the mechanical capacity of the anchor

- The Safety Factor for the listed loads is approximately 4 to 1 in normal weight concrete (145-150PCF)
- Loads are based on normal anchor recess dimensions: 1T: 5/16"; 2T: 7/16"; 8T, 10T, 16T and 20T: 9/16"
- Loads are listed at varying concrete strengths (PSI) to accommodate varying conditions at time of loading
- *Concrete thickness exceeding the listed minimums may increase the listed capacity. Example: the 16/20Tx10" has two capacities listed, one for the 11-1/2" minimum slab and one for the 20" normal slab. These capacity gains are only obtained with the 4T x 3-3/4", 4T x 4-3/4", 8/10T x 6-3/4" and the 16/20Tx10" anchors. Contact ALP customer service for further assistance.
- Proper rigging and all lifting angle load magnifications are to be used to determine actual applied loads
- Minimal reinforcement required to achieve above load values

LIFTING PIN ANCHOR - DIMENSIONS AND MECHANICAL CAPACITIES

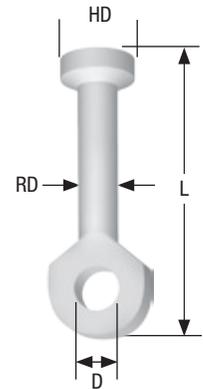
Ton	L - Length	HD - Head Diameter	RD - Rod Diameter	FD - Foot Diameter	Min. Steel Strength, 4:1 SWL (lbs)
1T	Varies	3/4"	3/8"	1"	2,000
2T	Varies	1"	9/16"	1-3/8"	4,000
4T	Varies	1-3/8"	3/4"	1-7/8"	8,000
8T	Varies	1-13/16"	1-3/32"	2-3/4"	16,000
16T	Varies	2-3/4"	1-1/2"	3-7/8"	32,000
20T	Varies	2-3/4"	1-1/2"	3-7/8"	40,000



ALP LIFTING PIN EYE ANCHORS

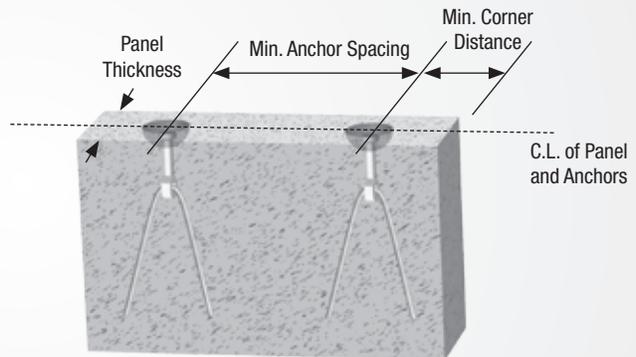
LIFTING PIN EYE ANCHOR - DIMENSIONS AND CAPACITIES WITH REBAR

Part Number	Ton	L Length	HD - Head Diameter	RD - Rod Diameter	D Diameter	Min. Panel Thickness	Min. Corner Distance	Tension w/rebar 4:1 SWL (lbs)	Min. Anchor Spacing
LPEA1TG	1T	2-5/8"	11/16"	3/8"	3/8"	3"	8"	2,000	16"
LPEA2TG	2T	3-1/2"	1-1/32"	9/16"	9/16"	3"	4"	4,000	8"
LPEA4TG	4T	4-3/4"	1-11/32"	3/4"	3/4"	4"	6"	8,000	12"
LPEA8TG	8T	7-1/16"	1-7/8"	1-3/32"	1"	6"	8"	16,000	16"
LPEA16TG	16T	9-7/8"	2-3/4"	1-1/2"	1-7/16"	6-1/2"	10"	32,000	18"
LPEA20TG	20T	9-7/8"	2-3/4"	1-1/2"	1-7/16"	6-1/2"	10"	40,000	18"



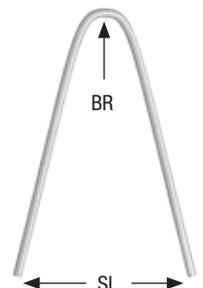
- Based on 4:1 Safety Factor
- Min. concrete compressive strength 2,000 psi. Safe work loads are based on Anchors with rebar installed.
- Anchors must be centered when installed. Deviations will result in reduction of safe working loads.

The Lifting Pin Eye Anchor utilizes rebar reinforcement which transfers tension loads deep into the concrete element and produces high safe working loads in thin wall sections.



REBAR INFORMATION

Anchor Load Rating	Grade 60 Rebar Size	Rebar Total Length	SL - Spread Length		BR - Bending Radius
			Min.	Max.	
1T	0.306"	36"	12"	12"	3/4"
2T	#3	24"	6"	7-1/2"	1-1/4"
4T	#5	24"	7"	10"	2"
8T	#6	48"	10"	15"	2-1/2"
16T	#8	86"	12"	19-1/2"	3"
20T	#9	86"	12-1/2"	20"	3"

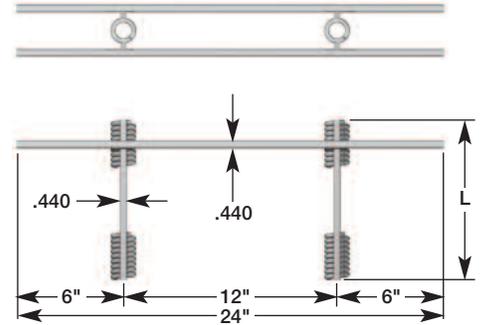


Precast Products Manual

Coil Lifting Inserts

(6425) CX-46 EDGE PICKUP INSERT – DOUBLE

The CX-46 Edge Pickup Insert – Double is two single edge pick inserts spaced 12" apart by two horizontal wire struts resulting in higher lifting capacity. Note that for the insert to develop the post-er working loads, the insert must be setback 1/2" from the concrete surface. Plywood cutouts or stacked cut washers can be utilized as setback spacers. The Edge Pickup Insert – Double is available in 1" and 1-1/4" bolt diameters and lengths shown in the table and is available in plain, hot dip galvanize, or stainless steel finish.



CX-46 EDGE PICKUP INSERT - DOUBLE DATA									
Bolt Size		Insert Length L		Minimum Edge Thickness		Safe Work Load			
						Tension		Shear	
in.	mm	in.	mm	in.	mm	lbs.	kN	lbs.	kN
1	25	9	228	5 1/2	140	9700	43.1	2300	10.2
1 1/4	32	10	254	7 1/4	184	12000	53.3	3200	14.2

Table is based on minimum concrete strength of 3,000 psi and a 4:1 safety factor.

