

## SHOP DRAWING TRANSMITTAL

<b>DATE RETURNED:</b> 3/25/2015	<b>DATE SENT:</b> 3/20/2015	<b>PAGE</b> <u>1</u> of <u>1</u>
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<b>TO/FROM: TEL.# 518-453-4734</b>  <b>CHA</b> <b>III WINNERS CIRCLE</b> <b>ALBANY, NY 12205</b> <b>ATTN:</b>	<b>TO/FROM: TEL.# ( )</b> <b>MARK SARGENT</b> <b>PROJECT MANAGER - STRUCTURES</b> <b>1 NATIONAL LIFE DRIVE</b> <b>MONTPELIER, VT 05633-5001</b>
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<b>CHA PROJECT No.20615</b> <b>CONTRACT No. BRF 3000(19)</b> <b>TITLE: RUTLAND CITY (RIPLEY ROAD)</b>	
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<b>SHOP DRAWING DATA: (TO BE FILLED IN BY CONTRACTOR)</b>  <b>TOPIC: SANITARY SEWER MANHOLE</b> <b>SPECIFICATION: 604.22</b>	
<i>DO NOT MIX SUBMISSIONS FROM DIFFERENT SPEC DIVISIONS ON THIS FORM. FILL OUT NEW FORM EACH TIME!</i>	<b>FOR CHA'S RECEIVED STAMP.</b>

THE ABOVE NAMED CONTRACTOR HAS EVALUATED EACH ITEM IDENTIFIED IN THIS TRANSMITTAL & CERTIFIES IT TO BE IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.

**\*\*THIS SUBMITTAL IS NOT BEING PRESENTED AS A SUBSTITUTION\*\***

**CERTIFIED BY:** \_\_\_\_\_ **TITLE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

ID NUMBER	QUANTITY		DESCRIPTION OF ITEM(S) BEING SUBMITTED <small>(Reference specification section and/or drawing number for each item being submitted)</small>	ENGINEER'S REVIEW STATUS
	SENT	RETURN		
604.22-01	1	1	Sanitary Sewer Manhole	NET

**NET = NO EXCEPTIONS TAKEN**                      **MCN = MAKE CORRECTIONS NOTED**                      **R&R = REVISE AND RESUBMIT**  
**REJ = REJECTED**                                      **SSI = SUBMIT SPECIFIED ITEM**                      **NR = NOT REVIEWED**  
**\*RESUBMIT REQUIRED IF REVIEW STATUS IS R&R, REJ, SSI**

<b>CONTRACTOR'S COMMENTS:</b>  	<b>Engineer's Comments:</b> None
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**(FOR ENGINEER'S INTERNAL USE ONLY)**

<b>Forwarded To:</b> <u>DALE GOZALKOWSKI</u>	<b>DUE BACK TO CONTRACTOR:</b> _____
<b>Reviewed By:</b> <u>JAMES RASHFORD</u>	<b>DATE SENT:</b> <u>3/20/2015</u>
<b>Returned to Contractor By:</b> <u>DALE GOZALKOWSKI</u>	<b>DATE RETURNED:</b> <u>3/27/2015</u>

**(ENTER DATE ABOVE)**



Rutland City BRF 3000 (2014036)  
SUBMITTAL 33

Issued 03/16/15  
Respond by 03/30/15

To  
**Timothy Pockette, PE**

Topic 604.22 Sanitary Sewer Manhole  
Status For Approval  
Spec section 604.22  
Responsibility (19) Ripley Road  
Sent to approver 3/16/15  
Required from approver 3/30/15

From  
**Volker H.D. Burkowski**

Signed by  Date 3/16/15

Proceed as Indicated \_\_\_\_\_ Date \_\_\_\_\_  
Owner Authorized Representative

- NO EXCEPTION TAKEN
- MAKE CORRECTIONS NOTED
- REJECTED
- REVISE AND RESUBMIT
- SUBMIT SPECIFIED ITEM

CHECKING IS ONLY FOR THE GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE; FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF THE WORK.



DATE 3/25/2015 BY James Rashford



# S.D. Ireland Companies \*Precast Division\*



193 Industrial Ave. Williston, VT 05495  
P.O. Box 2286 South Burlington, VT 05407  
p: 802-863-6222 f: 802-860-1528  
[www.sdireland.com](http://www.sdireland.com)

Attention: Niall Buxton  
Company: Champlain Constr  
Address:  
City, St, Zip:  
Ph: / Fax:

Date: 3/10/2015  
Job Name: Rutland BRF 3000(19) Ripley Street  
Job Number: SDI #15791  
Regarding: Sewer Manholes

WE ARE SENDING:  Quote  Details  Other: \_\_\_\_\_  
 Submittals  Prints  Plans  Specifications  
 Copy Of Letter  Change Order  Samples  Revised Submittals

Copies	Date	Pages	Description
1	3/9/2015	1	Transmittal Cover
1	3/9/2015	17	SMH's, structure type, mastic, castings, boots, inverts, coating, ladders

These Are Submitted as Checked Below:

For Approval  Approved as Submitted  Resubmit \_\_ Copies for Approval  
 For Your Use  Approved as Noted  Submit\_\_ Copies for Distribution  
 As Requested  Returned for Corrections  Return \_\_ Corrected Prints  
 For Review and Comment  Prints Returned After Loan to Us  
 For Bids Due: \_\_\_\_\_  Other:

### Notes/Remarks:

SMH-8: submitted with 523.01 "IN" at 180 degrees. Please advise if otherwise?

SMH-10: 8" "OUT" at 511.63 and with PVC, and 8" "IN" at 511.73 also PVC.

This submittal reflects ductile and pvc boots accordingly

NO EXCEPTION TAKEN  MAKE CORRECTIONS NOTED  
 REJECTED  REVISE AND RESUBMIT  
 SUBMIT SPECIFIED ITEM

Thank you.

Tim Dudley, S D Ireland Precast Div, 802-863-6222 ext 253

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Copy To: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signed:

If enclosures are not as noted, kindly notify us at once.



