



Department of Environmental Protection

2600 Blair Stone Road ♦ Tallahassee, Florida 32399-2400

DEP Form: 62-761.900(9)
Form Title: Storage Tank Equipment
Registration Form
Effective Date: July 2019
Incorporated in Rule 62-761.850, F.A.C.

Storage Tank System Equipment Registration Form

Fill out completely

General Information

Company Name: ZJ Industrial Products, LLC Contact Name: Callahan Williams
Company Address: 250 North Red Cliffs Drive #4B-236 City, State: St. George, Utah Zip: 84790
E-mail: callahan@zjproducts.com Contact Number: 844-850-0005
Product Name: RigidFlex, RF-Eco
Model Number(s): RigidFlex, Test Fittings Product Type: Sump entry and test fittings
Rule(s) citation that registration is being requested within Chapter 62-761 (UST), and/or 62-762 (AST), 62-761.500 62-762.501

F.A.C.: Write a brief description of equipment registration request including product limitations:

Sump entry and pipe test fittings for new construction in UST and AST system applications.

Information Checklist (Choose Yes, No, or N/A - Not Applicable):

	Yes	No	N/A
1. Third-party Certification by a Nationally Recognized Testing Laboratory? (Required)	☒	☐	☐
2. Documentation of third-party evaluation that the equipment meets DEP Rules?	☒	☐	☐
3. Documents included about the qualifications of the Nationally Recognized Testing Laboratory?	☒	☐	☐
4. Technical information and drawings included?	☒	☐	☐
5. Installation instructions included?	☒	☐	☐
6. Annual Operability Testing Requirements (Rules 62-761.500, 62-762.501, & 62-762.502 F.A.C.)?	☐	☐	☒
7. Integrity Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702, F.A.C.)?	☐	☐	☒
8. Compatible with fuel blends containing >10% ethanol or >20% biodiesel?	☒	☐	☐
9. Has the product been approved or registered in other countries or states? (If so provide list)	☐	☐	☐
10. Any requirements for company-certified installers or trainers?	☒	☐	☐
11. Was this product(s) previously approved or registered by the Department? If yes, EQ- <u>806</u>	☒	☐	☐
12. Any changes or modifications to the equipment since the last submittal to DEP?	☒	☐	☐

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknotify@floridadep.gov, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

The universal design is used with any manufacturer pipe and sump equipment. It features a compression seal design and an optional industry-first, UV resistant material design (for AST applications). The single-hole, easy installation offers simple solutions

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

Callahan Williams - General Manager

Callahan Williams

June 12, 2020

Printed Name and Title

Signature (right click to sign)

Date

For Department Use Only:

Date Application Received: June 19, 2020 Application complete: Yes: ☒ No: ☐

EQ- 938 Date of complete or incomplete letter sent: June 19, 2020 Date Equipment Requires Renewal: June 19, 2025

Storage tank system equipment requires renewal every 5 years in accordance with subsection 62-761.850(2), F.A.C.

RIGIDFLEX INSTALLATION INSTRUCTIONS



Step 1

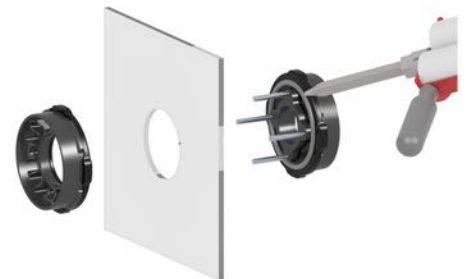
Using a hole saw, cut the appropriate size hole in the sump wall at the location of the desired pipe entry. Clean surface area around the hole where fitting gaskets will make contact with Acetone.

- For Small Housing Fittings - 3.25 " Hole Saw
- For Medium Housing Fittings - 5.5 " Hole Saw
- For Large Housing Fittings - 6.625" Hole Saw



Step 2

Apply a 1/4" bead of gasket sealant on both inside and outside gasket surfaces, Sikaflex 1a or PetrolSeal sealant material where applicable.



Step 3

Slide the exterior housing with the over-molded bolts through the hole in the sump wall with the bolts facing the interior of the sump. Ensure the fitting is properly centered in the hole. Install the interior housing over the bolts and snap together. If installed on a curved wall sump, rotate the housings/gaskets such that they fit properly to the curved surface.



Step 4

Install the 7/16" locknuts over the bolts and tighten in a star pattern until both gaskets are fully seated evenly and tightly against the sump wall. Tighten nuts to approximately 65-75 inch lbs.



Step 5

NOTE: The pipe or conduit should enter the fitting as straight as possible with no more than a 7° angle unless otherwise accommodated with a parts specification. If an angled entry is desired, a larger housing may be necessary. Please contact ZJI for information.



Step 6

In the order depicted, slide pipe through the housing and slide the interior boot over the pipe end and on to the housing cuff.

NOTE: If a separate insert is included in the kit, it is recommended that you apply FastFuse bonding glue to the mouth of the boot and around the sides of the insert right before pushing it into the boot to provide a more solid secure seal. No cure time is required. Simply tighten down the stainless steel band clamp completely as stated in the next step.



Step 7

Once the final connections are made with the pipe in the sump, seat the boots completely on to the cuffs of the fitting housing. Install band clamps on each boot and tighten to approximately 65 inch lbs or until securely tight. Unless a filled boot option has been specified, you are now completed and ready to test.

NOTE: If the fitting has a filled boot option, you can now dispense the filler material (FastFill or PetrolSeal) into one of the two ports provided in the boot. Rotate the vent port to the 12:00 position. When completed you are ready to test. No cure time is required to proceed to testing afterwards.





zjproducts.com
844.850.0005
info@zjproducts.com

ZJ INDUSTRIAL STATEMENT OF MATERIALS

Durable, lasting materials are a critical benchmark in providing quality containment sump fittings. In addition to years of shop and field testing, ZJ Industrial has considered opinions and data from customers, suppliers, polymer materials manufacturers, Underwriter Laboratories, and independent research agencies, as well as successful consulting with test facilities including UL, Eryou Engineering, and the European Polymer Research Laboratory at Queens University, to confirm the suitability of the materials and applications made available for the demanding environments represented in UST and AST secondary containment sumps. Components and fittings found to use urethane and nitrile rubber based materials have proven unreliable and vulnerable to the harsh conditions often associated with sump environments. To circumvent degradation due to age, hydrolysis, microbial corrosion, and hydrocarbon vapor penetration, ZJ Industrial has targeted material products to exceed all current market standards.

ZJ Industrial provides fittings with the highest quality materials available in the market. From the interior housing forged with glass-filled nylon for strength and stiffness to the stainless steel clamps, bolts and nuts. ZJ Industrial is excited to reveal that each fitting and test boot is constructed of “ProTex”, an exciting advancement in material design for containment sump pipe entry and test fitting components. ProTex contains no urethane, is proven to be all fuels compatible (methanol, ethanol, and bio-fuels in all typical blends), exhibits no measurable hydrolysis, is naturally anti-microbial, and offers significant UV resistance. It demonstrates incredible memory, retains its elasticity over time, and in combination with the other properties, it is a material that should last through the end-life of a containment sump when properly installed.

ProTex has been aggressively tested to ensure compatibility with all the latest fuel types and blends and while using real-world scenarios (true sump environments). Countless hours of field and benchmark testing demonstrate ProTex performs significantly better than other UL listed materials available in the current marketplace. Original UL971 testing confirmed that ProTex meets their standard for fuel compatibility. Testing also included High Density Hydrocarbons; Ozone; UV; High & Low-Temperatures; Water Saturation, and all current types of Fuels Saturation; Tensile Strength; Flexibility & Compression (with Torque); Microbial Corrosion; and Vibration Stress. Additionally, in the summer of 2018, ZJ Industrial successfully completed another round of 3rd-party testing to the new and more extensive UL2447 standard requirements for product application effectiveness and compatibility.

All ZJ Industrial fittings are manufactured using ProTex material, glass-filled nylon and stainless steel clamps, bolts and nuts and, by doing so, offers the highest quality, most durable solution in the market.

N. D. Eryou, PhD, PE
Consulting Engineer

Southwest Florida Office
5051 Castello Drive, Suite
244
Naples, FL 34103

Central Florida Office
1460 Breezy Way
Spring Hill, FL 34608
(For all shipments)

Phone: (352) 684-7275 Fax: (800) 660-6724
Email: alex@eryouengineering.com

CERTIFICATE OF COMPLETION OF THIRD-PARTY UL 2447 EVALUATION

July 31, 2018

Mr. Paul Howell
General Manager
ZJ Industrial Products, LLC
473 S. River Road, #1-236
St George, UT 84790

Dear Mr. Howell:

Reference Number: ZJI07312018

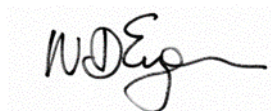
UL 2447 "Outline of Investigation for Containment Sumps, Fittings and Accessories for Fuels"

Products Evaluated: ZJI RigidFlex/RF-Eco Sump Penetration and Test Reducer Fittings

Our UL 2447 Third-Party Certification inspection and testing process of your products listed above has been completed and they were determined to comply with the above listed requirements.

While the products tested met the UL 2447 requirements, you should be aware that UL has the exclusive right to allow your firm to apply the UL label to your products as their labeling program includes an extensive ongoing UL quality control program.

Respectfully,



N.D. Eryou, PhD, P.E.

ZJI – UL 2447 Evaluation 082218



**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

BOB MARTINEZ CENTER
2600 BLAIRSTONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

RICK SCOTT
GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

April 10, 2013

Certified Mail, Return Receipt Requested
Number 7000 0520 0020 9373 6284

Mr. Paul Reber
Icon Containment Solutions, LLC
Suite C
870 West Robinson Drive
N Salt Lake, UT 84054

Subject: Approval of the Icon Containment Solutions, LLC
ForTex & RigidFlex sump entry fittings, Sikaflex-1a sealant, FastFill (polyurea)
sealant and PetroSeal sealant
File No. EQ-806

Dear Mr. Reber:

The Bureau of Petroleum Storage Systems has concluded its review of the Equipment Approval request dated March 8, 2013 that was submitted for the Icon Containment Solutions, LLC ForTex & RigidFlex sump entry fittings, Sikaflex-1a sealant, FastFill (polyurea) sealant and PetroSeal sealant, pursuant to Rules 62-761.500(7), 62-762.501(2)(f), 62-761.850(2), and 62-762.851(2), Florida Administrative Code (F.A.C.). Additional information was received on March 18, 2013. The Icon Containment Solutions, LLC ForTex & RigidFlex sump entry fittings, Sikaflex-1a sealant, FastFill (polyurea) sealant and PetroSeal sealant are entry fittings and sealants for the integral piping penetrations of the sump walls associated with underground and aboveground storage tank systems.

Based on the information provided by Icon Containment Solutions, LLC, the ForTex & RigidFlex sump entry fittings, Sikaflex-1a sealant, FastFill (polyurea) sealant and PetroSeal sealant provides environmental protection substantially equivalent to that provided by compliance with the requirements established in Rules 62-761.500(7), and 62-762.501(2)(f), F.A.C. and may be used as entry fittings and sealants for the integral piping penetrations of the sump walls associated with underground and aboveground storage tank systems.

Pursuant to Rules 62-761.850(2), and 62-762.851(2), F.A.C., the request for the use of the Icon Containment Solutions, LLC, the ForTex & RigidFlex sump entry fittings, Sikaflex-1a sealant, FastFill (polyurea) sealant and PetroSeal sealant is approved in the State of Florida as entry fittings and sealants for the integral piping penetrations of the sump walls associated with

underground and aboveground storage tank systems. The installation and repair procedures shall be made in accordance with the manufacturer's recommendations.

Please be advised that the above referenced DEP rules are subject to change. If the above rule standards are modified in the future, this order may be modified or rescind for future upgrades and installations. Additionally, if the product(s) show a consistent pattern of failure(s), and therefore does not provide substantially equivalent environmental protection, the Department may rescind this order.

The Department's Order shall become final unless a timely petition for an administrative hearing is filed under sections 120.569 and 120.57, F.S., within **21** days of receipt of this Order. Persons who have filed such a petition may seek to mediate the dispute and choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning a hearing and pursuing mediation are set forth below.

Persons affected by this Order have the following options:

- A. If you choose to accept the Department's decision regarding the Order, you do not have to do anything. This Order is final and effective as of the date on the top of the first page of this Order.
- B. If you choose to challenge the decision, you may do the following:
 - 1. File a request for an extension of time to file a petition for hearing with the Department's Agency Clerk in the Office of General Counsel within **21** days of receipt of this Order. This request should be made if you wish to meet with the Department in an attempt to resolve any disputes without first filing a petition for hearing or negotiate an agreement to mediate; or
 - 2. File a petition for administrative hearing with the Department's Agency Clerk in the Office of General Counsel within **21** days of receipt of this Order.
 - 3. In addition to requesting an administrative hearing, any petitioner may elect to pursue mediation under Section 120.573, F.S., and must negotiate an agreement to mediate within **10** days after the deadline for filing a petition.

How to Request an Extension of Time to File a Petition for Hearing

For good cause shown, pursuant to Rule 62-110.106(4), F.A.C., the Department may grant a request for an extension of time to file a petition for hearing. Such a request must be filed (received) by the Agency Clerk in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000, within **21** days of receipt of this Order. Petitioner, if different from the applicant, shall mail a copy of the request to the applicant at the time of filing. Failure to file a petition within this time period shall waive the right of anyone who may request an administrative hearing under Sections 120.569 and 120.57, F.S.

How to File a Petition for Administrative Hearing

A person whose substantial interests are affected by this Order may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) by the Agency Clerk in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida, 32399-3000, within **21** days of receipt of this Order. Petitioner, if different from the applicant shall mail a copy of the petition to the applicant at the time of filing. Failure to file a petition within this time period shall waive the right of anyone who may request an administrative hearing under Sections 120.569 and 120.57, F.S.

Pursuant to Subsection 120.569(2), F.S., and Rule 28-106.201, F.A.C., a petition for administrative hearing shall contain the following information.

- a) The name, address, and telephone number of each petitioner; the name, address, and telephone number of the petitioner's representative, if any, the site owner's name and address, if different from the petitioner, the DEP facility number, and the name and address of the facility;
- b) A statement of when and how the petitioner received notice of the Department's action or proposed action;
- c) An explanation of how each petitioner's substantial interests are or will be affected by the Department's action or proposed action;
- d) A statement of the disputed issues of material fact, or a statement that there are no disputed facts;
- e) A concise statement of the ultimate facts alleged, including a statement of the specific facts the petitioner contends warrant reversal or modification of the Department's action or proposed action;
- f) A statement of the specific rules or statutes the petitioner contends requires reversal or modification of the Department's action or proposed action; and
- g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the Department to take with respect to the Department's action or proposed action.

How to Pursue Mediation

In addition to requesting an administrative hearing, any petitioner may elect to pursue mediation. The election may be accomplished by filing with the Department a mediation agreement with all parties to the proceeding (i.e., the applicant, the Department, and any person who has filed a timely and sufficient petition for hearing). The agreement must contain all the information required by Rule 28-106.404, F.A.C. The agreement, signed by all parties, must be received by the Agency Clerk in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000 within **10** days after the deadline for filing a petition, as set forth above. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement.

Pursuant to Rule 28-106.404, F.A.C., an agreement to mediate must include the following.

- (i) The name, address, and telephone number of the persons who may attend the mediation, (also the DEP facility number, the name and address of the facility if applicable);
- (ii) The name, address, and telephone number of the mediator agreed to by the parties;
- (iii) How the costs and fees associated with the mediation will be allocated (the Department will not pay any of the costs of mediation);
- (iv) The agreement of the parties regarding the confidentiality of discussions and documents introduced during mediation to the extent authorized by law;
- (v) The date, time, and place of the first mediation session;
- (vi) The name of the party's representative who shall have authority to settle or recommend settlement; and
- (vii) The signature of the parties.

As provided in Section 120.573, F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, F.S., for holding an administrative hearing and issuing a final order. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons seeking to protect their substantial interests that would be affected by such a modified final decision must file their petitions within 21 days of receipt of this notice, or they shall be deemed to have waived their right to a proceeding under Sections 120.569 and 120.57, F.S. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57, F.S., are resumed.