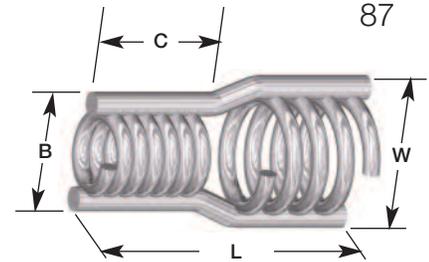
- 1) Inserts must have a 1/2" setback from the surface of the concrete and sufficient coil penetration by the lifting bolt.
- 2) See minimum bolt penetration information on page 90.

To Order, Specify: quantity, name, bolt diameter and finish.

(2210) CX-51 OPEN COIL INSERT

The CX-51 Open Coil Insert is designed to enlarge and increase the shear cone surface area, which in effect increases the load capacity of the insert without increasing the insert's corresponding length. This is a very versatile insert used for many functions, lifting precast boxes, manholes or other utility shapes.

The CX-51 Open Coil Insert is available with an attached mounting washer welded to the front end of the insert. Mounting washers have 2 nail holes for nailing the insert to a wood form or bolting to a steel form. Standard sizes shown below. Custom sizes available upon request and is available in plain, hot dip galvanize, or stainless steel finish.



CX-51 OPEN COIL INSERT DATA									
Bolt Diameter	Length (L)	SWL (Tension) lbs.	SWL (Shear) lbs.	B in.	Coil Length (C) in.	W in.	Wire Diameter (D) in.	Edge Distance (Tension) in.	Edge Distance (Shear) in.
3/4	4-1/2	4,250	4,250	1 3/4	1 3/4	2-1/8	0.375	7	12
1	5 1/2	6,250	6,250	2 1/4	2 1/16	2-1/2	0.440	9	16
1	7 1/2	10,000	12,000	2 1/4	2 1/16	2-3/4	0.440	12	24
1 1/4	7 1/2	12,000	12,000	2 1/2	2 5/16	3	0.440	12	24
1 1/4	9 1/2	16,000	16,250	2 1/2	2 5/16	3	0.440	16	26
1 1/2	9 1/2	16,000	16,250	2 3/4	2 9/16	3	0.440	16	26

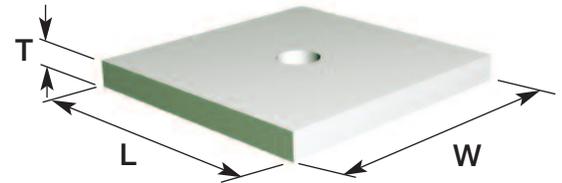
1. SWL based on 3000 psi concrete compressive strength.
2. SWL includes a 4:1 safety factor.
3. Inserts must have a 1/2" setback.
4. See minimum bolt penetration on page 90.
5. Minimum edge distance apply to 2 edges only. All other edges require 2 x length of the insert.
6. Minimum corner distance shall be 1.5 x minimum edge distance for shear when loaded towards the edge.
7. Minimum anchor spacing shall be 2 x the edge distance for tension and 3 x the edge distance for shear.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

Coil Lifting Insert Accessories

(2080) CW-4 FLAT WASHER

The CW-4 Flat Washers are manufactured from high carbon flat steel plate and are designed to provide the required bearing against the form members. Flat Washers are available in many sizes in both standard and heavy versions. Refer to the table for dimensions and safe working loads.



Flat Washer Safe working loads are based on an approximate 5:1 safety factor for lifting applications.

CW-4 FLAT WASHER DATA									
Bolt Size		Type	T		L		W		
in.	mm		in.	mm	in.	mm	in.	mm	
1/2	13	Standard	1/4	6	4	100	3	75	
3/4	19	Standard	1/4	6	4	100	5	125	
1	25	Standard	1/2	13	5	125	5	125	
1 1/4	32	Standard	1/2	13	5	125	5	125	
1 1/2	38	Standard	3/4	19	5	125	5	125	
1/2	13	Heavy	1/4	6	4	100	5	125	
3/4	19	Heavy	1/2	13	5	125	5	125	
1	25	Heavy	3/4	19	7	175	7	175	
1 1/4	32	Heavy	3/4	19	7	175	7	175	
1 1/2	38	Heavy	3/4	19	7	175	7	175	

To Order, Specify: quantity, name and bolt diameter.

(2102) CR-4 COIL ROD

CR-4 Continuous Coil Rod is manufactured and stocked in 12'-0" lengths. Special lengths are available up to 20'-0".

Requires minimum two (2) Standard CN-5 Coil Nuts or one (1) Heavy CN-25 Coil Nut to develop full safe work load. Minimum coil thread penetration is same as shown for coil bolts. See Table on page 88 to assure minimum coil penetration. May be cut with carborundum blades without thread damage. Do not use cutting torch to cut coil rod.



CR-4 HI-STRENGTH CONTINUOUS COIL ROD SELECTION TABLE					
Bolt Diameter		Safe Work Load			
		Tension		Shear	
In.	mm.	lbs.	kN.	lbs.	kN.
1/2	13	3600	16	2400	11
3/4	19	7200	32	4800	21
1	25	15000	67	10000	44
1-1/4	32	24000	107	16000	71
1-1/2	38	28000	124	18000	83

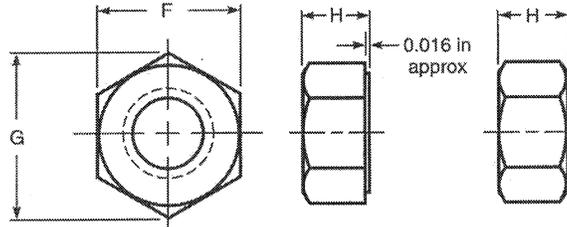
Table is based on a 5:1 safety factor for lifting applications.

To Order, Specify: quantity, name, bolt diameter and length.

Fastenal Product Standard: FNL.HHN.GRA.HDG

Heavy Hex Nuts, ASTM A563 Grade A, Hot Dip Galvanized

The information below lists the required dimensional, chemical and physical characteristics of the products in this purchase order. If the order received does not meet these requirements, it may result in a supplier corrective action request, which could jeopardize your status as an approved vendor. Unless otherwise specified, all referenced consensus standards must be adhered to in their entirety.