DATE 3/25/2015 BY James Rashford

Job: 15791 Customer: CHAMPLAIN CONST INC  
 Job Name Rutland City BRF 3000 (19) Ripley

Structure Code: SMH-6  
 Station:

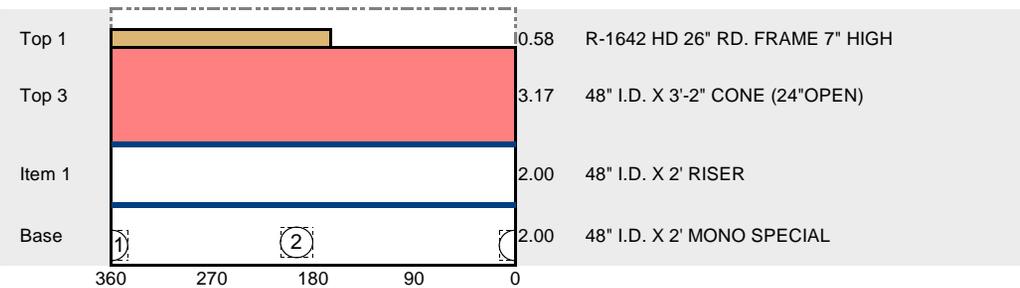
Type: Sanitary  
 Description: 48" I.D. Sanitary Manhole

**Structure Product Detail**

Item	Product	Qty	Product Description	Yards	Weight
	2000000	0.5	TRUCKING, FLAT BED	0.00	0
Rim	N164250	1	R-1642 HD 26" RD. LID "SEWER"	0.00	126
Top 3	0548473	1	48" I.D. X 3'-2" CONE (24" OPEN)	0.68	2,700
Top 1	N164220	1	R-1642 HD 26" RD. FRAME 7" HIGH	0.00	147
Item 1	0548482	1	48" I.D. X 2' RISER	0.43	1,734
Base	0548020	1	48" I.D. X 2' MONO SPECIAL	0.87	3,477
Misc 1	1403100	4	MASTIC, CON-SEAL, 1" X 14 1/2" (8 ROLLS/BOX) CS-102	0.00	5
Misc 2	1600013	7	LADDER RUNG, PS2-PFSL 13 3/4" (1 1/4" DIA) (500/P)	0.00	7
Acces	40612W	2	BOOT, KOR N SEAL 12W-(1-180 BAND)C-12-2-10 IPS	0.00	14
	0930002	1	INVERT, SLOPED FOR 2 LINES	0.57	2,300
	1614801	10	Coating for 48" ID	0.00	0
	1211180	2	BAND, KOR-N-SEAL 1-180	0.00	0
<b>Structure Totals</b>				<b>2.55</b>	<b>10,510</b>

**Inside Area View**

Rim to Invert	8.10'	Precast Height	7.75'	Wall	5.00"
Less Casting	8.10'	Floor	8.00"	Sump	0.33'
Invert to Floor	0.33'	Plus Floor	8.42'		
Adjustment (Brick/Mort.)	0.68				



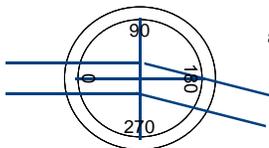
**Elevations**

Rim	Elev	Angle	Pipe	Hole Type	Hole" Height	Hole" Width	Up"	Item
	531.93							
(1)	523.83	0	8 DUCTILE	40612WP	12	12	2	Base
(2)	523.93	195	8 DUCTILE	40612WP	12	12	3	Base
(3)					0	0	0	
(4)					0	0	0	
(5)					0	0	0	
(6)					0	0	0	
(7)					0	0	0	
(8)					0	0	0	

Description: 48" I.D. X 2' MONO SPECIAL  
 Product ID: 0548020S  
 Item: Base

Step Location: 90

8 DUCTILE/40612WP  
 H 12" / W 12.00"  
 Over: .00  
 Up: 2" / Ang 0



8 DUCTILE/40612WP  
 H 12" / W 12.00"  
 Over: 81.64  
 Up: 3" / Ang 195

- NO EXCEPTION TAKEN
- MAKE CORRECTIONS NOTED
- REJECTED
- REVISE AND RESUBMIT
- SUBMIT SPECIFIED ITEM

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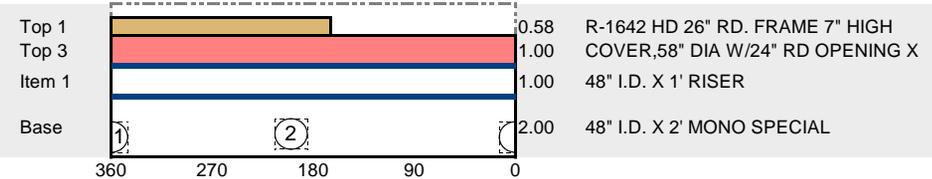
DATE 3/25/2015 BY James Rashford

**Structure Product Detail**

Item	Product	Qty	Product Description	Yards	Weight
	2000000	0.5	TRUCKING, FLAT BED	0.00	0
Rim	N164250	1	R-1642 HD 26" RD. LID "SEWER"	0.00	126
Top 3	0548503	1	COVER,58" DIA W/24" RD OPENING X 12" HIGH	0.43	1,700
Top 1	N164220	1	R-1642 HD 26" RD. FRAME 7" HIGH	0.00	147
Item 1	0548481	1	48" I.D. X 1' RISER	0.22	867
Base	0548020	1	48" I.D. X 2' MONO SPECIAL	0.87	3,477
Misc 2	1600013	4	LADDER RUNG,PS2-PFSL 13 3/4"(1 1/4" DIA) (500/P)	0.00	4
Misc 1	1403100	4	MASTIC,CON-SEAL, 1" X 14 1/2' (8 ROLLS/BOX) CS-102	0.00	5
Acces	40612W	2	BOOT,KOR N SEAL 12W-(1-180 BAND)C-12-2-10 IPS	0.00	14
	0930002	1	INVERT,SLOPED FOR 2 LINES	0.57	2,300
	1211180	2	BAND,KOR-N-SEAL 1-180	0.00	0
<b>Structure Totals</b>				<b>2.09</b>	<b>8,640</b>