This Order is final and effective as of the date on the top of the first page of this Order. Timely filing a petition for administrative hearing postpones the date this Order takes effect until the Department issues either a final order pursuant to an administrative hearing or mediation settlement.

Judicial Review

Any party to this Order has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the Agency Clerk of the Department in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within thirty days after this order is filed with the clerk of the Department (see below).

Mr. Paul Reber EQ-806

April 10, 2013

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Questions

Any questions regarding the Department's review of your equipment approval should be directed to John Svec at (850)245-8845. Questions regarding legal issues should be referred to Rebecca Robinette, Office of General Counsel, at (850)245-2242. Contact with any of the above does not constitute a petition for administrative hearing, a request for a time extension to file a petition for hearing or an agreement to mediate.

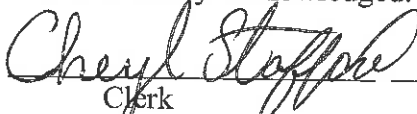
Sincerely,

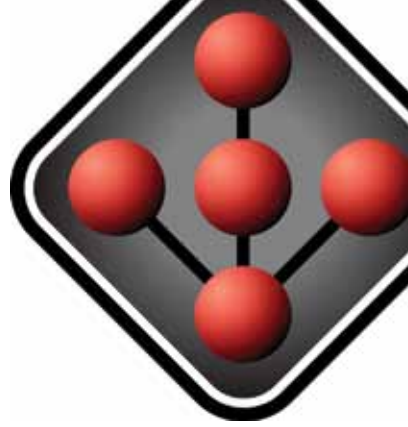


Valerie K. Huegel, Acting Chief
Bureau of Petroleum Storage Systems

VKH/jps

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to §120.52 Florida Statutes,
with the designated Department Clerk, receipt of
which is hereby acknowledged.

 4/10/13
Clerk Date
(or Deputy Clerk)



RigidFlex Sump Entry Fittings

Icon's RigidFlex fitting is a new construction design sump entry fitting that provides the benefit of having both a durable rigid housing for attachment to the sump, and flexible boots to absorb micro movements that occur in that environment.

FEATURES & BENEFITS

- Double-sided boot connection to pipe
- Over-molded bolts for quick install & fewer loose parts
- Pre-installed gaskets over housings
- Incredibly durable ForTex material boots
- Sizes for all new pipe options
- Ethanol compatible
- Covered by the ForTex Replacement Guarantee for the life of the sump*



RFM F3.0

RigidFlex boots are manufactured with our exclusive Fortex material, which is significantly more durable and fuel resistant than other previous flexible boot materials on the market. RigidFlex boots are backed by the ForTex Guarantee for the life of the sump. Few entry fitting designs through the years have provided the advantage of a flexible boot that is easy to maintain.

*Please see ForTex Guarantee for details and limitations

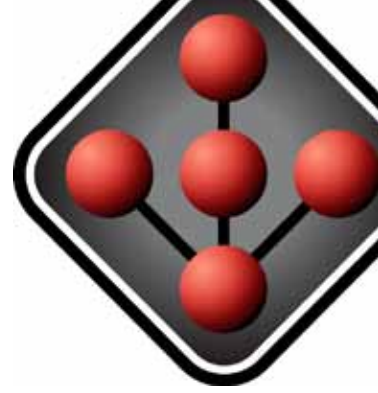


Over-molded bolts



RFM F4.5





ForTex Limited Guarantee for RigidFlex Fittings

Icon Containment Solutions, LLC guarantees that if a RigidFlex fitting is found to be leaking from a defect in materials or workmanship during the life of the sump in which it is installed, Icon will supply free of charge a split replacement boot. A “leak” is defined as a fitting’s failure to keep a containment sump watertight at the pipe entry. The replacement boot will be split and bondable so that disconnecting pipe is unnecessary to repair the original fitting. Replacement boots delivered under this guarantee will also be covered under the same guarantee for the remaining life of the sump.

Details and Conditions of Limited Guarantee

This limited guarantee is subject to the following conditions:

- The original installation was performed by an Icon Certified and trained installer with a current certification registration at the time the fitting was installed.
- The original installation was performed in accordance with Icon's instructions and specifications.
- Evidence of the defect in materials or workmanship must be provided in the form of a dated picture of the fitting in question with sufficient clarity to allow Icon to identify the problem, and the identification of the site location and address.
- Replacement boots must be ordered with a formal PO, and with “0.00” stated in the price column.
- The PO must identify the correct size and part number of the replacement boot required, and must additionally include the purchase of FastFuse repair glue at normal distributor price (IAC FASTFUSE).
- FastFuse repair glue must be ordered in a minimum ratio of 1 can per every 4 replacement boots ordered.
- This guarantee excludes all labor and other expenses, materials, shipping costs, and any taxes associated with supply of, and replacement effort of the fitting boots.

EXCLUSIONS FROM LIMITED WARRANTY

This limited warranty does not cover damage or defects relating to misuse, abuse, neglect, non-approved alterations or modifications, weathering of exterior finishes, acts of nature (e.g. fire, hurricane, earthquake, etc.) or other Force Majeure events, structural settling, structural failures, or failure to properly care for and maintain the products.

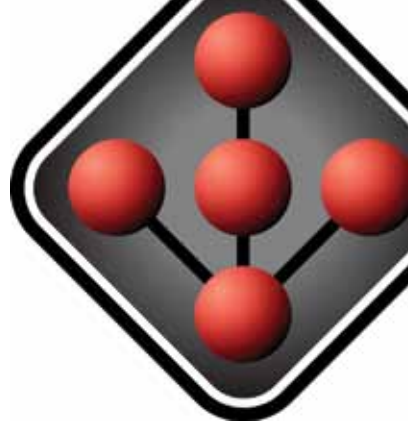
LIMITATIONS ON REMEDIES

In no event will Icon be liable for indirect, punitive, special, incidental or consequential damages, whether based on breach of express or implied warranty, breach of contract, negligence, strict liability or any other legal theory. Icon's total liability under this limited warranty will not be other than replacement of the product under this limited warranty. Except as expressly set forth herein, Icon disclaims all warranties related to the limited warranty set forth herein. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. THE FOREGOING LIMITATIONS, EXCLUSIONS, AND DISCLAIMERS SHALL APPLY TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, EVEN IF ANY REMEDY FAILS ITS ESSENTIAL PURPOSE.

STATE REMEDIES

This limited warranty gives you specific legal rights, and you may have other rights which vary from state to state.





RigidFlex UV Sump Entry Fittings for AST Systems

Icon's new RigidFlex UV fitting is designed for above ground, single-wall chamber pipe entries. It provides the benefit of having both a durable, rigid housing for attachment to the chamber, and a UV resistant flexible boot.

FEATURES & BENEFITS

- UV inhibiting formula and reflective color boot
- Double-sided boot connection to pipe
- Micro-movement absorbing flexible boots
- Over-molded bolts for quick install & fewer loose parts
- Pre-installed gaskets over housings for faster assembly
- UL Listed ForTex material boots for increased durability
- Bolt lengths for wall thickness up to 12"
- Sizes for all new pipe options up to 8"



RFSF1.4-UV

RigidFlex UV fittings for AST systems are manufactured with our exclusive UL listed Fortex material. They include UV inhibiting additives and a reflective white color which significantly increases the overall durability of the boots in exposed conditions. The RigidFlex design provides the benefit of having both a durable rigid housing for attachment to the chamber and flexible boots to absorb micro movements that occur in that environment. Few entry fitting designs through the years have provided the advantage a flexible boot that is easy to maintain.

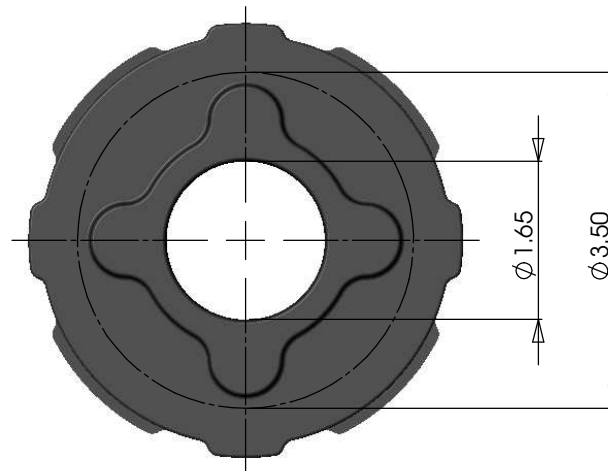
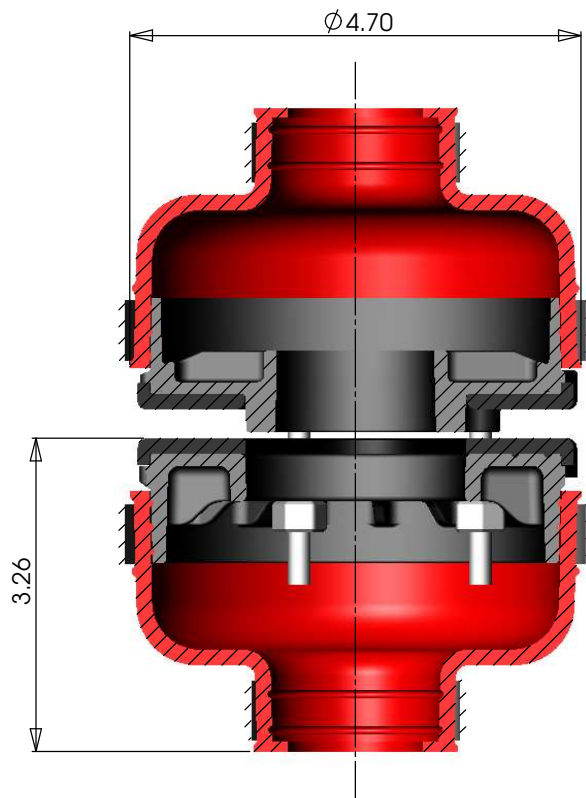


INR 3.5x2.4UV



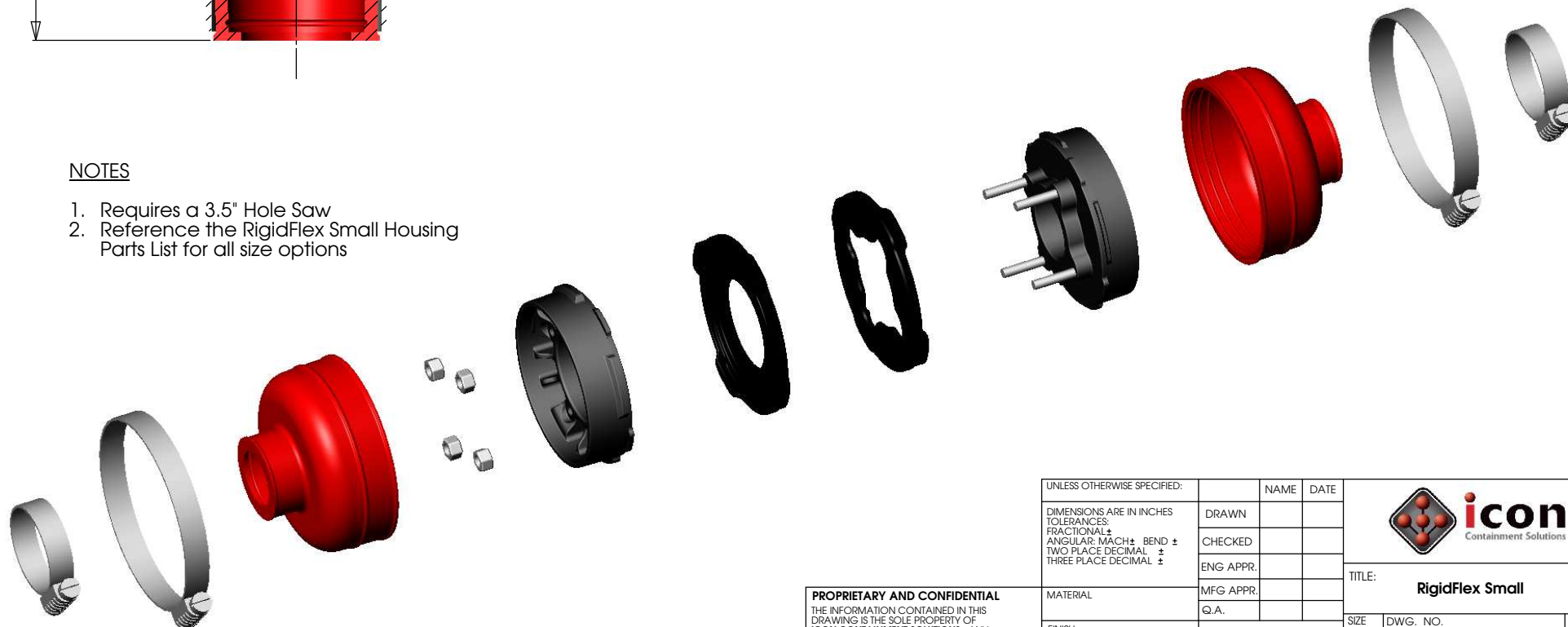
INR 2.5x2.5UV





NOTES

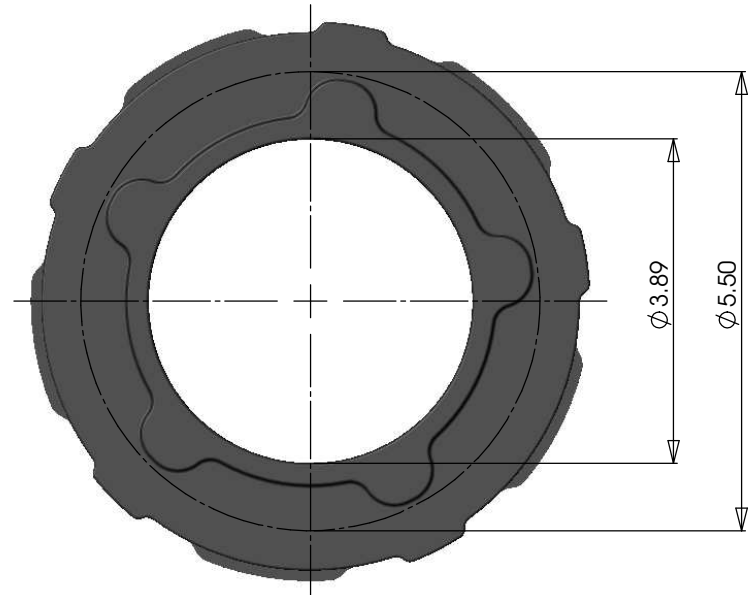
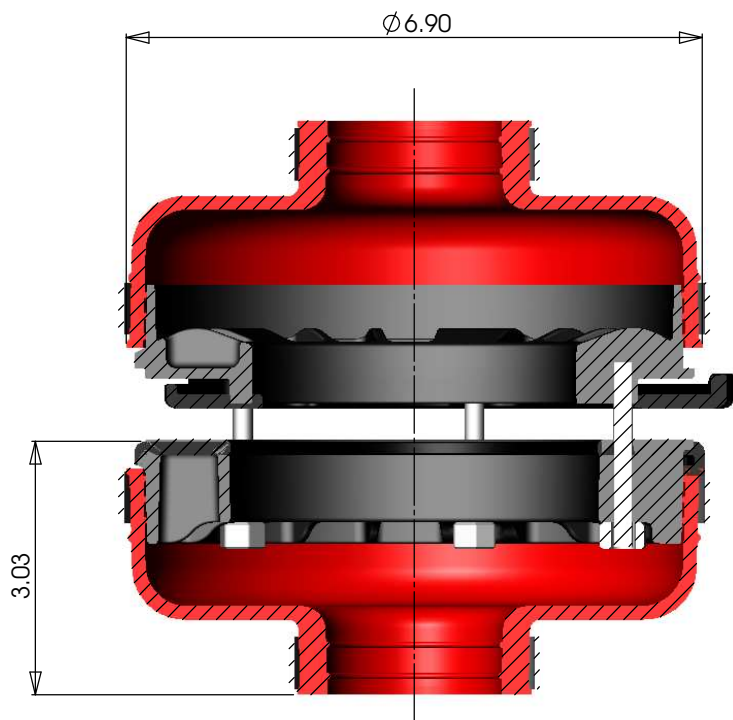
1. Requires a 3.5" Hole Saw
2. Reference the RigidFlex Small Housing Parts List for all size options



PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
ICON CONTAINMENT SOLUTIONS. ANY
REPRODUCTION IN PART OR AS A WHOLE
WITHOUT THE WRITTEN PERMISSION OF
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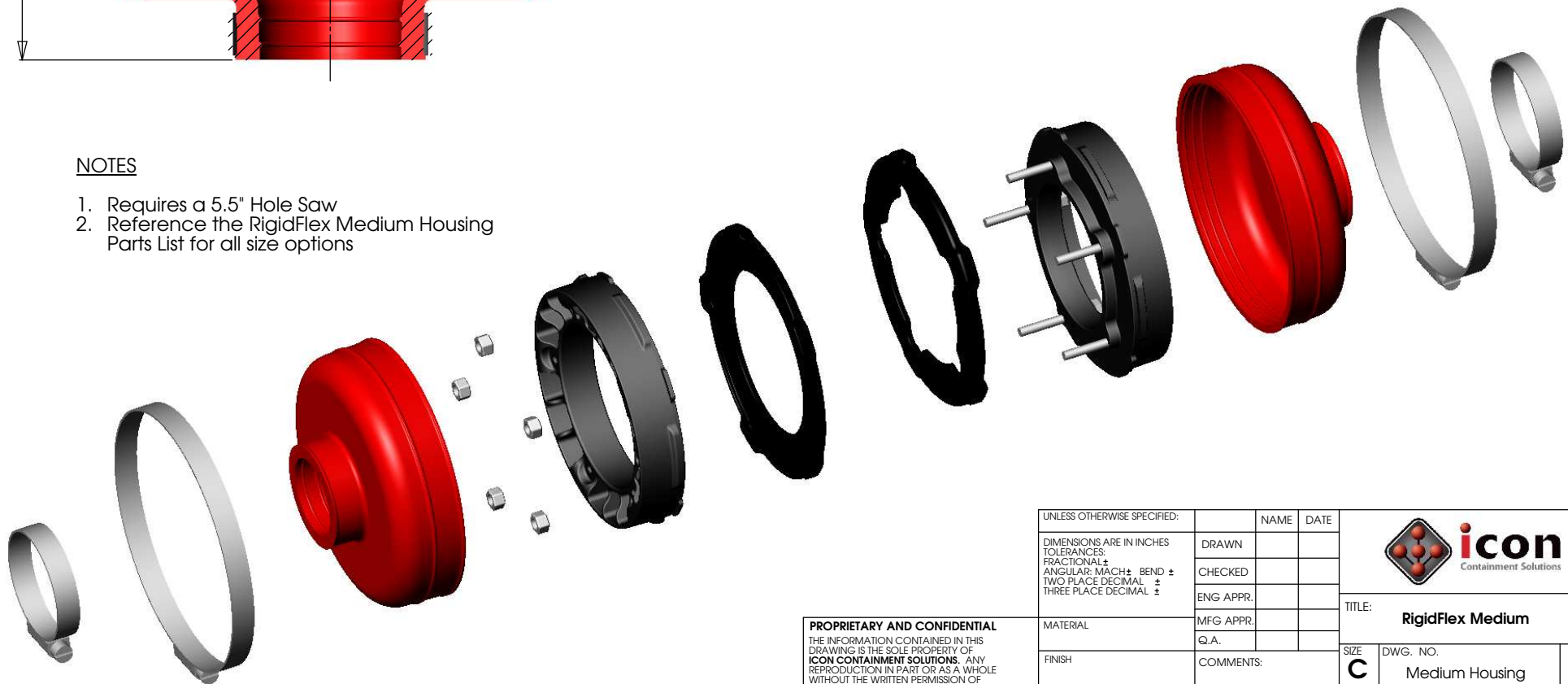
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES		DRAWN	
TOLERANCES:		CHECKED	
FRACTIONAL: ±		ENG APPR.	
ANGULAR: MACH ± BEND ±		MFG APPR.	
TWO PLACE DECIMAL ±		Q.A.	
THREE PLACE DECIMAL ±		TITLE:	
MATERIAL		RigidFlex Small	
FINISH		SIZE	DWG. NO.
DO NOT SCALE DRAWING		C	Small Housing
		SCALE: 1:1	WEIGHT:
		SHEET 1 OF 1	





NOTES

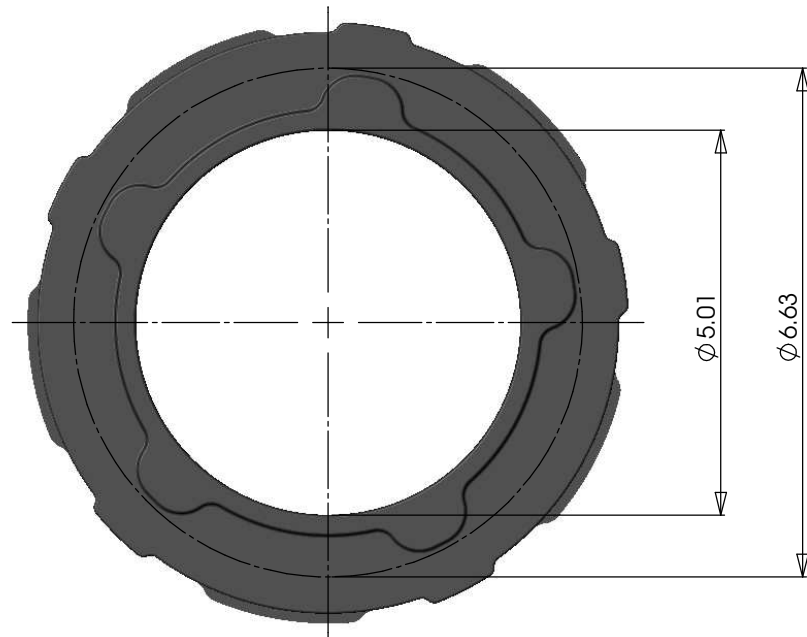
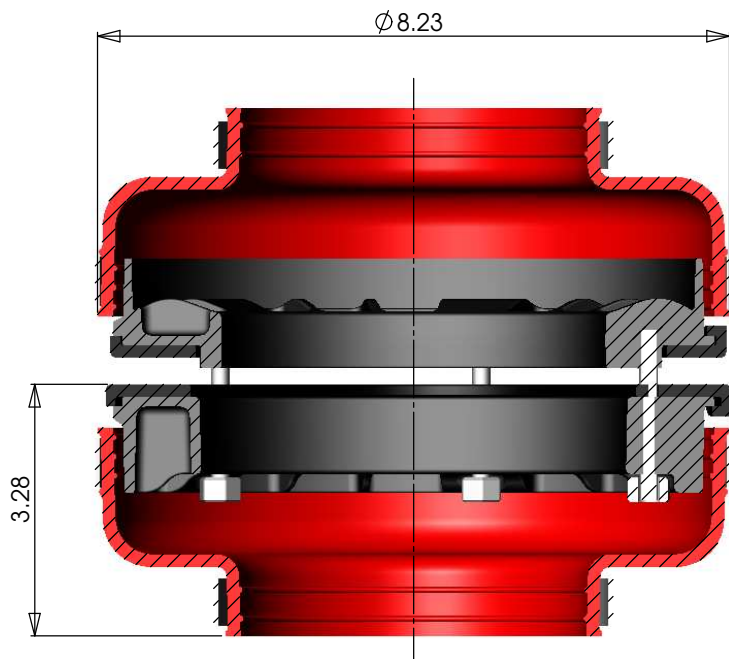
- Requires a 5.5" Hole Saw
- Reference the RigidFlex Medium Housing Parts List for all size options



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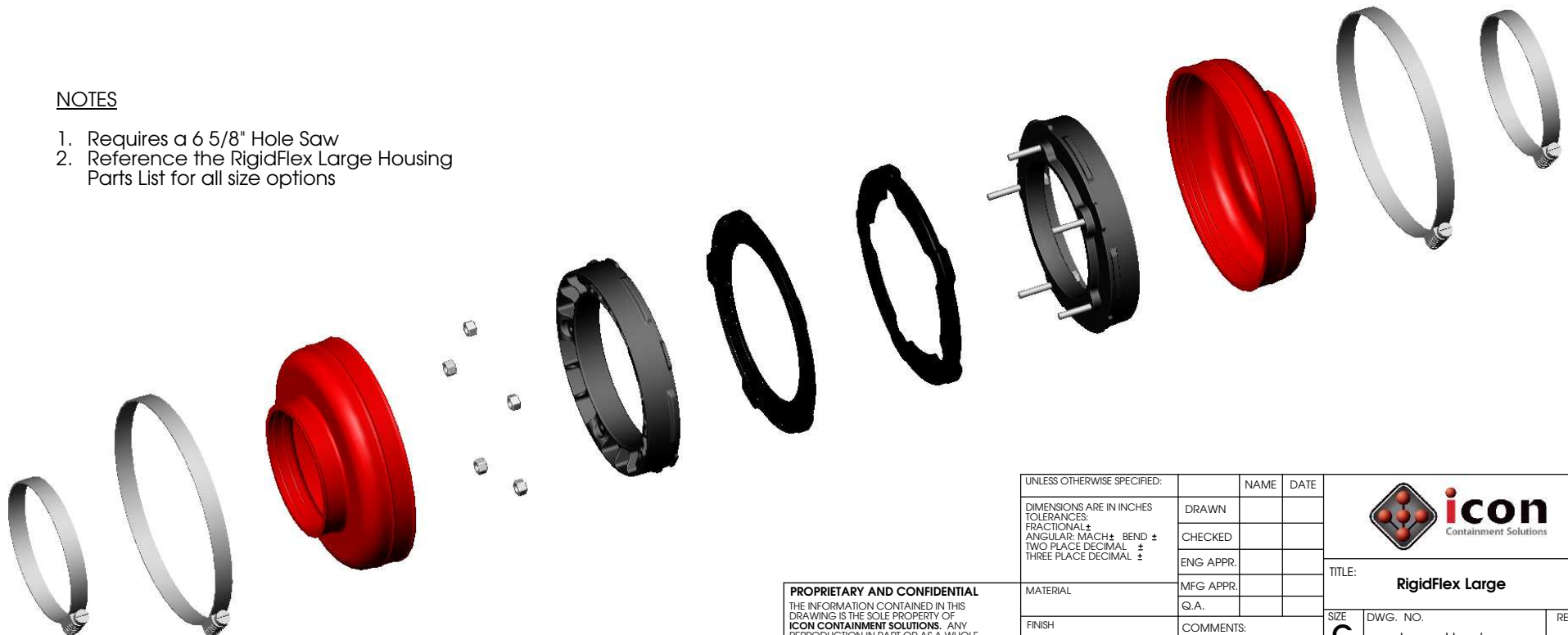
UNLESS OTHERWISE SPECIFIED:		NAME	DATE			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN					
	CHECKED					
	ENG APPR.					
MATERIAL	MFG APPR.			TITLE: RigidFlex Medium		
	Q.A.					
FINISH	COMMENTS:			SIZE C	DWG. NO. Medium Housing	REV
DO NOT SCALE DRAWING				SCALE: 1:1.15	WEIGHT:	SHEET 1 OF 1





NOTES

1. Requires a 6 5/8" Hole Saw
2. Reference the RigidFlex Large Housing Parts List for all size options



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DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH: ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		DRAWN						
		CHECKED						
		ENG APPR.						
		MFG APPR.						
MATERIAL		Q.A.			TITLE: RigidFlex Large			
FINISH		COMMENTS:						
DO NOT SCALE DRAWING					SIZE C	DWG. NO. Large Housing	REV	
					SCALE: 1:2.75		WEIGHT:	SHEET 1 OF





Maximum Durability in Containment Entry Fittings



Icon Containment Solutions, LLC has spent several years and significant resources in research and testing the latest advances in flexible fitting materials for the purpose of identifying the most structurally and chemically durable repair and new construction sump entry fittings possible for petroleum UST and AST applications.

Icon worked specifically with polymer manufacturers in the U.S and research laboratories, including the European Polymer Research Laboratories at Queens University (Belfast, Ireland), to identify a material durable enough for the challenging environmental conditions of underground sumps and above ground storage containment and transition boxes. This research addressed the compatibility of all the latest fuels, ethanol blends and bio-fuels. Ultimately, a new material, labelled **ForTex**, was determined to be the best option for these applications.

Testing considered the true sump and backfill environments in which repair and pipe entry fittings are installed. With an understanding of the performance of materials currently in this market, Icon reviewed benchmark testing of ForTex for performance longevity in a range of different environmental conditions, including: High Density Hydrocarbons; Ozone; UV; High & Low-Temperatures; Water saturation, and all current Fuels Saturation; Tensile Strength; Flexibility; and Vibration Stress. ForTex performed better than all of the current industry standard flexible materials.

In all testing conducted in-house and through 3rd parties there was no degradation leading to leakage. Including Underwriters Laboratories (UL), which was completed in October 2012.

All Icon flexible components for **Split-Repair** and **New Construction Sump Fittings** are now made with ForTex. Icon's newest line of fittings for new construction, **RigidFlex**, are manufactured with a combination of glassed nylon housings and ForTex gasket seals and boots, and are backed by an Icon "Lifetime Guarantee" (visit our website for more information).

Icon products are to be installed by Icon Certified Installers, and are only intended for uses described in the Icon training and marketing materials. Before use in any other application, user shall determine the suitability of the product by contacting Icon.



T 855.379.7867 / F 855.379.7867 / E info@iconcontainment.com / www.iconcontainment.com

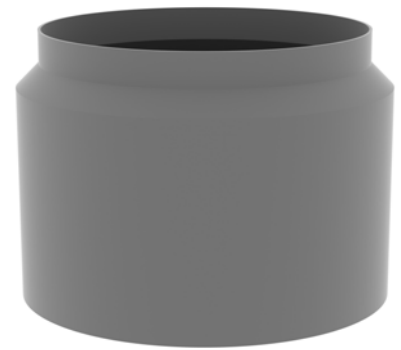
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Icon Repair Instruction - EasyFit Replacement Sump Lid

STEP 1

If required, trim, sand, or cut the sump collar/riser top to make a *flat* and *level* surface. There shouldn't be any more than a 1/4" variance in the flush fit that is required for the Mounting Frame or Ring Assembly. The bonder can make up for some minor variances.

If fiberglass, remove the gel coat where the bonder will be applied. Remove any steel, plastic, or rubber parts from previous lid mount. Thoroughly clean the surfaces with Acetone.



STEP 2

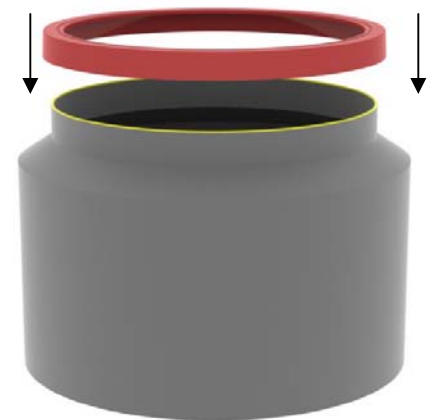
Apply a liberal bead of the appropriate bonding agent to the rim of the sump collar/riser. Ensure that the entire rim is sufficiently covered with the bonding agent.

"PolyFuse" for Poly Sump
"FiberFuse" for Fiberglass Sump



STEP 3

Install the fiberglass Mounting Frame or Ring Assembly onto the sump collar/riser rim and apply weight to ensure a tight flush seal against the rim.

