

**CONSTRUCTION CONTRACT
BETWEEN
CITY OF LARAMIE, WYOMING
AND
THERMAL ADVANTAGE, LLC**

1. **Parties.** This Contract is entered into this ____ day of August, 2017, by and between City of Laramie, Wyoming, (hereinafter referred to as "City"), whose address is 406 Iverson Street, Laramie, Wyoming 82072, and Thermal Advantage, LLC, (hereinafter referred to as "Contractor"), whose address is 10 Gopher Gulch Rd., Jelm, WY, 82063. City and Contractor agree to the terms set forth in this document.

2. **Purpose of Contract.** Contractor shall provide all labor, supervision, materials, equipment, all incidentals, related items and appurtenances, and performing all operations necessary to complete the Eight Million Gallon Reservoir Roof Repair Project in accordance with the Request for Qualifications documents dated July 23, 2017, labeled as the Eight Million Gallon Reservoir Roof Repair Project which is marked Attachment A and attached hereto and incorporated herein.

3. **Term of Contract.**

A. **Time of Commencement and Substantial Completion.**

(i) The work under this Contract shall commence no later than September 15, 2017, and be completed no later than October 13, 2017.

(ii) Performance under this Contract shall not begin prior to the date upon which the last required signature is affixed to this Contract or the date of the Contractor's receipt of a Notice to Proceed, whichever occurs later.

(iii) Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the use of additional contract time, will in no way operate as a waiver on the part of City of any of its rights under the Contract.

4. **Payment.**

A. **Contract Sum.**

(i) City agrees to pay Contractor for the services described herein. The total payment under this Contract shall not exceed Two Hundred Eighty Four Thousand, Eight Hundred Twenty Dollars and no cents, (\$284,820.00). No payment shall be made for work performed prior to the date upon which the last required signature is affixed to this Contract or the date of the Contractor's receipt of a Notice to Proceed, whichever occurs later.

(ii) Additional Notices to Proceed shall be issued corresponding to any respective Contract Amendments.

(iii) Pursuant to Wyo. Stat. §16-6-602, City shall pay interest beginning the forty-sixth day at the rate of one and one-half percent (1 ½%) per month on the unpaid balance of the progress payment until the account is paid in full, unless a good faith dispute exists as to City's obligation to pay all or a portion of the account.

B. Progress Payments.

(i) Contractor may submit monthly invoices for progress payment. Materials included on each invoice must either be installed or stored on site, additionally, any fees for labor must be performed prior to the submission of the invoice. No advance payment for materials or services may be requested. So long as the Contractor is satisfactorily progressing in performance of this contract, City may make monthly progress payments on the contract sum to the Contractor. Pursuant to Wyo. Stat. §16-6-702, City shall withhold ten percent (10%) of the calculated value of any work completed until one hundred percent (100%) of the work required by the contract has been performed. The withheld percentage of the contract price shall be retained in an account in the name of the Contractor which has been assigned to City until the contract is completed satisfactorily and finally accepted. Before the withheld percentage payment is made, City shall determine that satisfactory and substantial reasons exist for the payment and shall require written approval from any surety furnishing bonds for the contract work.

(ii) If it becomes necessary for City to take over the completion of the Contract, all amounts owed the Contractor, including the withheld percentage shall first be applied toward the cost of completion of the Contract, as provided in Wyo. Stat. §16-6-703, as amended. Any balance remaining of the retained percentage after completion by City shall be payable to Contractor or Contractor's creditors. The retained percentage which may be due to Contractor shall be due and payable as prescribed by Wyo. Stat. §16-6-116.

C. Final Payment.

(i) Final payment, constituting the entire unpaid balance of the contract sum, shall be paid by City to the Contractor when the Contract work has been completed, and the Contract fully performed. The Contractor shall make its request for final payment in writing to City. The Contractor's request for final payment must include the final reconciliation of the return of, and any restocking charges applied by the suppliers for any unused materials in storage. City shall determine in writing when the Contract work has been completed. Final payment will be made pursuant to Wyo. Stat. §§ 16-6-116 and 16-6-117, as amended.