**Inside Area View**

Rim to Invert	4.70'	Precast Height	4.58'	Wall	5.00''
Less Casting	4.70'	Floor	8.00''	Sump	0.33'
Invert to Floor	0.33'	Plus Floor	5.25'		
Adjustment (Brick/Mort.)	0.45				



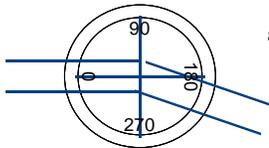
**Elevations**

Rim	Elev	Angle	Pipe	Hole Type	Hole" Height	Hole" Width	Up"	Item
	528.17							
(1)	523.47	0	8 DUCTILE	40612WP	12	12	2	Base
(2)	523.57	200	8 DUCTILE	40612WP	12	12	3	Base
(3)		0			0	0	0	
(4)		0			0	0	0	
(5)		0			0	0	0	
(6)		0			0	0	0	
(7)		0			0	0	0	
(8)		0			0	0	0	

Description: 48" I.D. X 2' MONO SPECIAL  
 Product ID: 0548020S  
 Item: Base

Step Location: 90

8 DUCTILE/40612WP  
 H 12" / W 12.00"  
 Over: .00  
 Up: 2" / Ang 0



8 DUCTILE/40612WP  
 H 12" / W 12.00"  
 Over: 83.73  
 Up: 3" / Ang 200

- NO EXCEPTION TAKEN
- MAKE CORRECTIONS NOTED
- REJECTED
- REVISE AND RESUBMIT
- SUBMIT SPECIFIED ITEM

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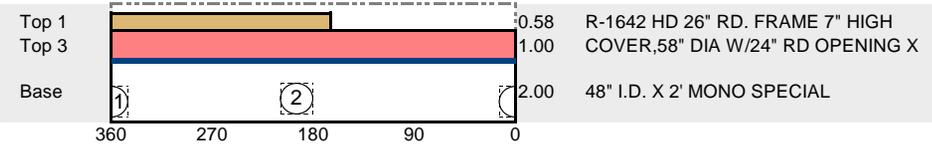
DATE 3/25/2015 BY James Rashford

**Structure Product Detail**

Item	Product	Qty	Product Description	Yards	Weight
	2000000	0.5	TRUCKING, FLAT BED	0.00	0
Rim	N164250	1	R-1642 HD 26" RD. LID "SEWER"	0.00	126
Top 3	0548503	1	COVER,58" DIA W/24" RD OPENING X 12" HIGH	0.43	1,700
Top 1	N164220	1	R-1642 HD 26" RD. FRAME 7" HIGH	0.00	147
Base	0548020	1	48" I.D. X 2' MONO SPECIAL	0.87	3,477
Misc 2	1600013	2	LADDER RUNG,PS2-PFSL 13 3/4"(1 1/4" DIA) (500/P)	0.00	2
Misc 1	1403100	2	MASTIC,CON-SEAL, 1" X 14 1/2' (8 ROLLS/BOX) CS-102	0.00	2
Acces	40612W	2	BOOT,KOR N SEAL 12W-(-1-180 BAND)C-12-2-10 IPS	0.00	14
	1614801	4	Coating for 48"ID	0.00	0
	0930002	1	INVERT,SLOPED FOR 2 LINES	0.57	2,300
	1211180	2	BAND,KOR-N-SEAL 1-180	0.00	0
<b>Structure Totals</b>				<b>1.87</b>	<b>7,769</b>

**Inside Area View**

Rim to Invert	3.54'	Precast Height	3.58'	Wall	5.00''
Less Casting	3.54'	Floor	8.00''	Sump	0.33'
Invert to Floor	0.33'	Plus Floor	4.25'		
Adjustment (Brick/Mort.)	0.29				



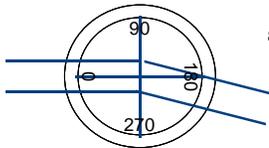
**Elevations**

Rim	Elev	Angle	Pipe	Hole Type	Hole" Height	Hole" Width	Up"	Item
	526.45							
(1)	522.91	0	8 DUCTILE	40612WP	12	12	2	Base
(2)	523.01	195	8 DUCTILE	40612WP	12	12	3	Base
(3)					0	0	0	
(4)					0	0	0	
(5)					0	0	0	
(6)					0	0	0	
(7)					0	0	0	
(8)					0	0	0	

Description: 48" I.D. X 2' MONO SPECIAL  
 Product ID: 0548020S  
 Item: Base

Step Location: 90

8 DUCTILE/40612WP  
 H 12" / W 12.00"  
 Over: .00  
 Up: 2" / Ang 0



- NO EXCEPTION TAKEN
- MAKE CORRECTIONS NOTED
- REJECTED
- REVISE AND RESUBMIT
- SUBMIT SPECIFIED ITEM

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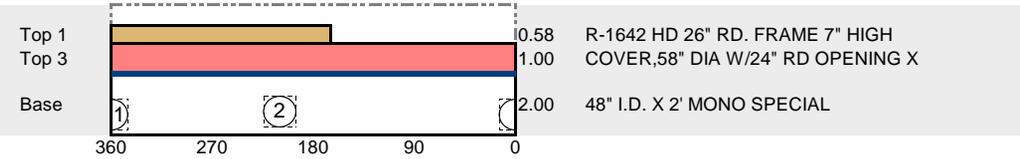
DATE 3/25/2015 BY James Rashford

**Structure Product Detail**

Item	Product	Qty	Product Description	Yards	Weight
	2000000	0.5	TRUCKING, FLAT BED	0.00	0
Rim	N164250	1	R-1642 HD 26" RD. LID "SEWER"	0.00	126
Top 1	N164220	1	R-1642 HD 26" RD. FRAME 7" HIGH	0.00	147
Top 3	0548503	1	COVER,58" DIA W/24" RD OPENING X 12" HIGH	0.43	1,700
Base	0548020	1	48" I.D. X 2' MONO SPECIAL	0.87	3,477
Misc 1	1403100	2	MASTIC,CON-SEAL, 1" X 14 1/2' (8 ROLLS/BOX) CS-102	0.00	2
Misc 2	1600013	2	LADDER RUNG,PS2-PFSL 13 3/4"(1 1/4" DIA) (500/P)	0.00	2
Acces	40612W	2	BOOT,KOR N SEAL 12W-(1-180 BAND)C-12-2-10 IPS	0.00	14
	0930002	1	INVERT,SLOPED FOR 2 LINES	0.57	2,300
	1614801	4	Coating for 48"ID	0.00	0
	1211180	2	BAND,KOR-N-SEAL 1-180	0.00	0
<b>Structure Totals</b>				<b>1.87</b>	<b>7,769</b>