Nominal Size	F		G		H	
	Width Across Flats		Width Across Corners		Thickness	
	Max.	Min.	Max.	Min.	Max.	Min.
1/4	.500	.488	.577	.556	.250	.218
5/16	.562	.546	.650	.622	.314	.280
3/8	.688	.669	.794	.763	.377	.341
7/16	.750	.728	.866	.830	.441	.403
1/2	.875	.850	1.010	.969	.504	.464
9/16	.938	.909	1.083	1.037	.568	.526
5/8	1.062	1.031	1.227	1.175	.631	.587
3/4	1.250	1.212	1.443	1.382	.758	.710
7/8	1.438	1.394	1.660	1.589	.885	.833
1	1.625	1.575	1.876	1.796	1.012	.956
1 1/8	1.812	1.756	2.093	2.002	1.139	1.079
1 1/4	2.000	1.938	2.309	2.209	1.251	1.187
1 3/8	2.188	2.119	2.526	2.416	1.378	1.310
1 1/2	2.375	2.300	2.742	2.622	1.505	1.433
1 5/8	2.562	2.481	2.959	2.828	1.632	1.556
1 3/4	2.750	2.662	3.175	3.035	1.759	1.679
1 7/8	2.938	2.844	3.392	3.242	1.886	1.802
2	3.125	3.025	3.608	3.449	2.013	1.925
2 1/4	3.500	3.388	4.041	3.862	2.251	2.155
2 1/2	3.875	3.750	4.474	4.275	2.505	2.401
2 3/4	4.250	4.112	4.907	4.688	2.759	2.647
3	4.625	4.475	5.340	5.102	3.013	2.893
3 1/4	5.000	4.838	5.774	5.515	3.252	3.124
3 1/2	5.375	5.200	6.207	5.928	3.506	3.370
3 3/4	5.750	5.562	6.640	6.341	3.760	3.616
4	6.125	5.925	7.073	6.755	4.014	3.862

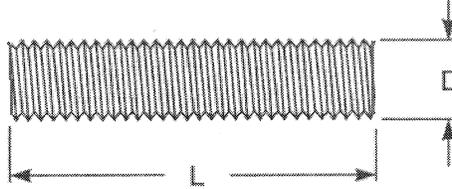
Dimensions above are prior to coating

Specification Requirements:

- Dimensions: ASME B18.2.2.
- Material & Mechanical Properties: Grade A of ASTM A563.
- Thread requirements: Thread dimensions and oversize tapping allowance per ASTM A563.
- Finish: Hot dip galvanize per ASTM F2329

Threaded Rod, Low Carbon, Hot Dip Galvanize

The information below lists the required dimensional, chemical and physical characteristics of the products in this purchase order. If the order received does not meet these requirements, it may result in a supplier corrective action request, which could jeopardize your status as an approved vendor. Unless otherwise specified, all referenced consensus standards must be adhered to in their entirety.



Diameter	Nominal Size	D (Major Diameter)	
		Max.	Min.
3/8-16	.3750	.3737	.3595
7/16-14	.4375	.4361	.4206
1/2-13	.5000	.4985	.4822
5/8-11	.6250	.6233	.6051
3/4-10	.7500	.7482	.7288
7/8-9	.8750	.8731	.8523
1-8	1.000	.9980	.9755
1 1/8-7	1.125	1.1228	1.0982
1 1/4-7	1.250	1.2478	1.2232
1 3/8-6	1.375	1.3726	1.3453
1 1/2-6	1.500	1.4976	1.4703
1 3/4-5	1.750	1.7473	1.7165
2-4.5	2.000	1.9971	1.9641

Dimensions above are prior to coating

Length	Tolerance
3'	+/- 1/4"
6' - 12'	+/- 1/2"

Length shall be measured form end to end

Specification Requirements:

- Standard: ASME B18.31.3
- Material &
- Mechanical Properties: ASTM A307, Grade A
- Thread requirements: Roll threaded to ASME B1.1 UNC & UNF Class 1A BEFORE COATING.
- Coating: Hot dip galvanize per ASTM A153 or F2329.

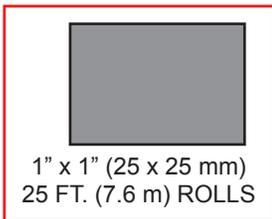


CELLULAR JOINT FILLER

CLOSED-CELL GASKET MATERIAL

What It Is

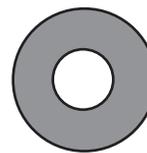
CLOSED CELL JOINT FILLER is a flexible, compressible material that easily fills difficult joints in concrete pipes and structures. Whether glued onto the joint or placed between the structures, it quickly conforms to the joint profile. CLOSED CELL JOINT FILLER can be supplied as cut and spliced gaskets or as bulk material for field fabrication of gaskets. It has excellent compressibility and is resistant to weather, ozone, acids, and alkalis.



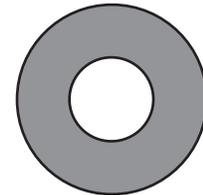
1" x 1" (25 x 25 mm)
25 FT. (7.6 m) ROLLS



1" x 2" (25 x 50 mm)
25 FT. (7.6 m) ROLLS



ROUND 3/8" (10 mm) WALL
250 FT. (76.2 m) ROLLS



ROUND 1/2" (13 mm) WALL
250 FT. (76.2 m) ROLLS

Why It's Better

- Works with Round, Elliptical, and Arch Pipe.
- Works with Box Culverts and Manholes.
- Available in 25' (7.6 m) or 250' (76.2 m) rolls, or by the foot.
- Also available as cut and spliced gaskets.
- Manufactured of high-quality synthetic rubber.
- Easily compresses to fill irregular joints.
- Clean and easy to use.
- May be used in place of trowelable sealants.
- Easily cut and spliced in the field or in your yard.
- May be glued directly to the joint.

How It Performs

CLOSED CELL JOINT FILLER MATERIAL meets or exceeds all requirements of:

ASTM D-1056 - Flexible Cellular Materials - Sponge or Expanded Rubber

Virginia and New York DOT approved. Complies with NYDOT Std. 706.17

RECTANGULAR CROSS-SECTIONS are made from a Neoprene/EPDM Blend.

CIRCULAR TUBING CROSS-SECTIONS are made from a Nitrile/PVC blend.