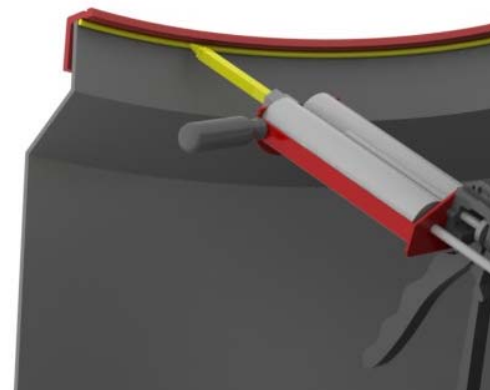


STEP 4

From the inside of the sump, apply another liberal bead of the bonding agent to the inside seam of the Mounting Frame or Ring Assembly and the rim of the sump collar/riser. There is no need to wait for a complete cure of the application in Step 3 before doing Step 4. If done properly, this step will ensure that a sufficient volume of bonding agent is applied for a strong bond and watertight seal.

NOTE: Although the application is much the same, cure times for the different bonding agents vary. Total cure time for each is as follows:

PolyFuse - 24 Hrs
FiberFuse - 1 Hr



Icon Repair Instruction - EasyFit Replacement Sump Lid

STEP 5

Install the EasyFit Lid straight down onto the Mounting Frame or Ring Assembly, as applicable to your EasyFit model.



STEP 6

With slight pressure on the lid to compress the gasket, turn each Cam Lock Handle clockwise (1/2 turn - 180°) to seal the Watertight Lid down on the sump assembly.

You are now ready for testing the watertight installation of EasyFit.

Removing the EasyFit Lid is as simple as reversing the Cam Lock Handles and while gripping the handles opposite of each other, lift the Lid straight up and off of the sump assembly. Weight of the Lid is approximately 10 lbs.



Sika Corporation Construction

January 11, 2013

Icon Containment Solutions, LLC.
870 Robinson Drive, Suite C
N. Salt Lake, UT 84054
Ph. / Fax : 855-DRY-SUMP
Direct: 801-683-8482

Mr. Logan McDowell, Technical Service Manager
E-mail: logan@iconcontainment.com

Mr. Paul Reber, National Sales Manager
E-mail: paul@iconcontainment.com

Re: **Sikaflex-1a** one part polyurethane, elastomeric sealant / adhesive

Dear Gentlemen:

Thank you for your interest in Sika products. This letter is written at the request of Sika Corporation's Project Representative, Mr. Scott Isaac.

Please be advised Sika Corporation's Technical Services Department has no objection to the typical use of Sikaflex-1a polyurethane sealant (as described in Mr. Reber's correspondence dated January 10, 2013) in a secondary containment environment where it may be exposed to substances such as groundwater, unleaded gasoline, petroleum-based oils, diesel fuel and/or jet fuel is used, provided recommendations of the current product data sheets are followed.

As in all applications, the suitability of a sealant used in any given application should be reviewed, determined and/or approved by the end user in charge of the actual product installation.

Should there be further questions, please feel free to contact Mr. Isaac directly at telephone number 801-580-7488, or Sika Corporation's Technical Services Department at 800-933-SIKA (7452), option # 5.

Very truly yours,
Sika Corporation

Ray Williamson

Senior Technical Service Specialist

cc: Scott Isaac / Sika Corporation

attch: Product Data Sheet (Edition 9.13.2012) for Sikaflex-1a



Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071
Tel: 800-933-7452, www.sikaconstruction.com

Innovation & Consistency | since 1910

Sikaflex®-1a

One part polyurethane, elastomeric
sealant/adhesive

SEALANT-WATERPROOFING & RESTORATION INSTITUTE	
Issued to: Sika Corporation Product: Sikaflex®-1A	
C719: Pass ☒	Ext +35% Comp.-35%
Substrate: Mortar, Aluminum, Glass [mortar substrate primed with Sika Primer 429]	
C661: Rating 40	
Validation Date: 8/3/12 – 8/2/17	
No. 0812-S11211	Copyright © 2012
SEALANT VALIDATION www.swrionline.org	

Description	Sikaflex-1a is a premium-grade, high-performance, moisture-cured, 1-component, polyurethane-based, non-sag elastomeric sealant. Meets Federal specification TT-S-00230C, Type II, Class A. Meets ASTM C-920, Type S, Grade NS, Class 35, use T, NT, O, M, G, I; Canadian standard CAN/CGSB 19.13-M87.
Where to Use	- Designed for all types of joints where maximum depth of sealant will not exceed 1/2 in. - Excellent for small joints and fillets, windows, door frames, reglets, flashing, common roofing detail applications, and many construction adhesive applications. - Suitable for vertical and horizontal joints; readily placeable at 40°F. - Has many applications as an elastic adhesive between materials with dissimilar coefficients of expansion. - Submerged conditions, such as canal and reservoir joints.
Advantages	- Eliminates time, effort, and equipment for mixing, filling cartridges, pre-heating or thawing, and cleaning of equipment. - Fast tack-free and final cure times. - High elasticity - cures to a tough, durable, flexible consistency with exceptional cut and tear-resistance. - Stress relaxation. - Excellent adhesion - bonds to most construction materials without a primer. - Excellent resistance to aging, weathering. - Proven in tough climates around the world. - Odorless, non-staining. - Jet fuel resistant. - Certified to the NSF/ANSI Standard 61 for potable water. - Urethane-based; suggested by EPA for radon reduction. - Paintable with water-, oil- and rubber-based paints. - Capable of ±35% joint movement.
Coverage	10.1 fl. oz. cartridge seals 12.4 lineal ft. of 1/2 x 1/4 in. joint. 20 fl. oz. uni-pac sausage seals 24 lineal ft. of 1/2 x 1/4 in. joint.
Packaging	Disposable 10.1 fl. oz., moisture-proof composite cartridges, 24/case; and uni-pac sausages, 20 fl. oz., 20/carton.

Typical Data (Material and curing conditions @ 73°F (23°C) and 50% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	10.1 fl. oz. cartridges	12 months	
	20 fl. oz. uni-pac sausages	12 months	
	5 gallon pail	6 months	
	55 gallon drum	6 months	
Storage Conditions	Store at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.		
Colors	White, colonial white, aluminum gray, limestone, black, dark bronze, capitol tan, stone and medium bronze. Special architectural colors on request.		
Application Temperature	40° to 100°F. Sealant should be installed when joint is at mid-range of its anticipated movement.		
Service Range	-40° to 170°F		
Curing Rate	Tack-free time	3 to 6 hours	
	Tack-free to touch	3 hours	
	Final cure	4 to 7 days	
Tear Strength (ASTM D-624)	55 lb./in.		
Shore A Hardness (ASTM C-661)	21 day	40±5	
Movement Capability (ASTM C-719)	+/- 35%		
Tensile Properties (ASTM D-412)			
21 day	Tensile Stress	175 psi (1.21 MPa)	
	Elongation at Break	550%	
	Modulus of Elasticity	25%	35 psi (0.24 MPa)
		50%	60 psi (0.41 MPa)
	100%	85 psi (0.59 MPa)	
Adhesion in Peel (TT-S-00230C, ASTM C 794)			
Substrate	Peel Strength	Adhesion Loss	
Concrete	20 lb.	0%	
Aluminum	20 lb.	0%	
Glass	20 lb.	0%	

Weathering Resistance Excellent

Chemical Resistance Good resistance to water, diluted acids, and diluted alkalines. Consult Technical Service for specific data.



How to Use

Surface Preparation

Clean all surfaces. Joint walls must be sound, clean, dry, frost-free, and free of oil and grease. Curing compound residues and any other foreign matter must be thoroughly removed. A roughened surface will also enhance bond. Install bond breaker tape or backer rod to prevent bond at base of joint.

Priming

Priming is not usually necessary. Most substrates only require priming if testing indicates a need or where sealant will be subjected to water immersion after cure. Consult Sikaflex Primer Technical Data Sheet or Technical Service for additional information on priming.

Application

Recommended application temperatures: 40°-100°F. For cold weather application, condition units at approximately 70°F; remove prior to using.

For best performance, Sikaflex-1a should be gunned into joint when joint slot is at mid-point of its designed expansion and contraction.

Place nozzle of gun into bottom of the joint and fill entire joint. Keep the nozzle in the sealant, continue on with a steady flow of sealant preceding the nozzle to avoid air entrapment.

Avoid overlapping of sealant to eliminate entrapment of air. Tool sealant to ensure full contact with joint walls and remove air entrapment. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio.

For use in horizontal joints in traffic areas, the absolute minimum depth of the sealant is 1/2 in. and closed cell backer rod is recommended.

Limitations

- Allow 1-week cure at standard conditions when using Sikaflex-1a in total water immersion situations and prior to painting.
- When overcoating with water, oil and rubber based paints, compatibility and adhesion testing is essential.
- Avoid exposure to high levels of chlorine. (Maximum continuous level is 5 ppm of chlorine.)
- Maximum depth of sealant must not exceed 1/2 in.; minimum depth is 1/4 in.
- Maximum expansion and contraction should not exceed 25% of average joint width.
- Do not cure in the presence of curing silicone sealants.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Do not apply when moisture-vapor-transmission condition exists from the substrate as this can cause bubbling within the sealant.
- Use opened cartridges and uni-pac sausages the same day.
- When applying sealant, avoid air-entrapment.
- Since system is moisture-cured, permit sufficient exposure to air.
- White color tends to yellow slightly when exposed to ultraviolet rays.
- Light colors can yellow if exposed to direct gas fired heating element.
- The ultimate performance of Sikaflex-1a depends on good joint design and proper application with joint surfaces properly prepared.
- The depth of sealant in horizontal joints subject to traffic is 1/2 in.
- Do not tool with detergent or soap solutions.
- Do not use in contact with bituminous/asphaltic materials.

Caution

WARNING: IRRITANT, SENSITIZER. Contains Polyisocyanate Prepolymer (Mixture), Xylene (CAS 1330-20-7). Causes eye irritation. May cause skin/respiratory irritation. May cause skin and/or respiratory sensitization after prolonged contact. May be harmful if swallowed. Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. Headaches and dizziness may result. **Deliberate misuse by inhalation of vapors may be harmful or fatal.** Strictly follow all usage, handling and storage instructions.

Handling & Storage

Avoid direct contact. Wear personal protective equipment (chemical resistant goggles/gloves/clothing) to prevent direct contact with skin and eyes. Use only in well ventilated areas. Open doors and windows during use. Use a properly fitted NIOSH respirator if ventilation is poor. Wash thoroughly with soap and water after use. Remove contaminated clothing and launder before reuse. Store in cool dry well ventilated area.

Cleanup

Use personal protective equipment (chemical resistant gloves/goggles/clothing). Without direct contact, remove spilled or excess product and placed in suitable sealed container. Dispose of excess product and container in accordance with applicable environmental regulations.

First Aid Measures

Eyes: Hold eyelids apart and flush thoroughly with water for 15 minutes. **Skin:** Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water. **Inhalation:** Remove to fresh air. **Ingestion:** Do not induce vomiting. Dilute with water. Contact physician. **In all cases contact a physician immediately if symptoms persist.**

Linear Feet of Sealant per Gallon

Inches	Depth	
	1/4	1/2
1/4	308.0	
1/2	154.0	77.0
3/4	102.7	51.3
1	77.0	38.5
1 1/2	61.6	30.8
1 3/4	51.3	25.7

Width

KEEP CONTAINER TIGHTLY CLOSED • KEEP OUT OF REACH OF CHILDREN • NOT FOR INTERNAL CONSUMPTION • FOR INDUSTRIAL USE ONLY

All information provided by Sika Corporation ("Sika") concerning Sika products, including but not limited to, any recommendations and advice relating to the application and use of Sika products, is given in good faith based on Sika's current experience and knowledge of its products when properly stored, handled and applied under normal conditions in accordance with Sika's instructions. In practice, the differences in materials, substrates, storage and handling conditions, actual site conditions and other factors outside of Sika's control are such that Sika assumes no liability for the provision of such information, advice, recommendations or instructions related to its products. The user of the Sika product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with the full application of the product(s). Sika reserves the right to change the properties of its products without notice. All sales of Sika product(s) are subject to its current terms and conditions of sale which are available at www.sikausa.com or by calling 800-933-7452.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Technical Data Sheet, product label and Material Safety Data Sheet which are available online at www.sikausa.com or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Technical Data Sheet, product label and Material Safety Data Sheet prior to product use.

LIMITED WARRANTY: Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Technical Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKASHALLNOTBELIABLEUNDERANYLEGALTHEORYFOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKASHALLNOTBERESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

Visit our website at www.sikausa.com

1-800-933-SIKA NATIONWIDE

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

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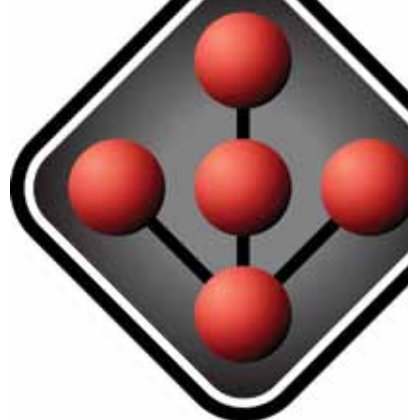
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SikaFlex®

SikaFlex is a premium-grade, high performance, moisture cured, 1 part elastomeric sealant. It is the specified product to use as a gasket sealant and boot-filler for all of Icon's products.

FEATURES & BENEFITS

- Excellent Flexibility
- Adhesion to many types of materials
- Fast cure times
- Superior fuel and chemical resistance
- Versatile sealant and filler/bonder
- Excellent water and humidity resistance
- 12 month shelf life
- Available in 10oz tube or 20oz "sausage"



IAC SIKA20



IAC SIKA10

SikaFlex is the specified sealant and filler for use with Icon's repair products. It is very versatile and resistant to fuel and water. It comes in regular 10oz "caulking tubes" and in 20oz uni-pac "sausages" (recommended). SikaFlex meets federal specification TT-S-00230C, Type II, Class A. Meets ASTM C-920, Type S, Grade NS, Class 35, use T, NT, O, M, G, I; canadian Standard CAN/CGSB 19.13-M87.

PARTS & PRICES

IAC SIKA10	SikaFlex 1-a Sealant -10oz tube	\$8.00
IAC SIKA20	SikaFlex 1-a Sealant -20oz uni-pac sausage	\$14.00
IAC PGUNSF20	Pneumatic Dispensing Gun for SikaFlex 20oz uni-pac sausage	\$135.00
IAC MGUNSF20	Manual Dispensing Gun for SikaFlex 20oz uni-pac sausage	\$TBD
IAC BGUNSF20	Battery Powered Dispensing Gun for SikaFlex 20oz uni-pac sausage	\$TBD



SikaFlex 1-a Data Sheet Continued...

Application Properties (typical)

Application Temp	40° to 100° F
Service Range	-40° to 170° F
Cure Rate	
Tack Free	3 to 6 Hours
Final Cure	4 to 7 days
Shelf Life	12 months
Coverage	
20 fl oz	24 ln ft of 1/2 x 1/4 in
10 fl oz	12.4 ln ft of 1/2 x 1/4 in

Performance Properties (typical)

Tear Strength (ASTM D-624)	55 lb/in
Shore A hardness (ASTM D-2240)	21 Days
Tensile Properties (ASTM D-412)	
21 Day Tensile Stress	175 psi
Elongation at Break	550%
Modulus of Elasticity	
25%	35 psi
50%	60psi
100%	85psi

Adhesion in Peel (TT-S-00230C, ASTM C 794)

Substrate	Peel Strength	Loss
Concrete	20 lb	0%
Aluminium	20lb	0%
Glass	20lb	0%

Surface Prep

Clean all Surfaces. Curing compound residues and any other foreign matter must be removed. A rough surface will enhance bond. Priming is usually not necessary.

NOTE: When using solvents, be sure to extinguish all ignition sources and follow all manufacturer's guidelines.

Important Notice

ICON MAKES NO WARRANTIES EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Given the variety of factors that can affect the use and performance of the product, some of which are uniquely within the user's knowledge and control, user is responsible for determining if SikaFlex 1-a is suitable for a particular purpose and method of application.

If the SikaFlex product purchased is proved to be defective, THE EXCLUSIVE REMEDY, AT ICON'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR REPLACE THE ORIGINAL TUBES OF PRODUCT PURCHASED. Icon shall not otherwise be liable for loss or damages, direct, indirect, special, incidental or consequential, regardless of any legal theory asserted, including but not limited to, contract, negligence, warranty or strict liability.