**Inside Area View**

Rim to Invert	3.93'	Precast Height	3.58'	Wall	5.00''
Less Casting	3.93'	Floor	8.00''	Sump	0.33'
Invert to Floor	0.33'	Plus Floor	4.25'		
Adjustment (Brick/Mort.)	0.68				



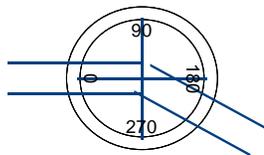
**Elevations**

Rim	Elev	Angle	Pipe	Hole Type	Hole" Height	Hole" Width	Up"	Item
	526.03							
(1)	522.1	0	8 DUCTILE	40612WP	12	12	2	Base
(2)	522.2	210	8 DUCTILE	40612WP	12	12	3	Base
(3)		0			0	0	0	
(4)		0			0	0	0	
(5)		0			0	0	0	
(6)		0			0	0	0	
(7)		0			0	0	0	
(8)		0			0	0	0	

Description: 48" I.D. X 2' MONO SPECIAL  
 Product ID: 0548020S  
 Item: Base

Step Location: 90

8 DUCTILE/40612WP  
 H 12" / W 12.00"  
 Over: .00  
 Up: 2" / Ang 0



8 DUCTILE/40612WP  
 H 12" / W 12.00"  
 Over: 87.92  
 Up: 3" / Ang 210

- NO EXCEPTION TAKEN
- MAKE CORRECTIONS NOTED
- REJECTED
- REVISE AND RESUBMIT
- SUBMIT SPECIFIED ITEM

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DATE 3/25/2015 BY James Rashford

Job: 15791 Customer: CHAMPLAIN CONST INC  
 Job Name Rutland City BRF 3000 (19) Ripley

Structure Code: SMH-10  
 Station:

Type: Sanitary  
 Description: 48" I.D. Sanitary Manhole

**Structure Product Detail**

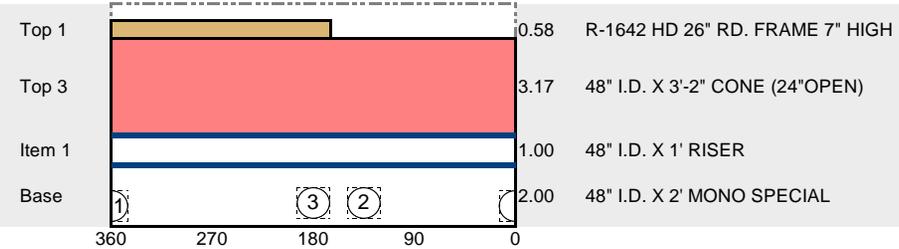
Item	Product	Qty	Product Description	Yards	Weight
	2000000	0.5	TRUCKING, FLAT BED	0.00	0
Rim	N164250	1	R-1642 HD 26" RD. LID "SEWER"	0.00	126
Top 1	N164220	1	R-1642 HD 26" RD. FRAME 7" HIGH	0.00	147
Top 3	0548473	1	48" I.D. X 3'-2" CONE (24"OPEN)	0.68	2,700
Item 1	0548481	1	48" I.D. X 1' RISER	0.22	867
Base	0548020	1	48" I.D. X 2' MONO SPECIAL	0.86	3,429
Misc 1	1403100	4	MASTIC,CON-SEAL, 1" X 14 1/2' (8 ROLLS/BOX) CS-102	0.00	5
Misc 2	1600013	6	LADDER RUNG,PS2-PFSL 13 3/4"(1 1/4" DIA) (500/P)	0.00	6
Acces	40612W	1	BOOT,KOR N SEAL 12W-(1-180 BAND)C-12-2-10 IPS	0.00	7
Acces	60612A	2	BOOT,KOR-N-SEAL 12A-(1-180 BAND)	0.00	14
	0930002	1	INVERT,SLOPED FOR 2 LINES	0.57	2,300
	1614801	7	Coating for 48"ID	0.00	0
	1211180	3	BAND,KOR-N-SEAL 1-180	0.00	0

**Elevations**

Rim	Elev	Angle	Pipe	Hole Type	Hole" Height	Hole" Width	Up"	Item
	518.6							
(1)	511.63	0	8 PVC	60612AWP	12	12	2	Base
(2)	511.73	135	8 DUCTILE	40612WP	12	12	3	Base
(3)	511.73	180	8 PVC	60612AWP	12	12	3	Base
(4)		0			0	0	0	
(5)		0			0	0	0	
(6)		0			0	0	0	
(7)		0			0	0	0	
(8)		0			0	0	0	

**Inside Area View**

Rim to Invert	6.97'	Precast Height	6.75'	Wall	5.00''
Less Casting	6.97'	Floor	8.00''	Sump	0.33'
Invert to Floor	0.33'	Plus Floor	7.42'		
Adjustment (Brick/Mort.)	0.55				

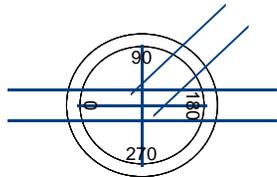


Description: 48" I.D. X 2' MONO SPECIAL  
 Product ID: 0548020S  
 Item: Base

Step Location: 90

8 DUCTILE/40612WP  
 H 12" / W 12.00"  
 Over: 56.52  
 Up: 3" / Ang 135

8 PVC/60612AWP  
 H 12" / W 12.00"  
 Over: .00  
 Up: 2" / Ang 0



8 PVC/60612AWP  
 H 12" / W 12.00"  
 Over: 75.36  
 Up: 3" / Ang 180

- NO EXCEPTION TAKEN
- MAKE CORRECTIONS NOTED
- REJECTED
- REVISE AND RESUBMIT
- SUBMIT SPECIFIED ITEM

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DATE 3/25/2015 BY James Rashford