Typical Physical Properties

Color	Black	Water Absorption by Weight (Max.).....	10%
Compression Deflection (psi)	5 - 9	Temperature Range (F)	
Tensile Strength (psi Min.)	30	Low (Flex without cracking)	-70
Elongation (%Min.)	125	High (Continuous)	150
Resilience - Bashore (% rebound Average)		High (Intermittent)	200
(1/2" thickness @ 72°F)	25 - 40	Heat Aging (7 days @ 158°F)	
Shore 00 Durometer	45 - 60	Lineal Shrinkage (Max.)	10%
Density (pcf) average	5.5 - 7.5		

Scan Here To View More Info On This Product On The Web!



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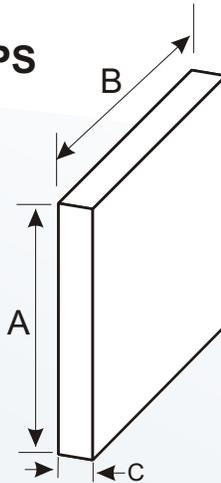




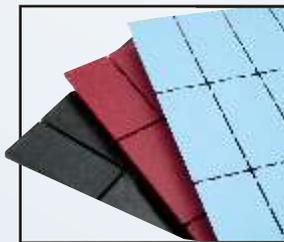
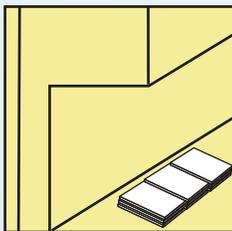
VERS-A-SHIM HIGH IMPACT PLASTIC SHIMS

Vers-A-Shim® SHIM STRIPS

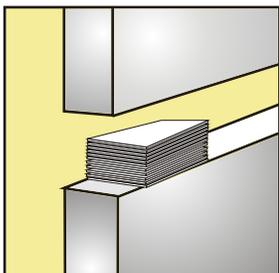
- Assures accurate placing and leveling of precast panels, tilt-up walls, structural and architectural components.
- Has excellent stability, eliminates rust, stained concrete, etc.
- Less expensive and more versatile than steel.
- Convenient thicknesses, lengths and widths.
- Will not rust, rot, stain or leach concrete.
- Available in convenient thicknesses, lengths and widths which permit precise leveling and alignment.



Other sizes available.

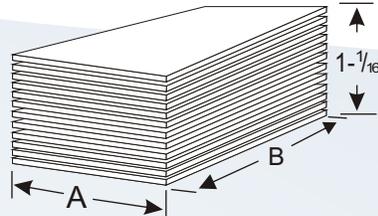


Catalog No	A	B	C
PC1116			1/16
PC1118	1"	1"	1/8
PC1114			1/4
PC1112			1/2
PC2116			1/16
PC2118	2"	1"	1/8
PC2114			1/4
PC2216			1/16
PC2218	2"	2"	1/8
PC2214			1/4
PC2238			3/8
PC2212			1/2
PC3316			1/16
PC3318	3"	3"	1/8
PC3314			1/4
PC3312			1/2
PC4216			1/16
PC4218	4"	2"	1/8
PC4214			1/4
PC4416			1/16
PC4418	4	4"	1/8
PC4414			1/4
PC4412			1/2
PC4616			1/16
PC4618	6	4"	1/8
PC4614			1/4
PC4816			1/16
PC4818	8	4"	1/8
PC4814			1/4
PC5516			1/16
PC5518	5	5	1/8
PC5514			1/4
PC6216			1/16
PC6218	6	2	1/8
PC6214			1/4
PC6616			1/16
PC6618	6	6	1/8
PC6614			1/4
PC6816			1/16
PC6818	6	8	1/8
PC6814			1/4



Vers-A-Shim® VERS-A-PACKS

- Pre-assembled packages of shims designed for precise placing of large load bearing precast units.
- Eliminates correction of elastomeric drift.
- Can be compressed sufficiently at post tensioning to allow load transfer to the grout.



CATALOG No	THICKNESS	A	B
SP22VS	1-1/16"	2	2
SP33VS		3	3
SP44VS		4	4
SP46VS		4	6
SP55VS		5	5
SP66VS		6	6
SP68VS	6	8	
SP46VS-2VS	2-1/8"	4	6

Special sizes available

- 17 pieces; 1/16" thick, HEAT-SEALED together on adjacent sides.
- Peel off shims in " 1/16" increments to obtain the correct height adjustment.

Vers-A-Shim® MULTI-PACKS

Vers-A-Shim Multi-Pack 4" x 6" x 1-1/16" pack contains (1) 1/16", (2) 1/8". & (3) 1/4" shims rubber-banded together for easy height adjustment. Color coded by thickness. Each shim has no-slip serrations.



- Vers-A-Shim® Multi-Packs are unaffected by liquids, ground chemicals, alkalis and micro-organisms. Performance characteristics are stable and predictable.
- Pre-assembled packages of shims designed for precise placing of large load bearing precast units.
- Eliminates correction of elastomeric drift.
- Can be compressed sufficiently at post tensioning to allow load transfer to the grout.

CATALOG No	A	B	HT
SP44MB	4	4	1-1/16"
SP46MB	4	6	1-1/16"

ENGINEERING SPECIFICATIONS

- Compressive strength of 10,000 psi with no fracture
- Coefficient of linear expansion is 3 to 5 x 10-5 inches/inch/°C.

Product Categories

Industrial, Maintenance, and Construction Chemical Products

Safety, Traffic Control, and Outdoor Products

Solar Energy Collection, Distribution & Storage

Portable Appliances and Accessories

Induction

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Rebar Green Coating



[\(view larger image\)](#)

A high-performance, single system epoxy coating that is specially designed for touch-up or as an initial coating of rebar.

- Prevents rust and the resulting stains when applied to rebar before setting in concrete
- Meets ASTM D3963 specifications
- Excellent color retention
- Tough, durable finish
- Very good resistance to corrosion, chemicals, gasoline, and abrasion
- Prevents oxidation with touch-up or sheared ends, cuts and other exposed areas
- Performs at temperatures up to 300°F (149°C)

Applications: rebar, metal, steel, and metal support reinforcement beams.

Details

SKU	156
Weight	14.00 lbs
Container Size	16 oz.
Net Weight	12 oz.
Case Pack	12
Price	\$101.64
MSRP	\$8.47

Options

Quantity

[Add to cart](#)

Product Documentation



[US MSDS](#)



[Canadian French MSDS](#)



[Canadian English MSDS](#)



[Product Data Sheet](#)

Product Data Sheet

No. 1156 - 10/11

REBAR GREEN EPOXY COATING

AEROSOL CARB VOC <65% / MIR <1.40

PRODUCT NUMBERS: 156 - 12 OZ. NET WT.