(ii) No final payment will be made until the Contractor files a sworn statement, stating that all claims for material and labor performed under the Contract have been made, and that no liens or claims for unpaid materials, labor or equipment are outstanding. The sworn statement shall be filed with the appropriate entity, as designated in Wyo. Stat. § 16-6-117. A copy of the sworn statement shall be provided to City.

(ii) If any claim for material and labor is disputed, the sworn statement shall so state and include a copy of any claim or lien and the amount claimed. The amount claimed shall be deducted from the final payment and retained by City until the dispute is resolved, as provided in Wyo. Stat. § 16-6-117. The parties agree that City may, at its discretion, place the disputed amount in an interest bearing account. In the event the funds are placed in an interest bearing account, any and all accrued interest shall belong to City.

(iii) The warranty will be as defined in Attachment A. No final payment will be made until the Contractor provides a warranty security in the form of a certified or cashier's check or bond issued by a surety meeting the requirements of Article 5.01 of the General Conditions. The certified or cashier's check or bond shall be in the amount of the 5% of the original contract amount, and shall have an expiration date consistent with the final correction or warranty period.

D. Liquidated Damages.

(i) If the Contractor fails to complete the work within the time specified in the Contract, or within any authorized extension of time under a change order, Contractor shall pay to City as liquidated damages, the sum listed in the following table, for each calendar day of delay until the work is substantially complete, as approved by City.

Original Contract Amount		Liquidated Damages charge per calendar day
\$0.00	to \$50,000.00	\$500.00
\$50,000.01	to \$100,000.00	\$1,000.00
\$100,000.01	to \$500,000.00	\$1,500.00
\$500,000.01	to \$1,000,000.00	\$2,000.00
\$1,000,000.00	and greater	\$3,000.00

(ii) The liquidated damages shall be computed beginning the day following the first calendar day specified for completion and shall continue each and every calendar day until all work under the Contract is substantially complete, as approved by City.

(iii) Liquidated damages will not be charged for any work required to be done by the Contractor as a result of a final inspection, providing the work is only cleanup or of a minor nature and the Contractor has shown constant effort in completing the work, as determined by City. If deferment of the inspection is necessary due to causes which City determines to be beyond the control of and without the fault or negligence of the Contractor, liquidated damages will not be assessed for that period of time.

(iv) Nothing herein shall be construed to preclude City from the recovery of damages for causes other than the delay by the Contractor.

5. Responsibilities of Contractor.

A. The Contractor shall perform all work on the described project as required by the Contract documents. The work to be performed includes the labor and services necessary to produce such replacement, and all materials, supplies, tools, transportation, equipment, and machinery required for replacement.

B. This project bid includes all materials, labor and equipment to complete the Eight Million Gallon Reservoir Roof Repair Project as outlined in Attachment A.

6. General Provisions.

A. **Ownership of Documents/Work Product.** All documents, reports, records, field notes, materials, and data of any kind resulting from performance of this Contract are at all times the joint property of the Contractor and City. Upon termination of the Contract all of the above documents return to the City.

B. **Independent Contractor.** The Contractor shall function as an independent Contractor for the purposes of this Contract, and shall not be considered an employee of the City of Laramie for any purpose. The Contractor shall assume sole responsibility for any debts or liabilities that may be incurred by the Contractor in fulfilling the terms of this Contract, and shall be solely responsible for the payment of all federal, state, and local taxes which may accrue because of this Contract. Nothing in this Contract shall be interpreted as authorizing the Contractor or its agents and/or employees to act as an agent or representative for or on behalf of City, or to incur any obligation of any kind on the behalf of City. The Contractor agrees that no health/hospitalization benefits, workers' compensation and/or similar benefits available to City of Laramie employees will inure to the benefit of the Contractor or the Contractor's agents and/or employees as a result of this Contract.

C. **Amendments.** Any changes, modifications, revisions or amendments to this Contract which are mutually agreed upon by the parties to this Contract shall be incorporated by written instrument, executed and signed by all parties to this Contract.