FDNP.MH17464 Drinking Water System Components

[Page Bottom](#)

Drinking Water System Components

[See General Information for Drinking Water System Components](#)
SIKA CORPORATION
 201 POLITO AVE
 LYNDHURST, NJ 07071 USA

MH17464

ANSI/NSF STANDARD 61

Plant at: Bayville, NJ

Joining and Sealing Materials

Trade Dsg	Water Contact Temp (°C)	Water Contact Mtl	Surface Area to Volume Ratio
SikaRepair 224 (b)	23	Cement	36.8 sq cm/L

Plant at: Fairless Hills, PA

Barrier Materials

Trade Dsg	Water Contact Temp (°C)	Water Contact Mtl	Surface Area to Volume Ratio
Plastiment (bb)	23	Cement with liquid admixture	394 cm ² /Liter
Plastocrete 161 (aa)	23	Cement with liquid admixture	394 cm ² / Liter
Sika AIR (w)	23	Cement with liquid admixture	394 sq cm/liter
Sika Viscocrete 2100 (x)	23	Cement with liquid admixture	394 sq cm/liter

Plant at: Lyndhurst, NJ

Joining and Sealing Materials

Trade Dsg	Water Contact Temp (°C)	Water Contact Mtl	Surface Area to Volume Ratio
Mortar Grout			
Sikaflex 1A+ (d) (r)	23	Polyurethane	0.74
Sealer 79 (q) (s)	23	Polyurethane	0.74 sq cm/liter
Sika Construction Sealant (q) (t)	23	Polyurethane	0.74 sq cm/liter
Sikabond Construction Adhesive (z)	23	Polyurethane	1.27 sq cm/L
Sikaflex 11FC Black (z)	23	Polyurethane	1.27 sq cm/L
Sikaflex 11FC White (z)	23	Polyurethane	1.27 sq cm/L
Sikaflex 1A (q) (r)	23	Polyurethane	0.74 sq cm/liter
Sikaflex 201 (q) (r)	23	Polyurethane	0.74 sq cm/liter
Sikaflex 221 Black (z)	23	Polyurethane	1.27 sq cm/L
Sikaflex 221 Grey (z)	23	Polyurethane	1.27 sq cm/L

Sikaflex 221 White (z)	23	Polyurethane	1.27 sq cm/L
Sikaflex 241 Black (z)	23	Polyurethane	1.27 sq cm/L
Sikaflex 241 White (z)	23	Polyurethane	1.27 sq cm/L
Sikaflex 291 Black (z)	23	Polyurethane	1.27 sq cm/L
Sikaflex 291 White (z)	23	Polyurethane	1.27 sq cm/L
SikaTop 111 Plus (1)	23	Cement	0.142 sq cm/liter
SikaTop 122 Plus (1)	23	Cement	0.142 sq cm/liter
SikaTop 123 Plus (1)	23	Cement	0.142 sq cm/liter

Plant at: Marion, OH

Barrier Materials

Trade Dsg	Water Contact Temp (°C)	Water Contact Mtl	Surface Area to Volume Ratio
Sika FerroGard 903 (e)	23	Cement	105 sq cm/L
Sikagard 62 (l)	23	Epoxy	36.8 sq cm/L
SikaTop 144 (n)	23	Cement	36.8 sq cm/L
SikaTop Seal 107 (f)	23	Multiple	23.2 sq cm/L

Joining and Sealing Materials

Trade Dsg	Water Contact Temp (°C)	Water Contact Mtl	Surface Area to Volume Ratio
Sika Flex 2C NS EZ Mix Limestone (y)	23	Polyurethane	3.0 sq cm/liter
Sika Flex 2C NS EZ Mix Tint Base (y)	23	Polyurethane	3.0 sq cm/liter
Sikadur 31, Hi-Mod Gel (NEW 1:1 Mix Ratio) (i)	23	Epoxy	26 sq cm/L
Sikadur 32 Hi Mod (a)	23	Epoxy	25.8 sq cm/L
Sikadur 35 Hi-Mod LV (g)	23	Epoxy	0.2 sq cm/L
Sikadur Anchor Fix 4 (k)	23	Epoxy	11.7 sq cm/L
Sikadur Combiflex SG System (a)	23	Multiple	25.8 sq cm/L
Sikadur Injection Gel (k)	23	Epoxy	11.7 sq cm/L
SikaRepair 224 (b)	23	Cement	36.8 sq cm/L

Plant at: Santa Fe Springs, CA

Joining and Sealing Materials

Trade Dsg	Water Contact Temp (°C)	Water Contact Mtl	Surface Area to Volume Ratio
Mortar Grout, "Mortar grout"			
Sikagrout 328 (c)	23	Cement	36.8
SikaRepair 224 (b)	23	Cement	36.8 sq cm/L
SikaRepair SHB mixed with water (o)	23	Cement	3.68 sq cm/L

Joining and Sealing Materials

Trade Dsg	Water Contact Temp (°C)	Water Contact Mtl	Surface Area to Volume Ratio
SikaFix HH Hydrophilic	23	Polyurethane	5.4 sq cm/L

SikaFix HH LV with SikaFix LV Accelerator	23	Polyurethane	2.0 sq cm/L
SikaFix HH+ with SikaFix HH Accelerator	23	Polyurethane	2.0 sq cm/L

(1) - For use as a Joining and Sealing Material at a maximum Surface Area/Volume ratio of 0.142 sq cm/L. Minimum cure time: 7 days for potable water use.

(a) - Note: Product to be applied in accordance with manufacturer's use instructions. Epoxy - 1:1 ratio (Part A:Part B), Minimum Cure Time = 3 days, Maximum Thickness = 125 mils.

(aa) - Dosage Rate of 6 fl oz/100 lbs of cement. Maximum Surface Area per Volume Ratio = 394 sq cm/L. Order of Application = N/A. Subcomponent Mixing Ratio = N/A. Primer = N/A. Application Method = N/A. Application Thickness = N/A. Thinning = N/A. Final Cure time prior to water immersion = 36 days. Note: See Manufacturers instructions for additional product use information.

(b) - Minimum Cure Time: 7 days. Product to be applied in accordance with manufacturer's use instructions.

(bb) - Dosage rate of 4 fl oz/ 100 lbs of cement. Maximum Surface Area per Volume Ratio = 394 sq cm/L. Order of Application = N/A. Subcomponent Mixing Ratio = N/A. Primer = N/A. Application Method = N/A. Application Thickness = N/A. Thinning = N/A. Final Cure time prior to water immersion = 36 days. Note: See Manufacturers instructions for additional product use information.

(c) - Minimum Cure Time: 3 days. Product to be applied in accordance with manufacturer's use instructions.

(d) - For use as a Joining and Sealing Material at a maximum of 2% coverage on a 1000 gallon tank. Minimum cure time: 4 days for potable water use.

(e) - Maximum application rate is 1 gallon of product per 100 square feet. Maximum Surface Area per Volume Ratio = 105 sq cm/L. Order of Application = N/A. Subcomponent Mixing Ratio = N/A. Primer = N/A. Application Method = N/A. Application Thickness = N/A. Thinning = N/A. Final Cure time prior to water immersion = 36 days. Note: See Manufacturers instructions for additional product use

(f) - Maximum Use Level Corresponding to tanks greater than or equal to 4,000 gal with a maximum surface area to volume ration of 21 sq cm/liter. Order of Application/subcomponent mixing ratio = Sika TopSeal 107 consists of Sika TopSeal 107 - part A and Sika TopSeal 107 - part B mixed in a 1 to 4.1 ratio by weight. Thinning = N/A. Primer = N/A. Application Thickness (mils): 40 per coat. Number of Coats = 3. Re-coat/Cure Time prior to water immersion: 4 hours/ 7 days. Note: See Manufacturers instructions for additional product use information. This product was tested without a primer or an additional topcoat. It is recommended that any primer or topcoat used should be certified to NSF/ANSI 61 by an ANSI accredited certifier.

(g) - Note: Maximum surface area to volume ratio of 0.2 sq cm/liter, corresponding to 1% coverage of a 5,000 gal tank or 3% coverage of a 100,000 gal tank. Sikadur 35 Hi-Mod LV consists of Sikadur 35 Hi-Mod LV - part A and Sikadur 35 Hi-Mod LV - part B mixed in a 2 to 1 ratio by volume. The following use restrictions apply: Maximum Field Use Dry Film Thickness (mils): 10, Minimum Cure Temperature: 70 F, Minimum cure time: 7 days.

(i) - Note: Product to be applied in accordance with manufactures use instructions, 1:1 ratio (Part A:Part B), Minimum Cure Time = 3 days, Maximum Thickness = 125 mils

(k) - For use as a Joining and Sealing Material, only when Part A and Part B mixed in a 1:1 ratio by volume in accordance with the manufacturer's use instructions. Maximum SA/Vol: 11.9 sq cm/L

(l) - Maximum Use Level Corresponding to tanks greater than or equal to 1,000 gal with a maximum surface area per volume ratio of 37 sq cm/L. Order of Application = N/A. Subcomponent Mixing Ratio = only when Part A and Part B mixed in a 1:1 ratio by volume in accordance with the manufacturer's use instructions. Primer = N/A. Thinning = N/A. Application Thickness (mils): 10. Application Method = N/A. Final cure time/temp prior to water immersion 3 days at 73°F. Note: See Manufacturers instructions for additional product use information. This product was tested without a primer or an additional topcoat. It is recommended that any primer or topcoat used should be certified to NSF/ANSI 61 by an ANSI accredited certifier.

(n) - Maximum Use Level Corresponding to tanks greater than or equal to 1,000 gal with a maximum surface area per volume ratio of 37 sq cm/L. Order of Application = N/A. Subcomponent Mixing Ratio = only when Part A is mixed with deionized water at a ratio of 1:3 and Part A and Part B are mixed in a 9:91 ratio by weight in accordance with the manufacturer's use instructions. Primer = N/A. Thinning = N/A. Application Thickness = 32 mils. Application Method = N/A. Final cure time/temp prior to water immersion 3 days at 73°F. Note: See Manufacturers instructions for additional product use information. This product was tested without a primer or an additional topcoat. It is recommended that any primer or topcoat used should be certified to NSF/ANSI 61 by an ANSI accredited certifier.

(o) - For use as a Joining and Sealing Material, only when 50 lbs of SikaRepair SHB is mixed with 1 gal of water in accordance with the manufacturer's use instructions. Maximum SA/Vol: 3.68 sq cm/L

(q) - For use as a Joining and Sealing Material at a maximum of 2% coverage on a 1000 gallon tank. Minimum cure time: 21 days for potable water use.

(r) - Covers the following colors: black, white, colonial white, aluminum gray, capital tan, limestone and dark bronze.

(s) - Covers black color only.

(t) - Covers the following colors: white, aluminum gray, black, dark bronze, capital tan, limestone.

(w) - Dosage Rate 3 fl oz per 100 g cement. Maximum Surface Area per Volume Ratio = 394 sq cm/L. Order of Application = N/A. Subcomponent Mixing Ratio = N/A. Primer = N/A. Application Method = N/A. Application Thickness = N/A. Thinning = N/A. Final Cure time prior to water immersion = 36 days. Note: See Manufacturers instructions for additional product use information.

(x) - Dosage Rate 12 fl oz per 100 g cement. Maximum Surface Area per Volume Ratio = 394 sq cm/L. Order of Application = N/A. Subcomponent Mixing Ratio = N/A. Primer = N/A. Application Method = N/A. Application Thickness = N/A. Thinning = N/A. Final Cure time prior to water immersion = 36 days. Note: See Manufacturers instructions for additional product use information.

(y) - For use as a Joining and Sealing Material only when Part A is mixed with Part B in a ratio of 2.9 :1 by weight, in accordance with the manufacturer's use instructions. Minimum cure time: 3 days.

(z) - For use as a Joining and Sealing Material at a maximum Surface Area/Volume ratio of 1.27 sq cm/L. Minimum cure time: 3 days for database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=FDNP.MH17464&ccn...

potable water use.

j - Note: Maximum surface area to volume ratio of 36.8 sq cm/liter, corresponding to tanks 1,000 gal and greater. Cure Time: 7 days.

NOTE - Manufacturer's instructions for application must be followed.

Last Updated on 2012-07-18

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EGVV.MH28727 Tank Accessories for Flammable and Combustible Liquids

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Tank Accessories for Flammable and Combustible Liquids

[See General Information for Tank Accessories for Flammable and Combustible Liquids](#)

ICON CONTAINMENT SOLUTIONS L L C

MH28727

SUITE C

870 W ROBINSON DR

N SALT LAKE, UT 84054 USA

Sump penetration fitting, reducers, three stepped flanged reducers and inserts. Split repair sump penetration fittings, reducers, three stepped flanged reducers and inserts.

Trademark and/or Tradename: "ForTex"

[Last Updated](#) on 2012-11-01

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File MH28727

Vol 1

Auth. Page 1

Issued: 2012-10-09

FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

TANK ACCESSORIES FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS
(EGVV)

Manufacturer: SEE ADDENDUM FROM MANUFACTURER LOCATIONS

2780719 (Part Site)

Applicant: ICON CONTAINMENT SOLUTIONS L L C
(100591-718) SUITE C
870 W ROBINSON DRIVE
N SALT LAKE UT 84054

2780719 (Party Site)

Listee/Classifieds Co.: SAME AS APPLICANT
(100591-718)

This Follow-Up Service Procedure authorizes the above Manufacturer(s) to use the marking specified by UL LLC, or any authorized licensee of UL LLC, including the UL Contracting Party, only on products when constructed, tested and found to be in compliance with the requirements of this Follow-Up Service Procedure and in accordance with the terms of the applicable service agreement with UL Contracting Party and any applicable Service Terms. The

UL Contracting Party for Follow-Up Services is listed on addendum to this Follow-Up Service procedure ("UL Contracting Party"). UL Contracting party and UL LLC are referred to jointly herein as "UL".

UL further defines responsibilities, duties and requirements for both Manufacturer's and UL representatives in the document titled, "UL Mark Surveillance Requirements" that can be located at the following website : <http://www.ul.com/fus>, and in the document titled "UL and Subscriber Responsibilities" that can be located at the following website: <http://www.ul.com/responsibilities>. Manufacturers without Internet access may obtain the current version of these documents from their local UL customer service representative or UL field representative. For assistance, or to obtain a paper copy of these documents will be applicable Service Terms, please contact UL Customer Service at <http://www.ul.com/global/eng/pages/corporate/contactus>, select the location and enter your request, or call the number listed for that location.

The Applicant, the specified Manufacturer(s) and any Listee/Classified Co. in this Follow-Up Service Procedure must agree to receive Follow-Up Services from UL Contracting Party. If your applicable agreement is a Global Services Agreement ("GSA") with an effective date of January 1, 2012 or later and this Follow-Up Service Procedure is issued on or after that effective date, the Applicant, the specified Manufacturer(s) and any Listee/Classified Co. will be bound to a Service Agreement for Follow-Up Services upon the earliest by any Subscriber or use of the prescribed UL Mark, acceptance of the factory inspection, or payment of the Follow-Up Service fees which will incorporate such GSA, this Follow-Up Service Procedure and the Follow-Up Service Terms which can be accessed by clicking here: <http://www.ul.com/contracts/Terms-After-12-31-2011> . In all other events, Follow-Up Services will be governed by and the corporate the terms of your applicable service agreement and this Follow-Up Service Procedure.

Follow-Up Service Procedure

DO NOT DISCARD THIS PAGE

It is important to keep UL Procedures and Test Reports up-to-date as new or revised pages are received.
Correct maintenance will decrease the amount of time the UL Representative spends when visiting your facility.

UL LLC offers MyHome @UL, a dedicated website providing secure access to online tools and databases that can help simplify your compliance activities. You can customize your personal MyHome @UL page to include the content needed most, including timely information about certification updates and links to other Web sites you visit regularly. Visit <http://my.home.ul.com/> to sign up today!