I. GENERAL DESCRIPTION

Description: Aervoe Rebar Green Epoxy Coating is a high-performance, fast-drying, single system epoxy. It is specifically designed for touch-up or on site initial coating to protect rebar and other metal/steel surfaces.

Benefits: Meets ASTM D3963 specifications (Report available upon request). Provides a rustproof finish to keep rust stains from appearing in finished concrete. Adheres to all surfaces with very good resistance to corrosion, chemicals, and abrasion. The touching-up of sheared ends, cuts, and other exposed areas promptly will prevent detrimental oxidation.

Application: Use on rebar and metal/steel, or wherever a tough, durable finish is required. Metal supports for use in reinforcement which contact the exposed surfaces of the concrete may also be coated with this product or the Aervoe Galvanize Coatings (#7007 Cold Galvanize Coating or # 7008 Brite Galvanize Coating).

Directions: Turn insert part of spray head to choose either vertical or horizontal spray pattern. Align spray head with black mark on valve rim to ensure complete evacuation. Shake can vigorously for at least 1 minute after rattle of agitator ball is heard and intermittently thereafter. Surfaces must be dry and free of dirt, oil, and wax. For best results product should be used at temperatures between 60° and 80° F (16° and 27° C). Hold can 10 to 12 inches from surface to be coated. Use steady, even strokes. Several light coats are better than one heavy coat. To prevent clogging of nozzle after use, turn can upside down and spray for one to two seconds.

Limitations: Please refer to the Material Safety Data Sheet for specific information on material hazards, etc. Do not set rebar into concrete until paint has dried.

Packaging:

Aerosol:

Cans (211x604)
12 cans/case

12 oz. net wt. (340 grams)
14 lbs. (5.9 kg)

14.1 fl. oz. (401 ml)
0.47 CF (0.013 CM)

II. CHARACTERISTICS & PROPERTIES

Specifications:

Meets ASTM D3963.

Appearance:

Gloss at 60° > 60
Class Non-Flat

Coverage:

Theoretical (at 1 mil dry) 26 sq. ft. / can
Practical (at 1/2 mil dry) 52 sq. ft. / can

Drying Schedule (at 77° F [25° C], 50% Humidity at 1 mil dry):

To touch 15 min.
To handle 30 min.
To recoat Before 2 hrs or after 72 hrs
Full cure 72 hrs

Performance and Chemical Properties:

Weight per gallon 6.9 lbs.
Specific gravity 0.8
Flammability: Label marking Extremely Flammable
Flash point < 0° F (-18° C)
Operating temperature range 60° to 80° F (16° to 27° C)
Percent solids by weight 24%
Percent solids by volume 15%
Percent pigment by volume 2%
CARB VOC (Non-Flat) < 65%
CARB MIR (Non-Flat) 1.40
Interior durability Excellent
Exterior durability Excellent
Temperature resistance 300° F (149° C)
Color fastness Excellent
Adhesion (ASTM D3359) Very good
Salt spray corrosion (ASTM B117) Passed, 400 hrs
Mineral Spirits resistance Very good
Gasoline resistance Good
Motor Oil resistance Very good
Pencil hardness (ASTM D3363) H

Base Materials:

Resin system Epoxy / Acrylic Modified Alkyd
Solvents (top two) Acetone, n-Butyl Acetate
Propellant Hydrocarbon

III. SHIPPING, STORAGE AND HEALTH

IMDG number UN 1950
D.O.T. container spec 2P
D.O.T. shipping description Consumer Commodity
Warehouse storage level number NFPA 30B Level 2
Hazardous class (CFR-49) **ORM-D**
Storage temperature 32° to 120°F (0° to 49°C)
Shelf life 1 - 2 years
HMIS ratings
Health 2
Fire 4
Reactivity 1

IV. MISCELLANEOUS

Contains no Ozone Depleting Substances (O.D.S.)

V. WARRANTY

The statements made herein, on labels, product bulletins or by any of our employees or agents concerning this material are given for information only. Any liability whatsoever of Aervoe Industries, Inc. to the user of the product, is limited to replacement of the product or purchase price refunded.

COMMERCIAL GRADE FASTSET™ REPAIR MORTAR

PRODUCT NO. 1241-60, -20

DIVISION 3

Maintenance of Concrete
03 01 00

PRODUCT DESCRIPTION

QUIKRETE® Commercial Grade FastSet™ Repair Mortar is a rapid setting repair material specially formulated to make structural repairs to any concrete or masonry surface.

PRODUCT USE

QUIKRETE® Commercial Grade FastSet™ Repair Mortar demonstrates low sag, making it ideal for vertical or overhead repairs. QUIKRETE® FastSet™ Repair Mortar is available with integral corrosion inhibitor in cases where maximum corrosion protection is desired. The addition of corrosion inhibitor has no adverse effect on the other physical properties of the product. This product can be built up to at least 1 1/2" (38 mm) in one application. Its unique properties allow the user to actually sculpt the material during application. Use to repair concrete cracks, curbs, steps, pre-stressed panels, pipe, tunnels, sewers, loading docks, silos, retaining walls, culverts, catch basins, decorative moldings, bridge columns, parapet walls, septic tanks, cold storage vaults, virtually any vertical or overhead concrete surface.

SIZES

- QUIKRETE® Commercial Grade FastSet™ Repair Mortar - 60 lb (27.2 kg) bags and 20 lb (9 Kg) pails

YIELD

- Each 60 lb (27.2 kg) bag of QUIKRETE® FastSet™ Repair Mortar will yield 0.54 cu ft (15 L) of material. QUIKRETE® FastSet™ Repair Mortar can be extended with up to 30 lb (13.6 kg) of -1/2" (-12.7 mm) maximum size aggregate per 60# bag for deep repairs.

TECHNICAL DATA

APPLICABLE STANDARDS

- ASTM International
- ASTM C109/C109M Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
- ASTM C157/C157M Standard Test Method for Length Change of Hardened Hydraulic-Cement, Mortar, and Concrete
- ASTM C191 Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
- ASTM C882 Standard Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear
- ASTM C928 Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs

PHYSICAL/CHEMICAL PROPERTIES

Typical test results for QUIKRETE® FastSet™ Repair Mortar, when tested in accordance with applicable ASTM Test Methods, are shown



in Table 1. Product meets the requirements of ASTM C928 Type R2 with reduced flow for vertical and overhead applications.