D. **Insurance.** The Contractor shall maintain the following insurance:

(i) **Comprehensive General Liability.** Contractor shall have and maintain comprehensive general liability insurance coverage during the entire term of the Contract, against claims arising out of bodily injury, death, damage to or destruction of the property of others, including loss of use thereof, and including underground, collapse and explosion (XCU) and products and completed operations in an amount not less than five hundred thousand dollars (\$500,000.00) each occurrence and one million dollars (\$1,000,000.00) in the general aggregate.

(ii) **Workers Compensation or Employers Liability Insurance.** Contractor shall provide proof of workers compensation coverage, for all its employees who are to work on the projects described in this Contract. Contractor's coverage shall be under the Wyoming Workers Safety and Compensation program, if statutorily required, or such other workers compensation insurance as appropriate. Contractor's insurance shall include A Stop Gap coverage in an amount not less than Five Hundred Thousand Dollars (\$500,000.00) per employee for each accident and disease. Contractor shall

have also supply proof of workers' compensation and employer's liability insurance on each and every subcontractor before allowing that subcontractor on the job site.

(iii) **Business Automobile Liability.** Contractor shall maintain, during the entire term of the contract, automobile liability insurance in an amount not less than five hundred thousand dollars (\$500,000.00) per occurrence.

(iv) **Coverage.** All policies required under this Contract shall be in effect for the duration of this Contract and projects. All policies shall be primary and not contributory. Contractor shall pay the premiums on all insurance policies and insurance certificates must include a clause stating that the insurance may not be revoked, cancelled, amended or allowed to lapse until the expiration of at least thirty (30) days advance written notice to City.

(v) **Additional Insured.** All insurance policies required by this Contract, except workers' compensation, shall name City as an additional insured, and shall contain a waiver of subrogation against City, its agents and employees. Contractor shall provide, upon request a copy of an endorsement providing this coverage.

(vi) **City's Right to Reject.** The City reserves the right to reject a certificate of insurance if Contractor's insurance company is widely regarded in the insurance industry as financially unstable. This would include but is not limited to insurance companies with no less than AVIII rating in the A.M. Best insurance rating guide.

(vii) **Subcontractors.** The insurance requirements set forth above apply to all subcontractors. It is Contractor's responsibility to ensure that its subcontractors meet these insurance requirements. City has the right to review the Certificates of any and all subcontractors used by the Contractor.

(viii) **Cancellation.** There shall be no cancellation, material change, potential exhaustion of aggregate limits or intent to not renew insurance coverage without thirty (30) days written notice from Contractor or their insurers to City. Any failure to comply with the reporting provision of this insurance, except for the potential exhaustion of aggregate limits, shall not affect the coverage provided to City and its division, officers and employees.

E. Indemnification. The Contractor shall release indemnify, and hold harmless the state, City, and their officers, agents, employees, successors and assignees from any cause of action, or claims or demands arising out of Contractor's failure to perform any of the Contractor's duties and obligations under or in connection with the negligent performance of Contractor's duties or obligations, including but not limited to any claims, law suits, losses or liability arising out of Contractor's malpractice performance under this Contract.

F. Audit/Access to Records. The Contractor shall, immediately upon receiving written instruction from City, provide to any independent auditor, accountant, or accounting firm, all books documents, papers and records of the Contractor which are pertinent to this Contract. The Contractor shall cooperate fully with any such independent auditor, accountant, or accounting firm, during

the entire course of any audit authorized by City. There will be no cost for audit expense for City request to the Contractor.

G. Publicity. Any publicity given to the program or services provided herein, including, but not limited to, notices, information, pamphlets, press releases, research, reports, signs, and similar public notices prepared by or for the Contractor, shall identify City as the sponsoring City and shall not be released without prior written approval from City.

H. Assignment, Transfer and Subcontracting. Neither party shall assign or otherwise transfer any of the rights or delegate any of the duties set for in this Contract without the prior written approval of the other party. The Contractor shall not use this Contract, or any portion thereof, for collateral for any financial obligation, without the prior written permission of City. No such written approval shall relieve the Contractor of any obligations of this Contract and any transferee or subcontractor shall be considered the agent of the Contractor. The Contractor shall remain liable as between the original parties to the Contract as if no such assignment had occurred.