PAGES (in content order)	FUNCTION	HOW TO UPDATE
Authorization Page	Displays the Product Category, the type of Follow-Up Service (Type R=Reexamination / Type L=Label), the File Number and the Volume Number associated with each Applicant's, Manufacturer's and Listee's company name and address.	Replace existing page by matching the UL File Number and Volume Number. Discard the older page (refer to "Issued" or "Revised" date).
Addendum to Authorization Page*	Lists the additional names and addresses of manufacturing locations, when multiple locations exist	Replace existing page by matching the UL File Number and Volume Number. Discard the older page (refer to "Issued" or "Revised" date).
Listing Mark Data (LMD), Classification Mark Data (CMD) or Recognized Component Mark Data (RCMD) Pages*	Used only for products covered under Type R Service. Displays the correct LMD, CMD, or RCMD Mark, the Control Number for Listed and Classified categories and additional information regarding minimum size, application, procurement, and any other optional markings, in addition to the UL Mark.	Replace existing page by matching the UL File Number and Volume Number. Discard the older page (refer to "Issued" or "Revised" date).
Multiple Listing (ML) Correlation Sheet	Correlates product model numbers between those products made by a Manufacturer for the Basic Applicant and those supplied to another company, the Multiple Listee.	Replace, add or delete page(s) with most current "Issued" or "Revised" date.
Index*	Catalogs the contents of the Procedure by some logical means, i.e. Section Number, Report Reference Number, or Issue Date.	Replace present page by matching the UL File Number, Volume Number, Page Number and most current "Revised" date.
Appendices* (App.)	Contains instructions for the Manufacturer and UL Representative concerning specific responsibilities and required periodic tests. May also outline tests to be conducted on samples to be forwarded to UL's facilities.	Replace present page by matching the UL File Number, Volume Number, Appendix letter (eg. App. A), Page Number and most current "Revised" date.
	Standardized Appendix Pages are the same for all manufacturers within a particular product category.	Replace present page by matching the Appendix letter (eg. App. A), Page Number and most current "Revised" date.
Follow-Up Inspection Instructions (FUII) Pages	Contains information similar to that in the Appendices. FUII Pages are issued as part of the Procedure when a UL Standard is used in conjunction with the Procedure, and are the same for all manufacturers within a particular category.	Replace present pages by matching the Page Number and most current "Issued" or "Revised" date.
Section General* (Sec. Gen.)	Contains description, requirements, identifications and/or specifications that are common to all products covered by the entire volume and supplements the information provided in the Description Section.	Replace present page by matching the UL File Number, Volume Number, Page Number and most current "Revised" date.
Description, or Section (Sec.)	Contains the specific description of one or more products or systems. This includes written text supplemented by photographs, drawings, etc., as necessary, to define features that affect compliance with the applicable requirements.	Replace present page by matching the UL File Number, Volume Number, Section Number, Page Number and most current "Issued" date.

* The above page(s) may not appear in all UL Follow-Up Service Procedures; UL's Conformity Assessment Services staff determines their inclusion.

These pages are combined in the **Generic Inspection Instructions** for International Style Reports, identified, as example by Vol. X1, X2, etc.

PLEASE NOTIFY YOUR LOCAL UL OFFICE OF ANY CHANGES IN CONTACT NAME, COMPANY NAME OR ADDRESS, SO THIS MATERIAL AND IMPORTANT INFORMATION CONTINUES TO BE DELIVERED TO YOUR FACILITY WITHOUT INTERRUPTION.

Listing Mark Data Page (LMDP)

(FILE IMMEDIATELY AFTER AUTHORIZATION PAGE)

LISTING MARK

The Listing Mark consists of four elements placed in close proximity and shall appear on Listed products only. Minimum size is not specified, as long as the listing Mark is legible. The following is suggested.



XXXX = the control number assigned by UL, 8JA7

The minimum height of a registered trademark symbol shall be 3/64 of an inch. When the overall diameter of the UL Mark is less than 3/8 of an inch, the trademark symbol may be omitted if it is not legible to the naked eye.

The product identity is: "FLAMMABLE AND COMBUSTIBLE LIQUID TANK ACCESSORY".

The product identity may be omitted if the Mark is directly and permanently applied the product by stamping, molding, ink stamping, silk screening or similar process. The product identity may appear elsewhere on the product if the three elements are part of the nameplate which includes the rating or the catalog or model designation.

Separable Listing Mark (not part of the nameplate and in the form of decals, stickers or labels) will always include the four elements.

The manufacturer may reproduce the Mark or obtain it from a UL authorized supplier

THIS PAGE IS TO BE REVISED BY FUS DEPARTMENT ONLY

TEST RECORD NO. 5

SAMPLES:

Samples of the Models RFSF1.4 (non split) and IRF L3.5P (split) sump penetration fittings fabricated of "Fortex 92 "and the split fitting bonded with FastFuse glue and Filled with Urethane Sealant were submitted by the manufacturer. The sump penetration fittings were installed by the manufacturer to the bottom of 5 gallon polyethylene buckets. Short lengths of plugged pipe were band clamped to each fitting and the fittings were filled with Urethane Sealant. The SBL3.5 split repair fittings were bonded with FastFuse Glue. Each bucket had provision for filling, sealing and pressurizing.

GENERAL:

The test results relate only to the items tested.

The following tests were conducted with the results indicated.

SIMULATED USE RESISTANCE TO FLUIDS TEST:

METHOD

One container as described above was filled with each of the fluids Listed below such that the fittings inside the sump were completely covered with the fluids. The samples and fluids were maintained at a temperature of 100 F throughout the exposure. Following 30 days in this condition, the containers were subjected to an internal pressure of 3 psig (based on a maximum sump depth of 7 ft.) while the samples were examined for evidence of leakage.

Premium Leaded Gas	50% Methanol/50% ASTM Reference Fuel C
Regular Unleaded Gas	50% Ethanol/50% ASTM Reference Fuel C
ASTM Reference Oil 2	15% Methanol/85% ASTM Reference Fuel C
ASTM Reference Fuel A	15% Ethanol/85% ASTM Reference Fuel C
ASTM Reference Fuel C	100% Ethanol
Toluene	10% Ethanol/90% ASTM Reference Fuel C
100% Methanol	30% Ethanol/70% ASTM Reference Fuel C
70oC Air Oven	

RESULTS

There was no evidence of leakage.

QUALITATIVE INFRARED ANALYSIS:

METHOD

An infrared spectrum of the material was obtained by means of an infrared spectrometer.

RESULTS

The spectrum obtained was considered representative of the material tested.

Test Record Summary:

The results of this investigation, including construction review and testing, indicate that the products evaluated comply with the applicable requirements, and therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.

Compound Designation	Spectrum Date
Fortex	2012-10-09

Test Record by:

TIM CREWS
Staff Engineer

Reviewed by:

WAYNE DOVERSBERGER
Staff Engineer

CONCLUSION

Samples of the products covered by this Report have been found to comply with the requirements covering the category and the products are judged to be eligible for Listing and Follow-Up Service. The manufacturer is authorized to use the UL Mark on such products which comply with the Follow-Up Service Procedure and any other applicable requirements of Underwriters Laboratories Inc. Only those products which properly bear the UL Mark are considered as Listed by Underwriters Laboratories Inc.

Report by:

TIM CREWS
Senior Project Engineer

Reviewed by:

WAYNE DOVERSBERGER
Engineering Group Leader

Polyurea – Typical Chemical Resistance, Extended Exposure

Table 2 - Chemical Resistance per ASTM D 3912

Chemical	12 Month Exposure
Methanol	Slight swelling, <48 hours
Gasoline	Slight surface change, no softening
Diesel fuel	No visible damage
Toluene	Slight swelling, <24 hours
MTBE	Slight surface change
5% MTBE/Gasoline	Slight surface change
Motor oil	Slight surface change, no softening
Hydraulic fluid	Slight surface change, no softening
2-methylbutane	No visible damage
Water - room temperature	No visible damage
Water 82° C, 14 days	No visible damage
10% NaCl/water - room temp.	No visible damage
10% NaCl/water 50° C, 14 days	No visible damage
10% sugar/water	No visible damage
Sulfuric acid 5%	No visible damage
Sulfuric acid 10%	No visible damage
Sulfuric acid 3%, 50° C, 14 days	No visible damage
Hydrochloric Acid 5%	No visible damage
Hydrochloric Acid 10%	No visible damage
Phosphoric Acid 10%	No visible damage
Ammonium Hydroxide 10%	No visible damage
Ammonium Hydroxide 20%	No visible damage
Sodium Hydroxide 10%	No visible damage
Sodium Hydroxide 20%	No visible damage
Sodium Hydroxide 50%	Slight surface discolor, no softening
Sodium Hydroxide. 1%, 50° C, 14 days	Slight surface discolor, no softening
Potassium Hydroxide 10%	No visible damage
Potassium Hydroxide 20%	Slight surface discolor, no softening
Acetic acid 10%	No visible damage

Results based on 50% immersion, 25 degrees C exposure for one year.

Note: These results do not pertain to a specific formulation of polyurea, and should not be construed as specific test data for all types; however, these are representative results for 100% solids aromatic, plural-component pure polyurea. Consult with your manufacturer for product-specific test results.

Polyurea – Typical Chemical Resistance, Normal Exposure

Table 1 - Chemical Resistance per ASTM D 1308

Chemical	Aromatic	Aliphatic
Acetone	A	A
Brake fluid	B	C
Clorox	NR ¹	A
Dimethyl Formamide	NR	NR
Gasoline, unleaded	A	A
Hexane	A	A
Hot tub water ²	B	A
Hydraulic oil	A	C
Methanol	A	C
5% Methanol/gasoline	A	C
Motor oil	B ¹	B ¹
Propylene carbonate	C	C
Sodium hydroxide,		
5%	A	A
10%	A	A
25%	A	A
50%	B ¹	B ¹
Sulfuric acid		
5%	A	B
10%	B	B
50%	NR	NR
Concentrate	NR ³	NR ³
Vinegar, 5% acetic acid	A	B
Water	A	A

Code describing chemical's effect on elastomer – 7 day exposure except as noted:

A - No visible damage

B - Little visible damage

C - Some effect - swelling, discoloration, cracking

NR - Not recommended

¹ - Some discoloration only

² - Brominated water

³ - Less than 24 hour exposure

Note: These results do not pertain to a specific formulation of polyurea, and should not be construed as specific test data for all types; however, these are representative results for 100% solids aromatic, plural-component pure polyurea. Consult with your manufacturer for product-specific test results.

Icon Repair Instruction for In-Sump Repairs (Cracks, Seams, and Holes - Non-Fitting or Lid Related Leaks)

The objective in these repair options is to provide a significantly lower cost repair, much faster, and with less intrusion to the site. These repairs can be applied to both poly and fiberglass sumps and should be completed by an **Icon Certified Technician**.

Read thoroughly and completely before starting the repair process.

STEP 1

Remove Water / Identify Leak Source. From inside the sump, identify the leak source (pressure crack, un-bonded seam, or unsealed hole) where the water intrusion is occurring. This may require pumping water from the sump, and as applicable, using water blocking products to prevent water intrusion during the repair.

STEP 2

Materials Specification. Take pictures of the leaking area and email them to Icon Containment Solutions for a specific written repair instruction and a materials list (techsupport@iconcontainment.com). Some conditions may simply not be repairable. Icon will offer a recommendation only if we are confident that the repair can be applied to the specific situation successfully.

Keep in mind that these repair processes are essentially the same for poly or fiberglass sumps. The only difference is in the bonding agent to be used, cure time, and the material (Sheeting or Fabric), as applicable.

PolyFuse for HDPE (polyethylene)
3-5 min. Working Time
2-3 hrs. Handling Time
6-8 hrs. 85% of Total Cure Strength
24 hrs. Total Cure Time

FiberFuse for Fiberglass
3-5 min. Working Time
5 min. Handling Time
30 min. Total Cure Time



Sheeting is defined as an appropriately sized piece of fiberglass or polyethylene, generally in the same thickness as the sump material. It is not provided by Icon but is usually available from sources in most every area of the country. The cannibalizing of old sumps is commonly a source for sheeting.

Fabric is defined as the glass/nylon cloth materials available in Icon's Repair Kit, which includes gloves, spatula, tape, and the repair fabric (2" x 4'). Some portion of that kit is used with all repair options discussed, and will be a part of the parts list provided by Icon. Part number "IAC RKIT".

STEP 3

Surface Preparation. When the surface to be repaired is dry, and all of the repair materials are at hand, prepare and clean a sufficiently large area around the leak source that will accommodate the specified repair application. It is important that the surface is clean of old bonding material, grime, and any oily residues. Wipe with Acetone or Isopropyl Alcohol (90%+) and a clean rag to remove all residues and contaminants. Sand the surface with a medium grit, and for fiberglass, make sure that you sand through the gel coat so that the bonder is in direct contact with the fiberglass.

The remaining steps in the process are detailed in the following pages and are specific to the type of sump leak problem.



Icon Repair Instruction for In-Sump Repairs (Cracks, Seams, and Holes - Non-Fitting Leaks)



Cracks

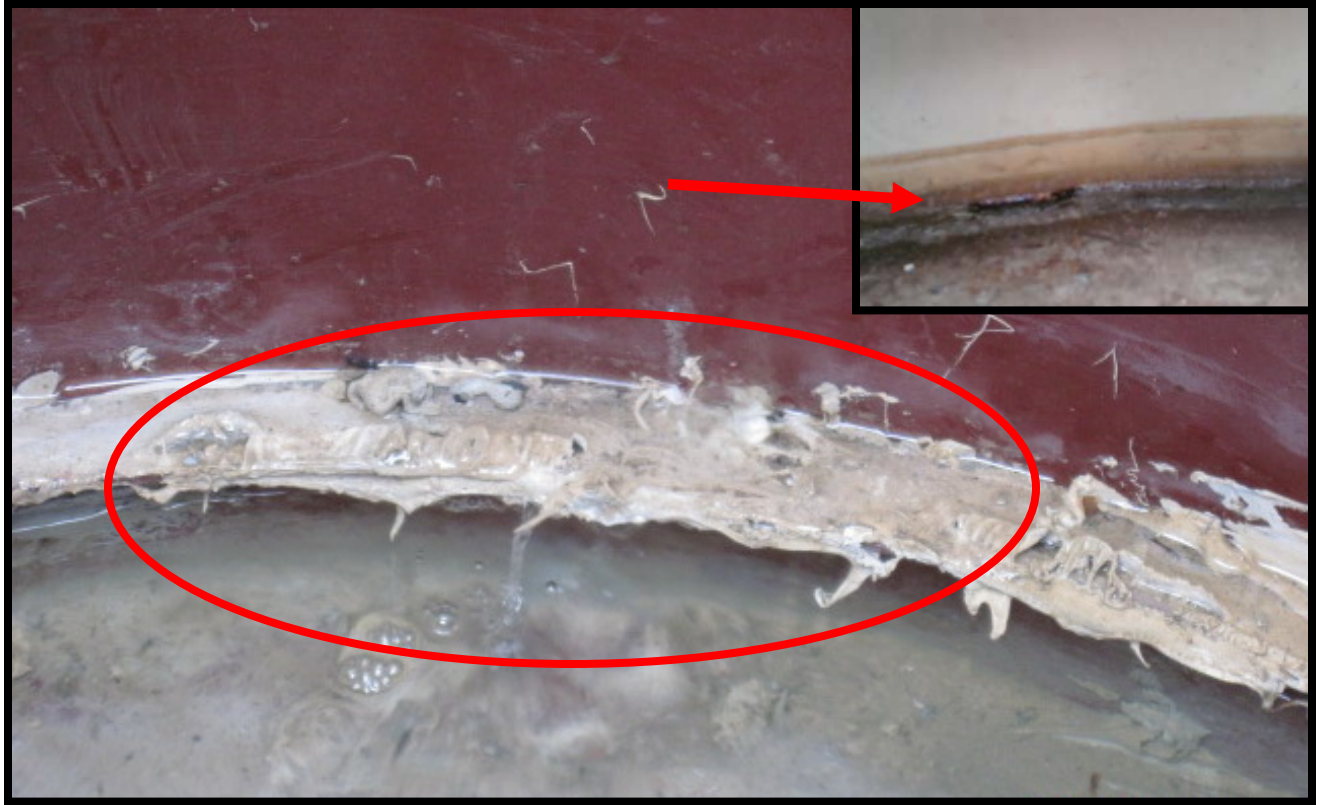
There are many different scenarios that may or may not be repairable, depending upon the conditions. Please send a picture to help us identify a possible solution. Also, the following assumes that the preparation discussed earlier has already been completed.