TABLE 1 TYPICAL PHYSICAL PROPERTIES

Setting time, ASTM C191	
Initial	Approx. 20 min.
Final	20 - 40 min.
Approx. water content / 60# bag	1 3/8 gal (5.2 L)
Consistency	gel-like
Unit weight, lb/cu ft (kg/m³)	128 (2051)
Compressive strength, ASTM C109 modified	
3 hours	2000 psi (13.8 MPa)
24 hours	4000 psi (27.6 MPa)
7 days	5000 psi (34.5 MPa)
28 days	6000 psi (41.4 MPa)
Slant shear, ASTM C882 modified	
24 hours	1000 psi (6.9 MPa)
7 days	1500 psi (10.3 MPa)
28 days	2500 psi (17.2 MPa)
Length change, ASTM C157 (typical)	
28 days, air	-0.1%
28 days, water	+0.1%

INSTALLATION

SURFACE PREPARATION

- Remove all spalled areas, as well as areas of unsound concrete and previous patching materials
- Holes should be chipped out to create a new sound substrate
- If rusty reinforcing steel is present, it must be abrasive blasted to remove rust. In many cases, it will be best to remove enough material to completely expose the reinforcing steel
- Large vertical or overhead patches deeper than 2" (51 mm) should contain reinforcing steel. If none is present, new steel should be inserted using appropriate techniques
- Holes should be dampened with clean water before patching. No puddles of water should be left in the hole

MIXING

- Add approximately 1 3/8 gal (5.2 L) of water to the mixer for each 60 lb (27.2 kg) bag of QUIKRETE® FastSet™ Repair Mortar being mixed
- Add the product and mix for approximately 3 minutes. Adjust water as needed to achieve a stiff gel-like consistency
- Where large quantities of material are used for patches deeper than 2" (51 mm), QUIKRETE® FastSet™ Repair Mortar may be extended with 30 lbs (13.6 kg) of -1/2" (-12.7 mm) aggregate per 60 lb (27.2 kg) bag. This will require approximately 6 qt (5.7 L) of water depending on the dampness of the aggregate.

APPLICATION

QUIKRETE® FastSet™ Repair Mortar should be trowel applied to the damp surface. Apply a thin layer with heavy trowel pressure, and then go back and build up to the desired thickness. QUIKRETE® FastSet™ Repair Mortar obtains high bond strength without the use of bonding adhesives or acrylic additives. After initial set, the material may be trimmed and shaped to match the existing contours of the patch area.

CURING

During the first 24 hours, it is best to keep the patch covered or damp to prevent excessive loss of water. Under hot, dry and windy placing conditions, all concrete tends to lose moisture unevenly and may develop plastic shrinkage cracks. The use of sheeting, monomolecular films (either sprayed or rolled on), as well as application of a very fine fog spray of water, has been quite successful in arresting shrinkage cracking.

PRECAUTIONS

- Do not apply when temperatures are below 40 degrees F (4 degrees C) or are expected to drop below 32 degrees F (0 degrees C) within 24 hours
- In hot weather, use cool mixing water to lengthen setting time
- Mix no more material than can be used in 15 minutes
- Do not re-temper with additional water

WARRANTY

The QUIKRETE® Companies warrant this product to be of merchantable quality when used or applied in accordance with the instructions herein. The product is not warranted as suitable for any purpose or use other than the general purpose for which it is intended. Liability under this warranty is limited to the replacement of its product (as purchased) found to be defective, or at the shipping companies' option, to refund the purchase price. In the event of a claim under this warranty, notice must be given to The QUIKRETE® Companies in writing. This limited warranty is issued and accepted in lieu of all other express warranties and expressly excludes liability for consequential damages.

The QUIKRETE® Companies
 One Securities Centre
 3490 Piedmont Rd., NE, Suite 1300, Atlanta, GA 30305
 (404) 634-9100 • Fax: (404) 842-1425





CEMENT & CONCRETE PRODUCTS™

Dry-Packaged Fast-Setting Cement Based Products

MATERIAL SAFETY DATA SHEET
(Complies with OSHA 29 CFR 1910.1200)

SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Road, Suite 1300
Atlanta, GA 30329

Emergency Telephone Number
(770) 216-9580

Information Telephone Number
(770) 216-9580

MSDS J2
Revision: May-12

HEALTH			1
FLAMMABILITY			0
PHYSICAL HAZARD			0
PERSONAL PROTECTION Safety Glasses, Gloves and Dust Respirator			

<u>QUIKRETE® Product Name</u>	<u>Code #</u>
Fast-Setting Concrete Mix	1004-50
Post Haste	1004-65
Concrete Resurfacer	1131-40
Multipurpose Concrete Resurfacer	1131-45
All-Star 10 Minute Instant Post Mix	1005-51
All-Star Fast Setting Concrete Mix	1004-50
Bonded Topping Mix	1133-04, 1018, 1017
Commercial Grade FastSet™ Cement	1124-92
Commercial Grade FastSet™ Non-Shrink Grout	1585-09
Commercial Grade FastSet™ Repair Mortar	1241-60
Commercial Grade FastSet™ Concrete Mix	1004-51
Commercial Grade FastSet™ DOT Mix	1244-56
Commercial Grade FastSet™ DOT Mix – Extended	1244-81
Commercial Grade FastSet™ All-Crete	1585-59
Commercial Grade FastSet™ DOT Deck Repair – Polymer Modified	1244-58
Polymer Modified Structural Concrete – Extended Set	1242-85
Commercial Grade FastSet™ Repair Mortar – Zip And Mix	1241

Product Use: Portland cement-based, rapid-setting materials for general construction or repair.

SECTION II - HAZARD IDENTIFICATION

Route(s) of Entry: Inhalation, Skin, Ingestion

Acute Exposure: Product becomes alkaline when exposed to moisture. Exposure can dry the skin, cause alkali burns and affect the mucous membranes. Dust can irritate the eyes and upper respiratory system. Toxic effects noted in animals include, for acute exposures, alveolar damage with pulmonary edema.

Chronic Exposure: Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis.

CEMENT & CONCRETE PRODUCTS™

Carcinogenicity: Since Portland cement and blended cements are manufactured from raw materials mined from the earth (limestone, marl, sand, shale, etc.) and process heat is provided by burning fossil fuels, trace, but detectable, amounts of naturally occurring, and possibly harmful, elements may be found during chemical analysis. Under ASTM standards, Portland cement may contain 0.75 % insoluble residue. A fraction of these residues may be free crystalline silica. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs and possibly cancer. There is evidence that exposure to respirable silica or the disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders.