I. Compliance With Laws. The Contractor shall keep informed of and comply with all applicable federal, state and local laws and regulations in the performance of this Contract or any properly promulgated rules and regulations related thereto, and Section 504 of the Rehabilitation Act of 1973.

J. Wyoming Product Preference. Unless otherwise provided in the Contract, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of work, whether temporary or permanent. The Contractor shall comply with all resident and other preference requirements, including but not limited to those applicable to labor, materials and subcontractors. The Contractor agrees to provide Wyoming made goods where those goods are comparable in price and quality to those required by this Contract.

K. Termination of Contract. This Contract may be terminated for cause if the Contractor or City fails to perform in accordance with the terms and conditions of this Contract following delivery of a written thirty (30) day notice stating the grounds for such default.

L. Applicable Law/Venue. The construction, interpretation and enforcement of this Contract shall be governed by the laws of the State of Wyoming. The courts of the State of Wyoming shall have jurisdiction over this Contract and the parties, and the venue shall be the Second Judicial District, Albany County, Wyoming.

M. Nondiscrimination. The Contractor shall comply with Presidential Executive Order 11246 entitled, "Equal Employment Opportunity", as amended by Presidential Executive Order 11375, and as supplemented in the Department of labor Regulations (41 CFR Part 60), the Civil Rights Act of 1964, the Americans with Disabilities Act (ADA), 42 U.S.C. 12101, et seq., the Wyoming Fair Employment Practices Act (Wyo. Stat. § 27-9-105 et seq.), the Wyoming Human Rights Act, and the Age Discrimination Act of 1975.

All parties of this Contract agree that all hiring must be done on the basis of merit and qualifications. There may be no discrimination on the basis of race, color, religion, creed, political ideas, sex, age, marital status, physical or mental disability, or national origin by the person or persons performing the Contract including, but not limited to, the prevailing wage laws.

N. Entirety of Contract.

(i) The Contract shall consist of this document and its terms and conditions and the following documents: The Advertisement to Bid, Instructions to Bidders, Bid Form, Signature Sheets, Performance and Payment Bond, General Conditions, Supplementary Conditions, Specifications, Supplementary Specifications, Special Provisions, Notice to Proceed, duly issued Change Orders, Extra Work Orders and Field Orders, Addenda, and all modifications issued after execution of this Contract. The Contract documents are as fully a part of this Contract as if hereto attached or herein repeated. The Contract documents are complementary and what is required by one shall be as binding as if required by all. The Contractor warrants that it has carefully examined and understands all of the Contract documents listed above, prior to starting any work under this Contract. The Contractor has not identified any issues from the above documents or site conditions which would prevent accomplishing the entire work as outlined in the Project Manual which is marked Attachment A and attached hereto and incorporated herein. Modifications include but are not limited to the following: (1) change orders (2) extra work orders or (3) addenda entered into by the parties pursuant to the terms of the Contract.

(ii) The Contract does not include prior negotiations or any other documents not specifically enumerated in the contract documents delineated in subparagraph (A) above.

(iii) This Contract, consisting of eleven (11) pages, along with the documents explicitly enumerated in Paragraph 6 (N) above and Attachment A entitled Request for Qualifications for the Eight Million Gallon Reservoir Roof Repair Project dated July 23, 2017, represent the entire and integrated Contract between the parties and supersede all prior negotiations, representations, and agreements, whether written or oral. The Contractor shall report to City any error, inconsistency or omission it may discover. City, after consulting with the Contractor, will make a determination on correction of such error. The Contractor may request a change order, under the change order provisions of this Contract, in conjunction with any required correction, if appropriate.

(iv) The terms and language set forth in this Contract have been negotiated by City and the Contractor and have not been drafted unilaterally by either party. By executing this Contract, the Contractor represents that it has carefully read, studied, compared and examined all contract documents, including the specifications, is satisfied with the sufficiency of the contract documents, and shall not, at any time, complain of defects or inaccuracies in such documents, specifications or drawings.

P. Confidentiality of Information. All documents, data compilations, reports, computer programs, photographs, and any other work provided to or produced by the Contractor in the performance of this Contract shall be kept confidential by the Contractor unless written permission is granted by City for its release.