## Standard Sizes

### Flat Top

Height	Weight
1'-0"	1,620 lb
1'-6"	2,040 lb

### Opening

Size	Shape
24"	Square
24"	Round
30"	Square
30"	Round

### Cone

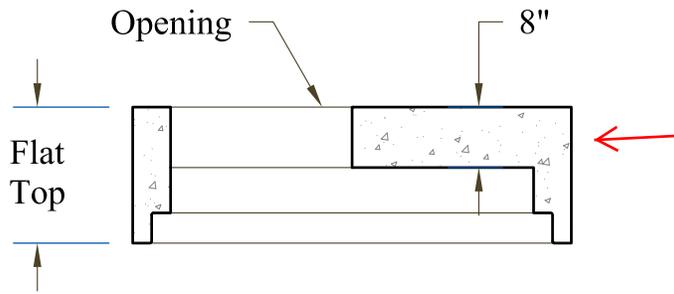
Height	Hole	Weight
2'-2"	30"Ø	1,620 lb
2'-4"	24"Ø	2,040 lb
3'-2"	24"Ø	2,040 lb

### if/as needed Riser

Height	Weight
1'-0"	845 lb
2'-0"	1,690 lb
3'-0"	2,535 lb
4'-0"	3,380 lb
5'-0"	4,225 lb

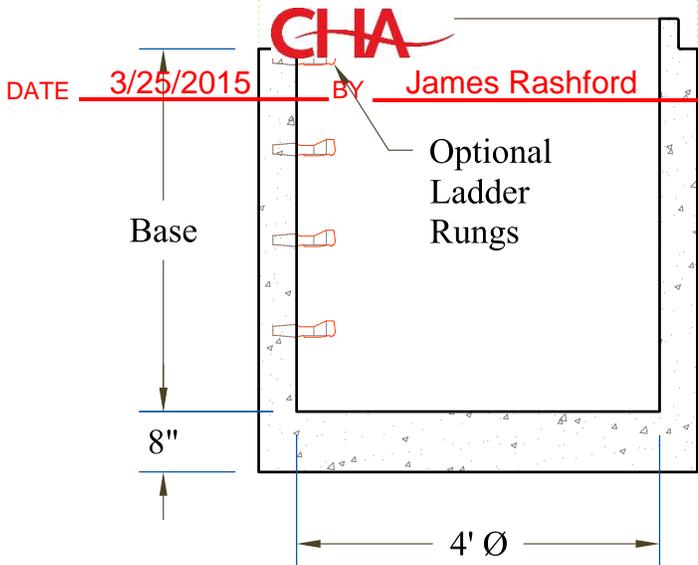
### as needed Base

Height	Weight
1'-0"	2,770 lb
2'-0"	3,615 lb
3'-0"	4,460 lb
4'-0"	5,305 lb
5'-0"	6,150 lb
6'-0"	6,995 lb



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Section View

Custom Heights & Openings Available

#### Design Notes:

- Concrete Minimum 5000 psi at 28 days
- Cut Outs for Pipe Entries or Flexible Sleeves as Required
- Optional Steel Reinforced Copolymer Polypropylene Ladder Rungs at 12" O.C. or as Required
- Meets AASHTO H-20 Loading
- Meets ASTM C-478 Specifications
- Weights May Vary



**CONSEAL™**  
Concrete Sealants INC.

**CS102**

Butyl Rubber Sealant For All Precast Structures;  
Meets Specs.

**APPLICATIONS**

For self-sealing joints in: Manholes, Concrete Vaults, Septic Tanks, Concrete Pipe, Box Culverts, Utility Vaults, Burial Vaults, and Vertical Panel Structures.

**SEALING PROPERTIES**

- Provides permanently flexible watertight joints
- Low to high temperature workability: 30°F to 120°F (1°C to 48°C)
- Rugged service temperature: -30°F to +200°F (-34°C to +93°C)
- Excellent chemical and mechanical adhesion to clean, dry surfaces
- Sealed Joints will not shrink, harden or oxidize upon aging
- No priming normally necessary. When confronted with difficult installation conditions, such as wet concrete or temperatures below 45°F (4°C), priming the concrete will improve the bonding action. Consult Concrete Sealants for the proper primer to meet your application.

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**HYDROSTATIC STRENGTH**

DATE 3/25/2015 BY James Rashford

ConSeal CS-102 meets the hydrostatic performance requirement as set forth in ASTM C-990 section 10.1 (Performance requirement: 10psi for 10 minutes in straight alignment – in plant, quality control test for joint materials.)

**SPECIFICATIONS**

ConSeal CS-102 meets or exceeds the requirements of Federal Specification SS-S-210 (210-A), AASHTO M-198B, and ASTM C-990-91.



**CONSEAL™**  
Concrete Sealants INC.

**CS102**

**Butyl Rubber Sealant For All Precast Structures;  
Meets Specs.**

**PHYSICAL PROPERTIES**

	<b>Spec</b>	<b>Required*</b>	<b>CS 102</b>
Hydrocarbon blend content % by weight	ASTM D4 (mod.)	50% min.	51%
Inert mineral filler % by weight	AASHTO T111	30% min.	35%
Volatile Matter % by weight	ASTM D6	2% max.	1.2
Specific Gravity, 77°F	ASTM D71	1.15-1.50	1.25
Ductility, 77°F	ASTM D113	5.0 min.	10
Penetration, cone 77°F, 150 gm. 5 sec.	ASTM D217	50-100	55-60
Penetration, cone 32°F, 150 gm. 5 sec.	ASTM D217	40 mm	40-65
Flash Point, C.O.C., °F	ASTM D92	350°F min.	450°F
Fire point, C.O.C., °F	ASTM D92	375°F min.	475°F

**IMMERSION TESTING**

- 30-Day Immersion Testing: No visible deterioration when tested in 5% Caustic Potash, 5% Hydrochloric Acid, 5% Sulfuric Acid, and 5% saturated Hydrogen Sulfide. \*
- One Year Immersion Testing: No visible deterioration when tested in 5% Formaldehyde, 5% Formic Acid, 5% Sulfuric Acid, 5% Hydrochloric Acid, 5% Sodium Hydroxide, 5% Hydrogen Sulfide and 5% Potassium Hydroxide.
- Requirements of ASTM C-990 Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.