Carcinogenicity Listings:	NTP:	Known carcinogen
	OSHA:	Not listed as a carcinogen
	IARC Monographs:	Group 1 Carcinogen
	California Proposition 65:	Known carcinogen

NTP: The National Toxicology Program, in its "Ninth Report on Carcinogens" (released May 15, 2000) concluded that "Respirable crystalline silica (RCS), primarily quartz dusts occurring in industrial and occupational settings, is *known to be a human carcinogen*, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to RCS and increased lung cancer rates in workers exposed to crystalline silica dust (reviewed in IAC, 1997; Brown *et al.*, 1997; Hind *et al.*, 1997)

IARC: The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz or cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans* (Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances or studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates." (1997)

Signs and Symptoms of Exposure: Symptoms of excessive exposure to the dust include shortness of breath and reduced pulmonary function. Excessive exposure to skin and eyes especially when mixed with water can cause caustic burns as severe as third degree.

Medical Conditions Generally Aggravated by Exposure: Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure. Exposure to crystalline silica or the disease silicosis is associated with increased incidence of scleroderma, Tuberculosis and possibly increased incidence of kidney lesions.

Chronic Exposure: Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis. (May contain trace (<0.05 %) amounts of chromium salts or compounds including hexavalent chromium, or other metals found to be hazardous or toxic in some chemical forms. These metals are mostly present as trace substitutions within the principal minerals)

Medical Conditions Generally Aggravated by Exposure: Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure.

SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

**CEMENT & CONCRETE PRODUCTS™**

Hazardous Components	CAS No.	PEL (OSHA) mg/M ³	TLV (ACGIH) mg/M ³
Portland Cement	65997-15-1	5	5
Lime	01305-62-0	5	5
Silica Sand, crystalline	14808-60-7	$\frac{10}{\%SiO_2+2}$	0.05 (respirable)

May contain one or more of the following ingredients:

Amorphous Silica (From fly Ash)	07631-86-9	$\frac{80}{\%SiO_2+2}$	10
Alumina (From Fly Ash)	01344-28-1	5	5
Limestone Dust	01317-65-3	5	5
Calcium Sulfate	10101-41-4 or 13397-24-5	5	5
Calcium Sulfoaluminate	65997-16-2	15	10

Other Limits: National Institute for Occupational Safety and Health (NIOSH). Recommended standard maximum permissible concentration=0.05 mg/M³ (respirable free silica) as determined by a full-shift sample up to 10-hour working day, 40-hour work week. See NIOSH Criteria for a Recommended Standard Occupational Exposure to Crystalline Silica.

SECTION IV – First Aid Measures

Eyes: Immediately flush eye thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

Skin: Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment if irritation or inflammation develops or persists. Seek immediate medical treatment in the event of burns.

Inhalation: Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek medical help if coughing and other symptoms do not subside. Inhalations of large amounts of Portland cement require immediate medical attention.

Ingestion: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

SECTION V - FIRE AND EXPLOSION HAZARD DATA

Flammability: Noncombustible and not explosive.

Auto-ignition Temperature: Not Applicable

Flash Points: Not Applicable

SECTION VI – ACCIDENTAL RELEASE MEASURES

If spilled, use dustless methods (vacuum) and place into covered container for disposal (if not contaminated or wet). Use adequate ventilation to keep exposure to airborne contaminants below the exposure limit.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

**CEMENT & CONCRETE PRODUCTS™**

Do not allow water to contact the product until time of use. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended.

SECTION VIII – EXPOSURE CONTROL MEASURES

Engineering Controls: Local exhaust can be used, if necessary, to control airborne dust levels.

Personal Protection: The use of barrier creams or impervious gloves, boots and clothing to protect the skin from contact is recommended. Following work, workers should shower with soap and water. Precautions must be observed because burns occur with little warning -- little heat is sensed.

WARN EMPLOYEES AND/OR CUSTOMERS OF THE HAZARDS AND REQUIRED OSHA PRECAUTIONS ASSOCIATED WITH THE USE OF THIS PRODUCT.

Exposure Limits: Consult local authorities for acceptable exposure limits.

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance: Gray to gray-brown colored powder; Some products contain coarse aggregates.

Specific Gravity: 2.6 to 3.15

Melting Point: >2700°F

Boiling Point: >2700°F

Vapor Pressure: Not Available

Vapor Density: Not Available

Evaporation Rate: Not Available

Solubility in Water: Slight

Odor: Not Available

SECTION X - REACTIVITY DATA

Stability: Stable.

Incompatibility (Materials to Avoid): Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires

Hazardous Decomposition or By-products: Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.

Hazardous Polymerization: Will Not Occur.

Condition to Avoid: Keep dry until used to preserve product utility.

SECTION XI – TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, Ingestion

Toxicity to Animals:

LD50: Not Available

LC50: Not Available

Chronic Effects on Humans: Conditions aggravated by exposure include eye disease, skin disorders and Chronic Respiratory conditions.

Special Remarks on Toxicity: Not Available

SECTION XII – ECOLOGICAL INFORMATION

Ecotoxicity: Not Available

BOD5 and COD: Not Available

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Products of Biodegradation: Not available

Toxicity of the Products of Biodegradation: Not available

Special Remarks on the Products of Biodegradation: Not available

SECTION XIII – DISPOSAL CONSIDERATIONS

Waste Disposal Method: The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302).

SECTION XIV – TRANSPORT INFORMATION

Not hazardous under U.S. DOT and TDG regulations.