Q. Force Majeure. Neither party shall be liable for failure to perform under this Contract if such failure to perform arises out of causes beyond the control and without the fault or negligence of the non-performing party. Such causes may include, but are not limited to, acts of God or the public enemy, fires, floods, epidemics, quarantine restrictions, freight embargoes, and usually severe weather. This provision shall become effective only if the party failing to perform immediately notifies the other party of the extent and nature of the problem, limits delay in performance to that required by the event, and takes all reasonable steps to minimize delays. This provision shall not be effective unless the failure to perform is beyond the control and without the fault or negligence of the non-performing party.

R. Kickbacks. The Contractor certifies and warrants that no gratuities, kickbacks or contingency fees were paid in connection with this contract, nor were any fees, commissions, gifts, or other considerations made contingent upon the award of this Contract. If the Contractor breaches or violates this warranty, City may, at its discretion, terminate this Contract without liability to City, or deduct from the contract price or consideration, or otherwise recover, the full amount of any commission, percentage, brokerage, or contingency fee.

S. Notices. All notices arising out of, or from, the provisions of this Contract shall be in writing and given to the parties at the address provided under this Contract, either by regular mail, facsimile, e-mail, or delivery in person.

T. Liaison and Notice. City Project Manager & Contractor Superintendent.

(i) City project manager is Cal Van Zee, telephone number: (307) 721-5206, facsimile, (307) 742-7174, cell phone number, (307)-760-9804, and e-mail: cvanzee@cityoflaramie.org.

(ii) The Contractor's Project Superintendent is Chad Koske, telephone number: (307)-760-4295 and e-mail: ckoske@icloud.com.

(iii) All notices and invoices required in this Contract shall be in writing, properly addressed to the liaison above, and mailed first-class, postage prepaid. All notices sent via U.S. Postal Services are deemed effective on the date of postmark. Notices and invoices mailed through another carrier (e.g., UPS or FedEx) are effective upon receipt.

U. Sovereign Immunity. The City does not waive sovereign immunity by entering into this Contract, and specifically retains immunity and all defenses available to them as sovereign pursuant to Wyo. Stat. § 1-39-104(a) and all other state law.

V. Taxes. The Contractor shall pay all taxes and other such amounts required by federal, state and local law, including but not limited to federal and social security taxes, workers' compensation, unemployment insurance and sales taxes.

W. Third Party Beneficiary Rights. The parties do not intend to create in any other individual or entity the status of third party beneficiary, and this Contract shall not be construed so as to create such status. The rights, duties, and obligations contained in this Contract shall operate only between the parties to this Contract, and shall inure solely to the benefit of the parties to this Contract.

The provisions of this Contract are intended only to assist the parties in determining and performing their obligations under this Contract. The parties to this Contract intend and expressly agree that only parties signatory to this Contract shall have any legal or equitable right to seek to enforce this Contract, to seek any remedy arising out of a party's performance or failure to perform any term or condition of this Contract, or to bring an action for the breach of this Contract.

X. Americans with Disabilities Act. Contractor shall not discriminate against a qualified individual with a disability and shall comply with the Americans with Disabilities Act, P.L. 101-336, 42 U.S.C. 12101 *et seq.* and any properly promulgated rules and regulations related thereto.

Y. Warranty. Contractor warrants the following:

- (i) has the ability to perform the agreed services;
- (ii) shall provide suitable resources to perform work in accordance with agreed services;
- (iii) will endeavor to provide the services herein on a timely basis consistent with the difficulty and scope of services to be provided; and
- (iv) shall perform all work in a professional and workmanship like manner.

Z. Patent or Copyright Protection. Contractor recognizes that certain proprietary matters or techniques may be subject to patent, trademark, copyright, license or other similar restrictions, and warrants that no work performed by Contractor or its subcontractors will violate any such restriction.

AA. Extension. Nothing in this Contract shall be interpreted or deemed to create an expectation that this Contract will be extended beyond the term described herein. Any extension of this Contract shall be requested by the Contractor and following approval by City shall be effective only after it is reduced to writing and executed by all parties to the Contract. Any agreement to extend this Contract shall include, but not necessarily be limited to: an unambiguous identification of the Contract being extended; the term of the extension; the amount of any payment to be made during the extension, or a statement that no payment will be made during the extension; a statement that all terms and conditions of the original Contract shall, unless explicitly delineated in the exception, remain as they were in the original Contract; and, if the duties of either party will be different during the extension than they were under the original Contract, a detailed description of those duties.