**LIMITED WARRANTY**

This information is presented in good faith, but we cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, may be used. We accept no responsibility for results obtained by the application of this information or the safety and suitability of our products, either alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each such product or product combinations for their own purposes. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for this own particular use. We sell this product without warranty, and buyers and users assume all responsibility and liability for loss or damage arising from the handling and use of this product, whether used alone or in combination with other products.

NO EXCEPTION TAKEN  
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THIS WORK WITH THAT OF ALL OTHER TRADES AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE WORK.

P.O. Box 176, New Carlisle OH, 45344 • 937-845-8776 or 800-332-7325

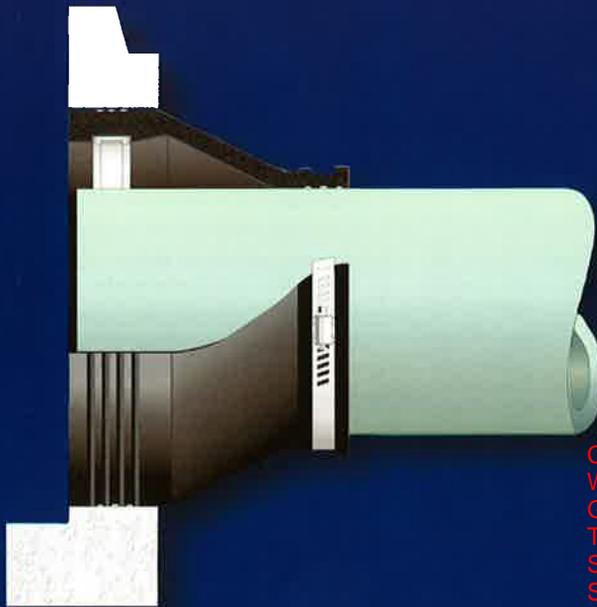
FAX 937-845-3587 • [www.conseal.com](http://www.conseal.com)



DATE 3/25/2015 BY James Rashford

# Kor-N-Seal® I

## 106/406 Series Pipe-to-Manhole Connector



- Most widely used flexible connector in sanitary sewer applications throughout the world

- NO EXCEPTION TAKEN
- MAKE CORRECTIONS NOTED
- REJECTED
- REVISE AND RESUBMIT
- SUBMIT SPECIFIED ITEM

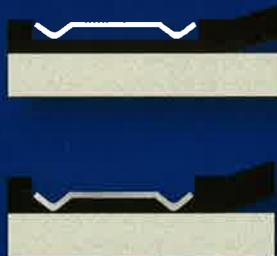
• Easy-to-Install

• Meets the specifications of ASTM C923

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**CHA**

DATE 3/25/2015 BY James Rashford



Patented Waveband technology creates a more effective seal by concentrating the compressive force of the expansion band. The rubber is "captured" between the band and the concrete.

# Kor-N-Seal I

## 106/406 Series Pipe-to-Manhole Connector

### Wedge Style Connectors

#### EX Series Plastic or Stainless Steel

Installation requires a 1/2" socket wrench & preset torque limiter.



PIPE O.D. RANGE	MODEL NUMBER	NOMINAL HOLE SIZE
1.80 - 4.80	S106-7SW	7"
3.50 - 4.50	S106-7W	7"
4.20 - 6.40	S106-8SW	8"
1.70 - 4.80	S106-8M	8"
6.00 - 6.75	S406-10AW	10"
7.50 - 8.20	S406-10W	10"
6.00 - 6.75	S406-10.5AW	10½"
7.50 - 8.70	S406-10.5W	10½"
6.00 - 7.00	S406-11BW	11"
7.50 - 9.00	S406-11AW	11"
6.00 - 7.00	S406-12CW	12"
6.25 - 7.50	S406-12BW	12"
7.50 - 9.00	S406-12AW	12"
9.00 - 10.20	S406-12W	12"
5.75 - 7.00	S106-12BW	12"
7.00 - 8.50	S106-12AW	12"
8.25 - 9.75	S106-12W	12"
9.50 - 11.25	S106-14AW	14"
9.50 - 11.25	S106-16BW	16"
11.25 - 13.00	S106-16AW	16"
13.00 - 14.20	S106-16W	16"
14.00 - 15.50	S106-20BWS	20"
15.50 - 17.00	S106-20AWS	20"
17.00 - 18.15	S106-20WS	20"



NO EXCEPTION TAKEN  
 REJECTED

MAKE CORRECTIONS NOTED  
 REVISE AND RESUBMIT

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Refer to Recommended Installation Instructions.

### Toggle Style Connectors (Jack-In Style)

Installation requires a hydraulic jack assembly



PIPE O.D. RANGE	MODEL NUMBER	NOMINAL HOLE SIZE
1.80 - 4.80	S106-7ST	7"
3.50 - 4.50	S106-7T	7"
4.20 - 6.40	S106-8ST	8"
5.10 - 5.90	S106-8T	8"
6.00 - 6.75	S406-10AT	10"
7.50 - 8.40	S406-10T	10"
6.00 - 6.75	S406-10.5AT	10½"
7.50 - 8.90	S406-10.5T	10½"
6.00 - 7.00	S406-11BT	11"
7.50 - 9.00	S406-11AT	11"
6.00 - 7.00	S406-12CT	12"
6.25 - 7.50	S406-12BT	12"
7.50 - 9.00	S406-12AT	12"
9.00 - 10.50	S406-12T	12"
5.75 - 7.00	S106-12BT	12"
7.00 - 8.50	S106-12AT	12"
8.25 - 9.75	S106-12T	12"
9.50 - 11.25	S106-14AT	14"
9.50 - 11.25	S106-16BT	16"
11.25 - 13.00	S106-16AT	16"
13.00 - 14.50	S106-16T	16"

Refer to Recommended Installation Instructions.  
 Do not use Toggle Style Connectors:  
 Expander Assembly (p/n 90225)  
 8" Extension (p/n 13808)

### Ordering Information

Kor-N-Seal I:  
 106/406 Series  
 Pipe-to-Manhole Connector



The 106 Series connector is 8 inches long, the 406 Series connector is 6 inches long. The number following the hyphen in our model numbers is the required hole size. The S106-20 Series is available in Stainless Steel Wedge only.