In general, pressure cracks can be repaired in the following manner:

1. Where specified, drill a hole at the termination of the crack to prevent the crack from spreading. The holes will be covered in the repair process. As a rule of thumb, the hole diameter should be at least twice the width of the crack.
2. Apply the appropriate bonder (PolyFuse or FiberFuse) to the entire prepared repair surface, and over the crack. If sheeting is being used to cover and add structure to the repair area, then apply the same bonder to the entire surface of the sheeting that will make contact with the sump. Sheeting should overlap the crack by 4" where possible.
3. Then immediately apply the material (sheeting or fabric) to the bonded surface. For sheeting, compress it until flush and keep pressure on it through the curing period so that it will make a watertight bond. Also add bonder to the edges of the sheeting to help seal that material completely. For fabric, an additional coating or two of bonder should be applied over the fabric with the spatula, making sure that there is sufficient material and bonder to cover the entire crack area. Fabric, like sheeting, adds structure to the crack repair.
4. Cure time varies with each Bonder. Make sure you understand the handling and curing time before you start the repair. When the curing period is completed, you can test the sump for water tightness.



Icon Repair Instruction for In-Sump Repairs (Cracks, Seams, and Holes - Non-Fitting Leaks)



Seams

There are many different scenarios that may or may not be repairable, depending upon the conditions. Please send a picture to help us identify a possible solution. Also, the following assumes that the preparation discussed earlier has already been completed.

In general, seam leaks can be repaired in the following manner:

1. Liberally apply the appropriate bonder to the entire prepared repair surface and over the seam, overlapping the repair area by at least an inch on all sides.
2. Then immediately apply the fabric (cut to size of bonded area) to the surface, if applicable. Whether the seam is in a corner or projects into the sump (as often is the case in a two-piece sump design), compress and smooth the fabric over or into the seam repair area into the bonder with the spatula. Then apply an additional coating of bonder over the fabric and spread evenly with the spatula, making sure that there is sufficient volume to completely coat the entire repair area. The fabric adds structure to the seam repair.
3. Cure time varies with each Bonder. Make sure you understand the handling and curing time before you start the repair. When the curing period is completed, you can test the sump for leak.



Icon Repair Instruction for In-Sump Repairs (Cracks, Seams, and Holes - Non-Fitting Leaks)



Holes

There are many different scenarios that may or may not be repairable, depending upon the conditions. Please send a picture to help us identify a possible solution. Also, the following assumes that the preparation discussed earlier has already been completed.

In general, uncovered and unsealed holes and punctures can be repaired in the following manner:

1. Cut the sheeting to the size and shape necessary to cover and overlap the hole or puncture by at least 4" where possible.
2. Apply the appropriate bonder to the entire prepared repair surface. Also, immediately apply the same bonder to the entire surface of the sheeting that will make contact with the sump.
3. Then apply the sheeting to the bonded surface. Compress it until flush and keep pressure on it through the curing period so that it will make a watertight bond. Also add bonder to the edges of the sheeting to help seal that material completely.
4. Cure time varies with each Bonder. Make sure you understand the handling and curing time before you start the repair. When the curing period is completed, you can test the sump for leak.

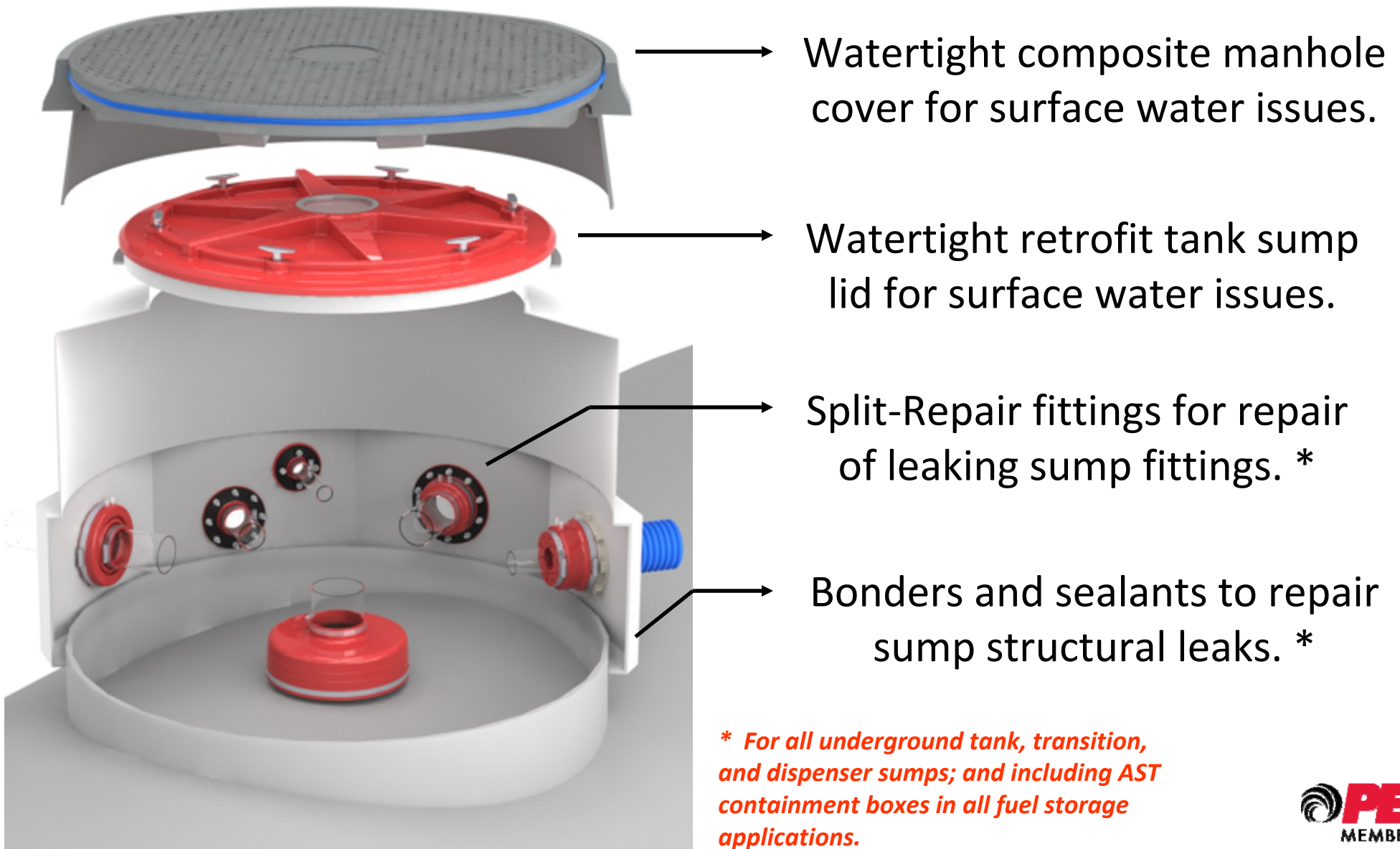


Icon Containment Solutions

Sump Repair Products

Summary Introduction

“Top to Bottom... Water Intrusion Problems Solved!”



Surface Water Solution



15 YEAR
product
guarantee

Best
cover in
Market!

42", 36", 30" or 24" Clear
Opening

 **MwayPro**
Composite Covers

- Advanced Structural Design
- 15-Year Product Guarantee
- Best Non-Slip/Non-Skid Surface
- Injury-Free Removal
- Lightweight Design
- Reduced Maintenance
- Watertight Seal
- Non-Corrosive/Non-Conductive
- Secure Lockable Option



**Frame bonded to fiberglass skirt with
FiberFuse.**



Total 40-minute cure time is all that is required prior to install.



Installed flush with concrete surface. Cover does not need to be in the frame to pour concrete. No distortion by design of frame.

Surface Water Solution

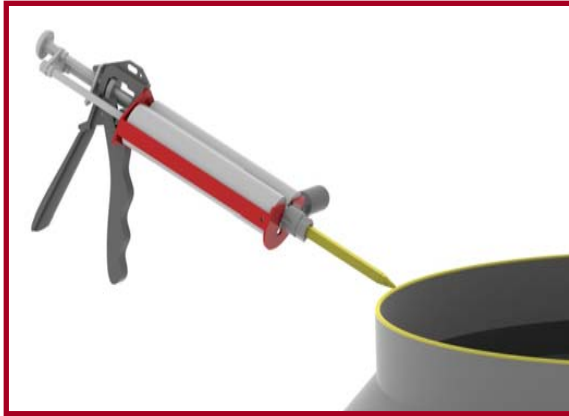
EasyFit

EasyFit Replacement Tank Sump Lid

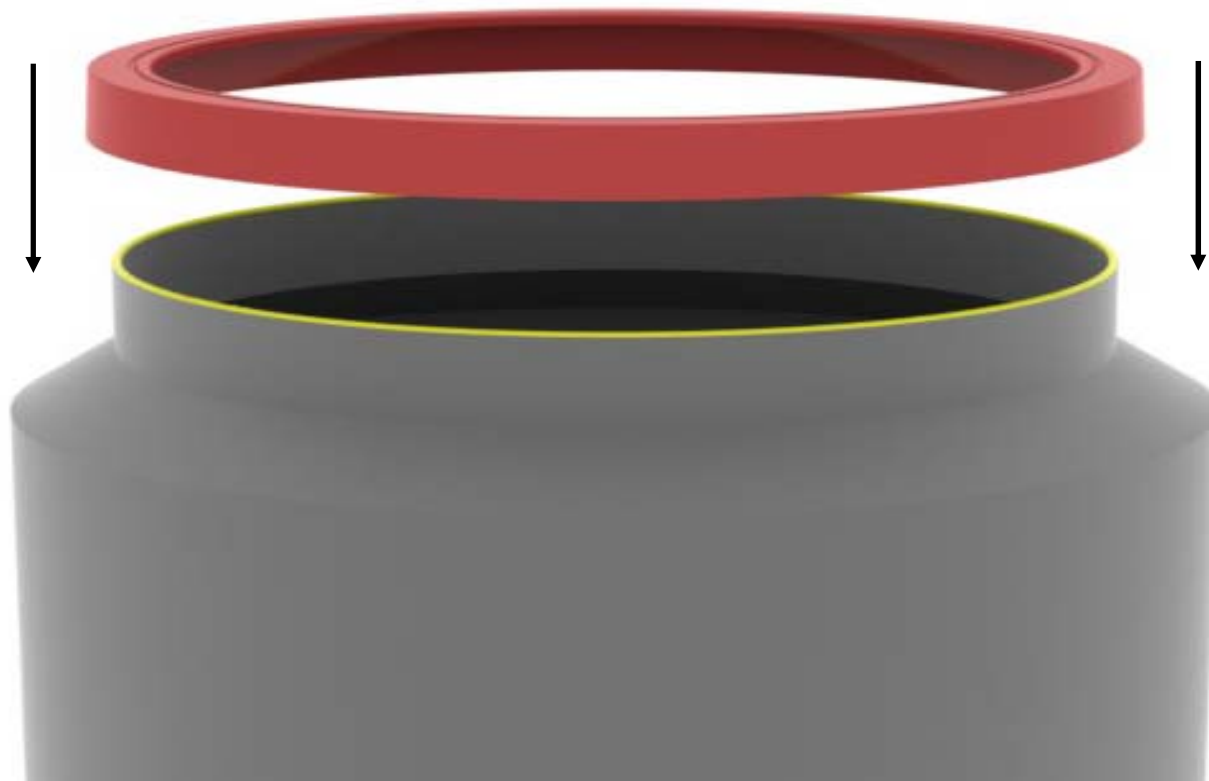


- Fast Installation
- Watertight Seal
- Easy Maintenance
- Bonded Attachment

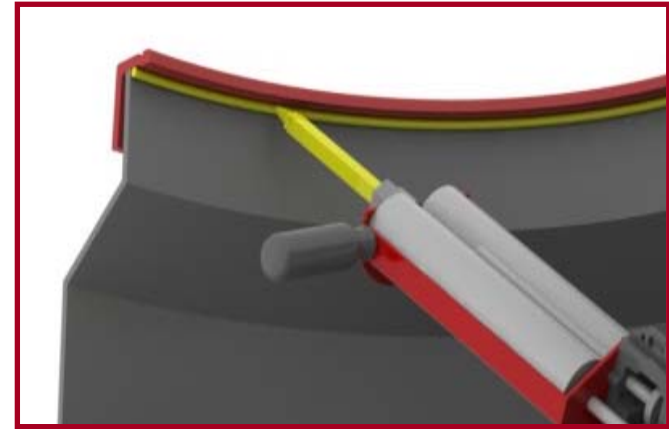
See video at link: <http://www.quietyoutube.com/watch?v=JdVjGwijgqA>



Prepare the sump top surface and bond mounting frame/ring with appropriate bonding agent.



**More bonding from
the inside and wait
for applicable cure
time before
placing lid.**





**Easy opening and replacement with
half-turn (180°) Cam-Lock Handles.
Lightweight but strong structural
design for easy handling.**

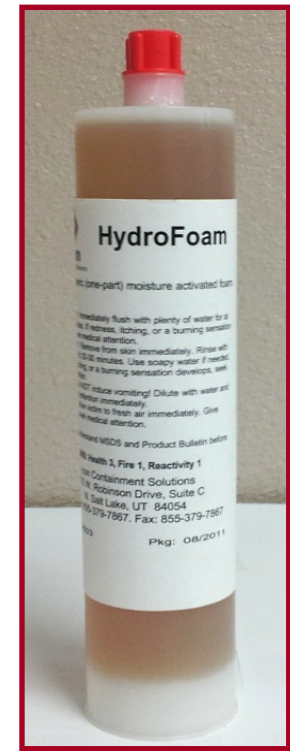


Sump Water Intrusion Solution

Water Blockers



**FastFoam
and
HydroFoam
instant
water
blocking for
dry repair.**



Sump Structural Repairs

PolyFuse & FiberFuse

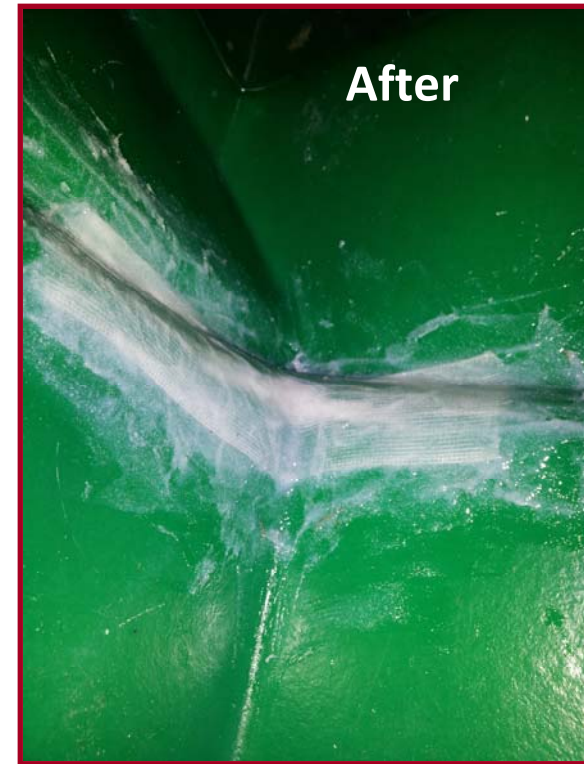


- Repair Cracks, Holes, and Seam Leaks
- Strong Bond & Fast Cure
- Poly or Fiberglass Sumps



Examples of Repairable Structural Issues





Watertight!



Watertight!



Watertight!