SECTION XV – OTHER REGULATORY INFORMATION

US OSHA 29CFR 1910.1200: Considered hazardous under this regulation and should be included in the employers' hazard communication program

SARA (Title III) Sections 311 & 312: Qualifies as a hazardous substance with delayed health effects

SARA (Title III) Section 313: Not subject to reporting requirements

TSCA (May 1997): Some substances are on the TSCA inventory list

Federal Hazardous Substances Act: Is a hazardous substance subject to statues promulgated under the subject act

California Regulation: WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Canadian Environmental Protection Act: Not listed

Canadian WHMIS Classification: Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations (Class D2A, E- Corrosive Material) and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This product has been classified according to the hazard criteria of the Controlled Products Regulation (CPR). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

SECTION XVI – OTHER INFORMATION

HMIS-III:	Health –	0 = No significant health risk
		1 = Irritation or minor reversible injury possible
		2 = Temporary or minor injury possible
		3 = Major injury possible unless prompt action is taken
Flammability-	4 = Life threatening, major or permanent damage possible	
	0 = Material will not burn	
	1 = Material must be preheated before ignition will occur	
	2 = Material must be exposed to high temperatures before ignition	
Physical Hazard-	3 = Material capable of ignition under normal temperatures	
	4 = Flammable gases or very volatile liquids; may ignite spontaneously	
	0 = Material is normally stable, even under fire conditions	
	1 = Material normally stable but may become unstable at high temps	
	2 = Materials that are unstable and may undergo react at room temp	
	3 = Materials that may form explosive mixtures with water	

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4 = Materials that are readily capable of explosive water reaction

Abbreviations:

ACGIH	American Conference of Government Industrial Hygienists
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CPR	Controlled Products Regulations (Canada)
DOT	Department of Transportation
IARC	International Agency for Research
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicity Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
TLV	Threshold Limit Value
TWA	Time-weighted Average
WHMIS	Workplace Hazardous Material Information System

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NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products. END OF MSDS.

QUIKRETE® Guide Specification

FastSet™ Repair Mortar (No. 1241)

Polymer Modified, Shrinkage Compensated, Rapid Setting Concrete Repair Mortar

Section 030100 Maintenance of Concrete

PART 1 – GENERAL

1.10 SUMMARY

- A. Provide repair mortar for vertical overhead or horizontal patch and repair of existing substrate.
- B. Related Sections: Other specification sections which relate directly to the work of this section include the following:

Section 030130: Maintenance of Cast-in-place Concrete

Section 030140: Maintenance of Precast Concrete

Section 033000: Cast-In-Place Concrete

Section 033100: Structural Concrete

Section 034100: Pre-Cast Structural Concrete

1.20 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation for each material and product used. Include manufacturer's Material Safety Data Sheets.

1.30 REFERENCES

- A. ASTM C 109: Compressive Strength of Hydraulic Mortars
- B. ASTM C 191: Setting Time of Hydraulic Cement
- C. ASTM C 882: Slant Shear Bond Strength
- D. ASTM C 928: Rapid Hardening Cementitious Materials for Concrete Repairs
- E. Utah D.O.T. Bond/Slant Shear Testing.

1.40 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: The manufacturer shall be a company with at least fifteen years experience in the manufacturer and marketing of pre-packaged cementitious repair materials.
- B. Installer's Qualifications: The contractor shall be qualified to perform the work specified by reason of experience.

1.50 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.

- B. Store products in a dry area. Protect from direct sunlight.
- C. Handle products in accordance with manufacturer's printed recommendations.

PART 2 – PRODUCTS
2.10 MATERIALS

- A. Polymer modified, shrinkage compensated, rapid setting high strength, hydraulic cement based repair mortar. Comply with the following:
 - 1. Manufacturer: Fastset™ Repair Mortar (#1241) as manufactured by the QUIKRETE® Companies, One Securities Centre, 3490 Piedmont Road, NE, Suite 1300, Atlanta, GA 30305; telephone (404) 634-9100.
 - 2. Performance and Physical Properties at 73 degrees F (23°C) and 50 percent relative humidity:
 - a. Compliance: ASTM C 928 R-2 specifications
 - b. Setting time, ASTM C 191: 20-40 minutes
 - c. Compressive Strength, ASTM C 109 Modified: 2000 psi (13.8 MPa) @ 3 hours, 4000 psi (27.6 MPa) @ 24 hours, 5000 psi (34.5 MPa) @ 7 days and 6000 psi (41.4 MPa) @ 28 days
 - d. Slant Shear Bond Strength, ASTM C 882: 1000 psi (6.9 MPa) @ 24 hours, 1500 psi (10.3 MPa) @ 7 days and 2500 psi (17.2 MPa) @ 28 days
 - e. Consistency: Gel-like
 - f. Unit weight lb/cu ft: ~128 lbs (2051 kg/m³)

PART 3 – EXECUTION

3.10 EXAMINATION

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas landscaping from contact due to mixing and handling of materials.

3.20 SURFACE PREPARATION:

Comply with manufacturer's printed instructions and the following:

- A. Remove all spalled and unsound concrete from area to be repaired. If rusty reinforcing steel is present; it must be abrasive blasted to remove rust.
- B. Remove enough material to completely expose reinforcing steel.
- C. Large vertical or overhead patches deeper than 2" (50 mm) should contain reinforcing steel. Additional steel should be inserted using appropriate techniques, if none is present.
- D. Clean surface to be repaired of all materials including dust, oil, dirt and grease.
- E. Dampen with clean water before patching and remove standing water.

3.30 **MIXING:**

Comply with manufacturer's printed instructions and the following:

- A. Material should be mechanically mixed for approximately 3 minutes using a five gallon (19L) bucket with a ½" (12 mm) drill and paddle mixer. For large repairs a standard mortar mixer should be used.
- B. Add 1 gallon + 3 pints (5.2L) of clean water for each 60lb (27.2 Kg) bag. Add the powder to the water and mix to a stiff gel-like consistency. If mix is too firm, add water sparingly to reach the desired consistency. Do not mix more material than can be placed in 15 minutes.
- C. For repair deeper than 2" (51 mm), up to 30 lbs (13.6 Kg) of clean, high quality ½" (12 mm) gravel may be added to the mix per 60-lb (27.2 Kg) bag.
- D. Do not re-temper with additional water.

3.40 **APPLICATION:**

Comply with manufacturer's printed instructions and the following:

- A. Material should be trowel applied to a damp surface.
- B. Apply a thin layer with heavy trowel pressure and then build up to the desired thickness. Material obtains high bond strength without the use of bonding adhesives or acrylic additives.
- C. After initial set, the material may be trimmed and shaped to match the contours of existing patch area.
- D. Do not apply if temperatures are below 40°F (4°C) or are expected to go below 32° (0°C) within a 24 hour period. Use cold water in hot weather or hot water in cold weather to achieve desired grout temperature.

3.50 **CURING**

- A. No special procedures are required. During the first 24 hours, keep the patch covered or damp to prevent excessive loss of water.

3.60 **CLEANING**

- A. Remove excess material before material cures. If material has cured, remove using mechanical methods that will not damage substrate.

END OF SECTION