### Recommended Torque Values:

Connectors with 8" hole size and smaller:  
 Plastic Wedge - 3/16" Hex Head Torque Wrench - 5 ft. lbs.  
 Steel Wedge - 1/2" Socket Wrench - 8 ft. lbs.

Connectors with 10 - 20" hole sizes:  
 EX Series - 1/2" Socket Wrench - 12 - 20 ft. lbs.  
 Steel Wedge - 1/2" Socket Wrench - 12 ft. lbs.

Preset torque limiters are available. Contact Customer Service at 1-800-626-2180 for more information.

### For larger pipe sizes refer to Kor-N-Seal II Series Connectors

206 Series - For pipe sizes 15" - 51" in diameter.  
 306 Series - To fit larger pipe into smaller diameter manholes.  
 506 Series - Designed specifically for stormwater applications.

### Using Corrugated Pipe

Adapters are required when using Corrugated Pipe. Refer to the Corrugated Pipe Adapter Data Sheet for details.

Covered under U.S. Patent No. 5,738,359

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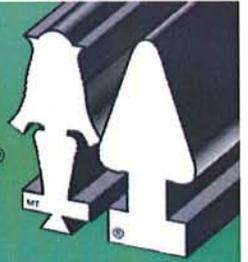


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Trelleborg Pipe Seals Milford, Inc.  
 P.O. Box 301, 250 Elm Street, Milford, New Hampshire 03055 U.S.A.  
 Tel: 800-626-2180 603-673-8680 Fax: 603-673-7271 www.trelleborg.com/npc



The Company With Connections®



SECONDARY INVERT FORMING SYSTEM

# TRU-CONTOUR

## TRU-CONTOUR



A-LOK Products, Inc. and Tru-Contour have joined forces to bring together the best in secondary precast inverts available today. The Tru-Contour Invert Forming System offers the manhole producer a very durable, systematic and versatile method of forming all invert configurations from 4" through 48" diameter.

## KEY ADVANTAGES

Two, three, and four way configurations including dead end combinations with a standard .2 ft. of elevation difference (fall) can be made easy and rapidly without the need for skilled labor.

Greater fall can be obtained based on the operators' ability to experiment. The system's versatility is due to an unlimited combination of four basic wedges. With the combination of one or more of these wedges, any angle can be obtained within 1.5 degrees. This allows enough flexibility to effectively form an invert which aligns perfectly with the entering pipeline.

System also available in Single Piece construction.

The Tru-Contour system cuts costly labor both in set-up and concrete finishing time. A basic three way can be set up in approximately fifteen minutes and depending on pouring procedures, can allow an average of four inverts per day to be formed from a single system. Finishing time is kept to a minimum due to the accuracy of flows the forms create. Each invert in regard to channel width, depth and radial turn is form finished.

The Tru-Contour standard system allows for 2/3 invert depth and is compatible with a variety of flexible pipe to manhole connectors. Full depth systems are also available.

The Tru-Contour assembly consists of:

- 1) A hole adapter which is designed to align the invert assembly with the flexible pipe to manhole connector. This insures pipe to invert compatibility.
- 2) A series of 4 wedges and straight sections which when combined provides an unlimited selection of angles to create enough flexibility to form an in invert within 1.5 degrees.
- 3) A stabilizing jack which prevents from floatation during casting operations. This insures that correct fall is maintained across the manhole base.

## AVAILABILITY CHART

SIZE (IN/DIA.)	2-WAY	3-WAY	4-WAY
4"	•	•	•
6"	•	•	•
8"	•	•	•
10"	•	•	•
12"	•	•	•
15"	•	•	•
18"	•	•	•
21"	•	•	•
24"	•	•	•
27"	•	•	•
30"	•	•	•
36"	•	•	•
42"	•	•	•
48"	•	•	•

NO EXCEPTION TAKEN       MAKE CORRECTIONS NOTED  
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**INSTALLATION INSTRUCTIONS**



#1 ASSEMBLY STARTS WITH CENTERING TRIANGLE IN LOW HOLE



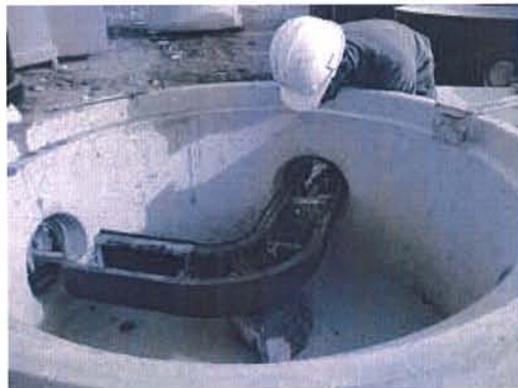
#4 POSITION ANTI FLOTATION BAR AND ADDITIONAL CHANNEL



#2 ASSEMBLE SMALLEST ANGLE WITH CENTERING ADAPTOR



#5 POSITION HUBS



#3 SMALLEST ANGLE ASSEMBLE IN LOW HOLE AND UPSTREAM SIDE.