Sump Entry Fitting Repairs

Split-Repair Fittings w/ ForTex

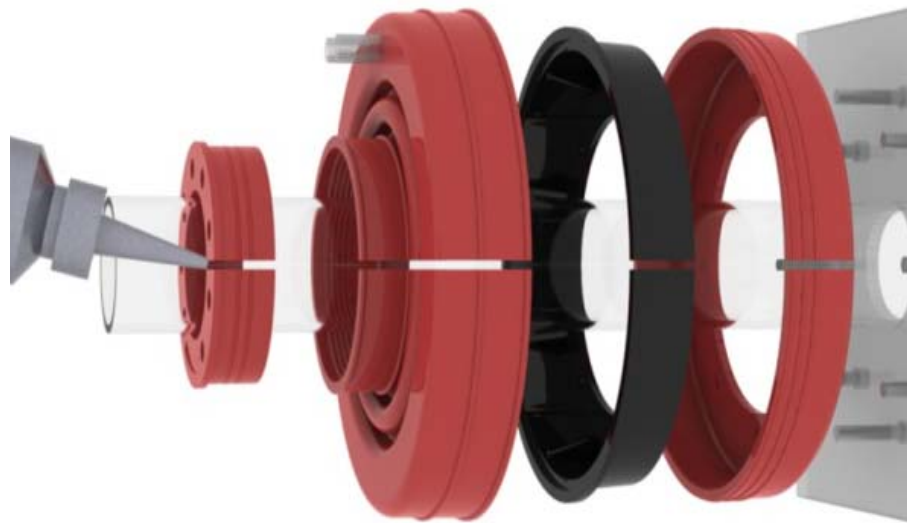
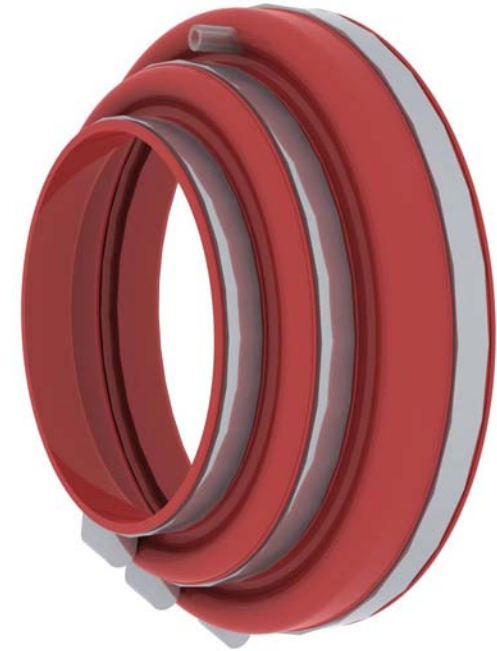
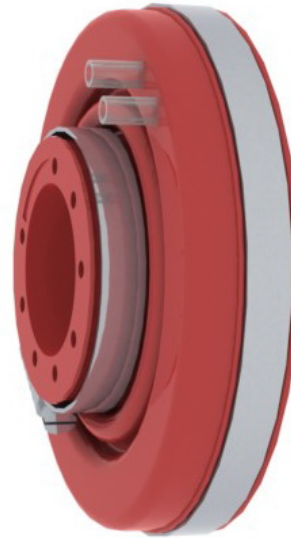


- No Excavation or Disconnected Pipe
- Low Site Intrusion & Faster Repairs
- Highly Cost Effective with **Lowest Net Cost** Installation
- **Low Profile & Most Adaptable** Designs
- **Most Durable** Materials in the Market – Guaranteed!

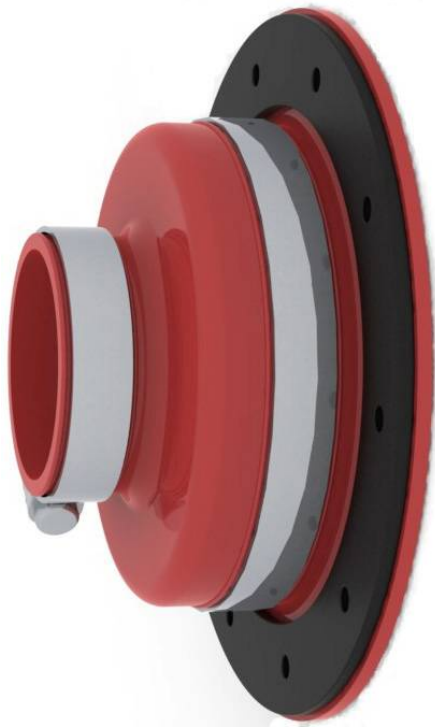
Split-Repair Fitting options are available for **All** types
of sump, fitting, and pipe combinations!



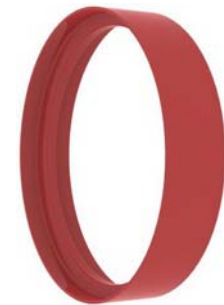
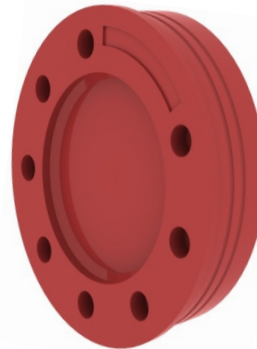
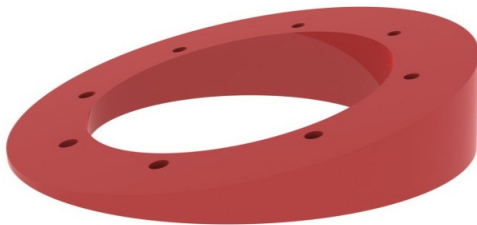
Encapsulation Fitting Examples



Flange Fitting Examples

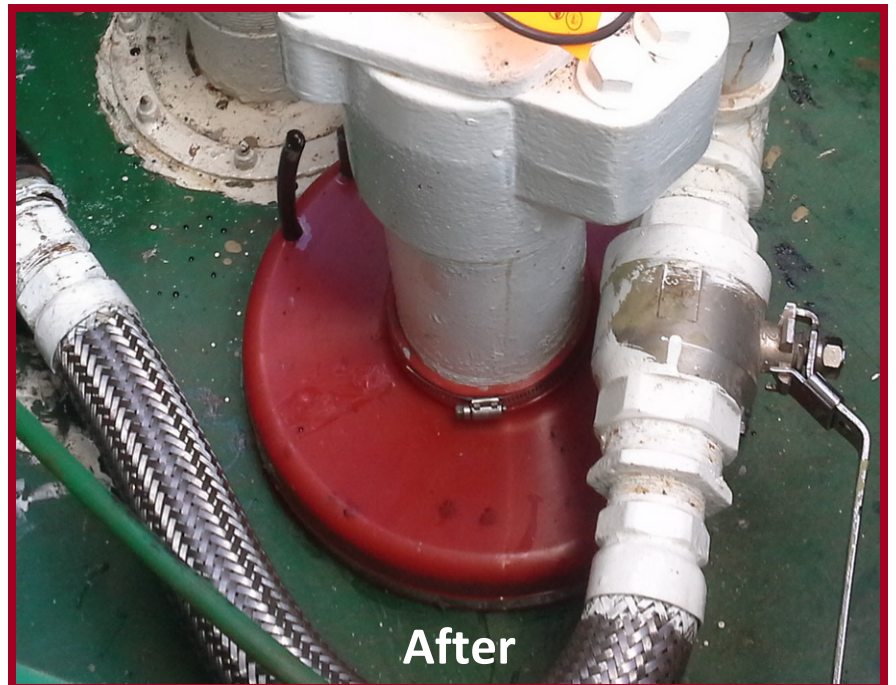
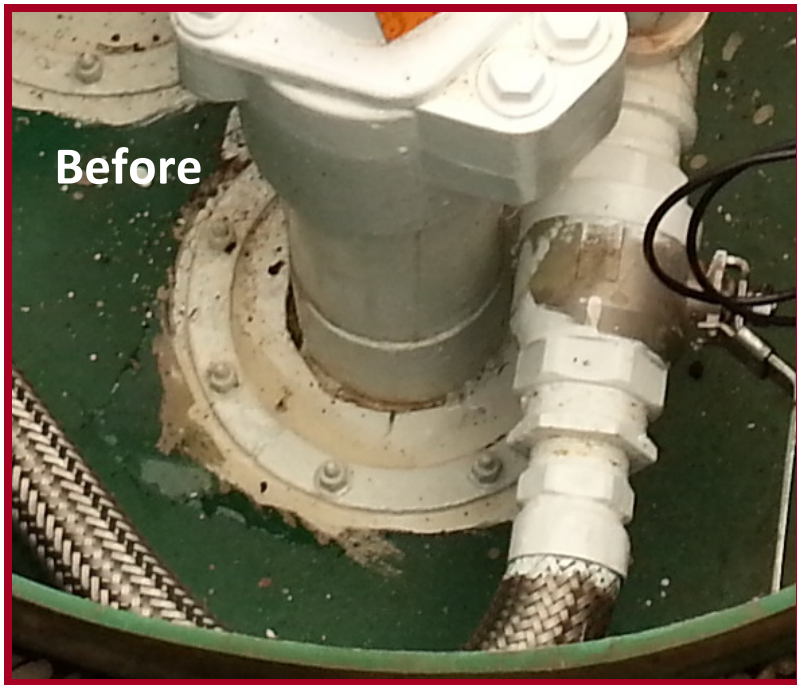


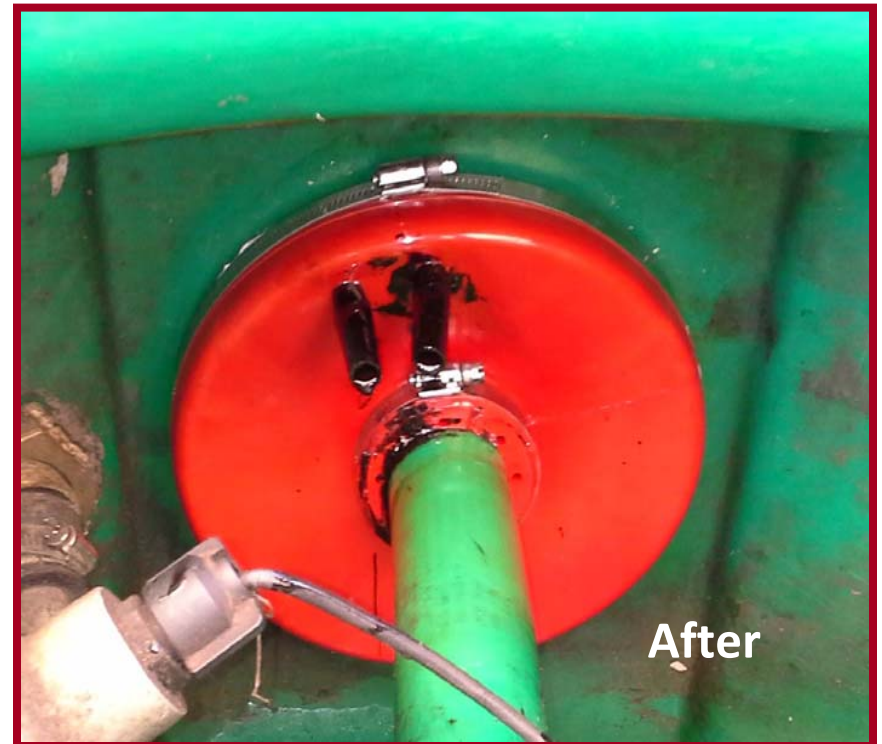
Fitting Options for All Applications



Split-Repair Fitting Applications



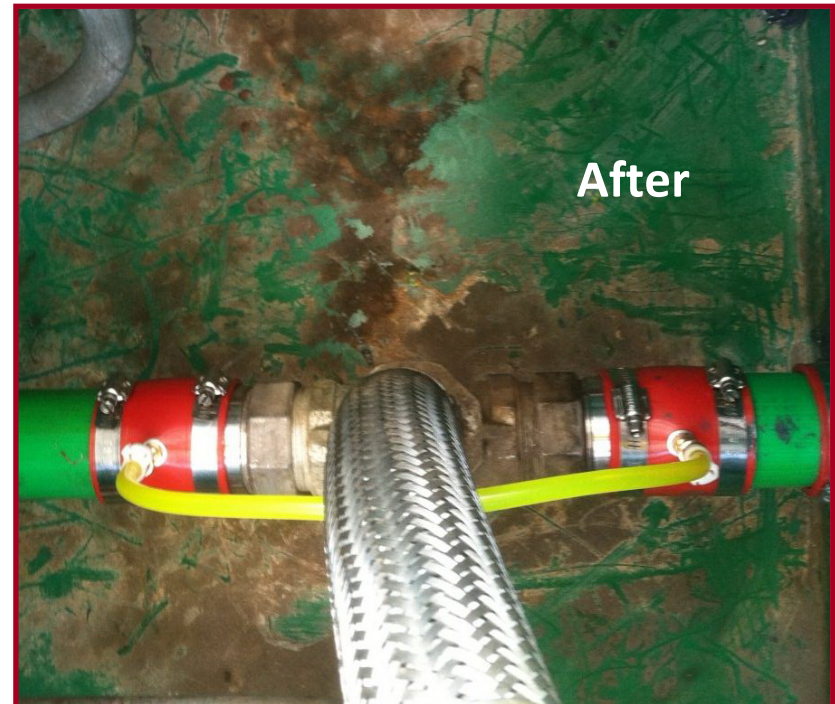












Approved Gasket Sealants & Fillers



Parts Specification Request

Easy as 1, 2, 3

1. **Take pictures** of the sump issues (i.e. fittings, other leaks, lids, etc) to identify what is in place currently, and...



...**identify the pipe** manufacturer and nominal size (i.e. Environ 1.5", OPW 1", Smith 2"). Otherwise, measure the OD of the unidentified pipe with an OD tape measure and provide those measurements and fitting combination.

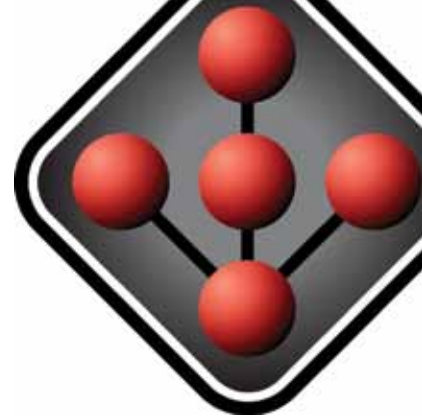
2. **Email** the pictures and other details with sufficient contact information to techsupport@iconcontainment.com.
3. Icon responds with a complete parts and materials list and pricing, including any special instructions that may be appropriate for the repair.



Containment Solutions

ForTex

A New Material for Maximum Durability



Icon Containment Solutions, LLC has spent significant time and resources in research and testing the latest advances in flexible materials for the purpose of identifying the most structurally and chemically durable repair and new construction sump entry fittings possible for petroleum UST and AST applications.

Icon worked specifically with polymer manufacturers in the U.S and research laboratories, including the European Polymer Research Laboratories at Queens University (Belfast, Ireland), to identify a material durable enough for the challenging environmental conditions of underground sumps and above ground storage containment and transition boxes. This research addressed the compatibility of all the latest fuels, ethanol blends and bio-fuels. Ultimately, a new material, labelled ForTex, was determined to be the best option for these applications.

Testing considered the true sump and backfill environments in which repair and pipe entry fittings are installed. With an understanding of the performance of materials currently in this market, Icon reviewed benchmark testing of ForTex for performance longevity in a range of different environmental conditions, including: High Density Hydrocarbons; Ozone; UV; High & Low-Temperatures; Water Saturation, and all current Fuels Saturation; Tensile Strength; Flexibility; and Vibration Stress. ForTex performed better than all of the current industry standard flexible materials.

In all testing conducted in-house and through 3rd parties there was no degradation leading to leakage. Including Underwriters Laboratories (UL), which was completed in October 2012. All Icon flexible components for Split-Repair and New Construction Sump Fittings are now made with ForTex. Icon's newest line of fittings for new construction, **RigidFlex**, are manufactured with a combination of glassed nylon housings and ForTex boots, and are backed by the RigidFlex Replacement guarantee for the life of the sump. (please see details)

Icon products are to be installed by Icon Certified Installers, and are only intended for uses described in the Icon training and marketing materials. Before use in any other application, user shall determine the suitability of the product by contacting Icon.



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