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#6 COMPLETED THREE-WAY ASSEMBLY READY



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ANY QUESTIONS REGARDING TRU-CONTOUR INSTALLATION, PLEASE CALL 1-800-822-2565

All SMH's

NO EXCEPTION TAKEN

MAKE CORRECTIONS NOTED

REJECTED

REVISE AND RESUBMIT

SUBMIT SPECIFIED ITEM

### Bay Oil Company

38 Plainfield Street

Chicopee, MA 01013

Telephone: (413) 737-7728

FAX: (413) 737-7750

### Ebony

Waterproof and concrete sealer

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BY James Rashford

#### DESCRIPTIONS

- EBONY is a general purpose waterproof and concrete sealer
- Water and polymer based
- Manufactured from environmentally friendly, low VOC components

#### FEATURES

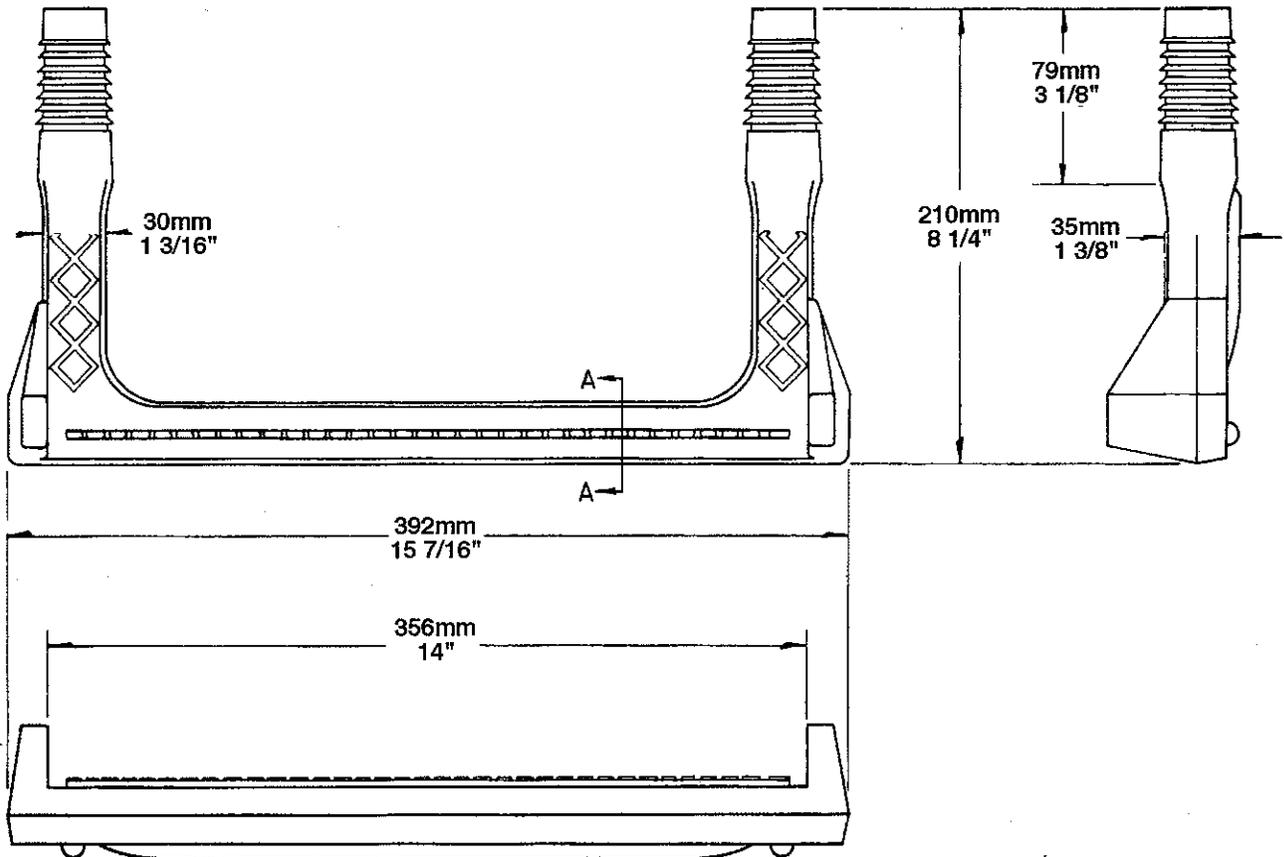
- For use on all types of concrete structures
- Non-Toxic environmentally friendly
- Extremely low VOC - meets requirements ASTM D 3792
- Creates a smooth, hard polymer film that protects the structure from water intrusions and chemical attack
- Quick fast drying 5-10 min. @ 72 F allowing rapid transportation of parts
- Roll on, spray, brush, 300-350 sq.ft./gallon
- Quick clean up, just soap and water removes from parts and skin
- No dangerous solvents
- Fire safe, water based
- Superior to asphalt based sealers, fast drying and cleanup, better coverage
- Graco Sprayer, .011"- .013" tip (Graco 1-800-328-0211)

#### PRODUCT USES

- Designed as a waterproof on;
- Manholes
- Septic tanks
- Utility vaults
- Concrete pipe
- Burial vaults

#### PHYSICAL AND CHEMICAL PROPERTIES

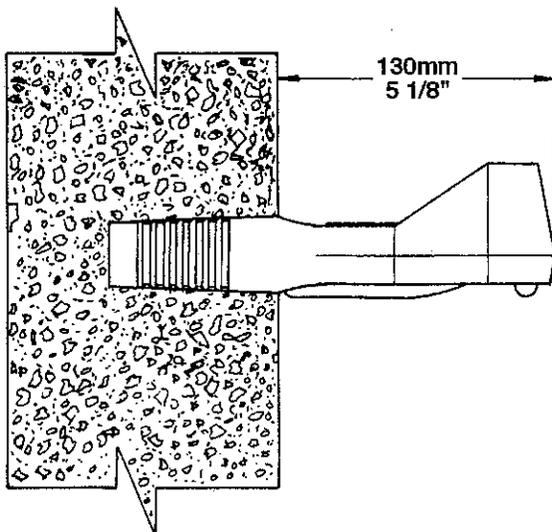
VOC	96.25 grams/liter
Density @ 77 F	8.25-8.45 lb/gal
Percent Solids (ASTM D 1644.75)	By weight 35%
Viscosity	25 sec . Zahn #2 @ 77 F
PH	8.5
Dry Time	5-10 minutes @ 77 F
Film Thickness	1.5 mils per coat
Coverage	275-350 sq.ft./gal.



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### Copolymer Polypropylene Plastic

13mm 1/2" GRADE 60 STEEL REINFORCEMENT



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SECTION-A



DATE 3/25/2015 BY James Rashford

- MEETS: ASTM-C-478
- ASTM-D-4101
- ASTM-A-615
- AASHTO-M-199



M. A. INDUSTRIES, INC.