BB. Availability of Funds. Each payment obligation of City is conditioned upon the availability of government funds which are appropriated or allocated for the payment of this obligation. If funds are not allocated and available for the continuance of the services performed by the Contractor, the contract may be terminated by City at the end of the period for which the funds are available. City shall notify the Contractor at the earliest possible time of the services which will or may be affected by a shortage of funds. No penalty shall accrue to City in the event this provision is exercised, and City shall not be obligated or liable for any future payments due or for any damages as a result of termination under

this section. This provision shall not be constructed to permit City to terminate this Contract to acquire similar services from another party.

CC. Award of Related Contracts. City may undertake or award supplemental or successor contracts for work related to this Contract. The Contractor shall cooperate fully with other contractors and City in all such cases.

DD. Time is of the Essence. Time is of the essence in all provisions of the Contract.

EE. Titles Not Controlling. Titles of paragraphs and sections are for reference only, and shall not be used to control the language in the contract.

FF. Severability. Should any portion of this Contract be judicially determined to be illegal or unenforceable, the remainder of this Contract shall continue in full force and effect and either party may attempt to renegotiate the terms affected by the severance.

INTENTIONALLY LEFT BLANK

IN WITNESS WHEREOF, the Laramie City Council has caused this Agreement to be signed and executed in its behalf by its Mayor, and duly attested by its City Clerk, and Contractor has signed and executed this Agreement, the day and year first written above.

CITY OF LARAMIE, WYOMING:

By: _____
Andrea Summerville, Mayor and President of the
City Council

Attest: _____
Angie Johnson
City Clerk

CONTRACTOR:

THERMAL ADVANTAGE, LLC

By: _____


Title: OWNER/PRESIDENT

ATTACHMENT A

Estimate

Thermal Advantage, LLC

10 Gopher Gulch Rd
Jelm, Wy. 82063

Number **224**

Date **Jul 23, 2017**

P.O. **Water Tank Roof**

Terms

Ship Via

Ship Date

Bill To

City Of Laramie
Cal Van Zee

Qty	Description	Unit	Ext
1	Prep or demolltion Cleaning of roof surface. Fasteners checked for tightness. All caulking of joints larger than 1/8" with silicon coatings.	7,520.00	7,520.00
1	Versa Flex Poly Urea coatings applied to roof surface at a average of 50-60 mils in thickness. This product will be tack free in under 2 minutes. At that point it will be considered rain safe. We will offer a full 2 year warranty on this job. After two year warranty, the cost of product only for any repairs for the next 3 years. At that time we can access how the roof is performing and come up with a maintenance program if needed.	277,300.00	277,300.00

Total \$284,820.00

Signature



VersaFlex Incorporated
 686 S. Adams Street
 Kansas City, KS 66105
 913-321-9000
 913-321-1490 (Fax)

Product Data Sheet

FSS 45DC™

Spray Polyurea

USGBC LEED, EQ Credit 4:

Low-emitting VOC Compliant Materials

Product Description- VersaFlex FSS 45DC is a fast set, rapid curing, 100% solids, flexible, two-component polyurea elastomer spray coating material. FSS 45DC is used by itself or in combination with other materials to produce coatings, liners, wearing courses and resilient surfaces on concrete and other substrates. FSS 45DC produces an extremely tough film at all thicknesses. FSS 45DC may be applied in all positions and to any properly prepared substrates. FSS 45DC is inert, it will not hydrolyze, leach, or contaminate other materials, and is bondable and paintable. FSS 45DC is relatively moisture and temperature insensitive, allowing application in the most problematic ambient conditions.

Uses- VersaFlex FSS 45DC is a superior coating designed for concrete and other substrates involving industrial applications receiving constant or intermittent attack from contained materials, subsurface hydrostatic pressure, and abrasive action. FSS 45DC is flexible, accommodating to movement of the substrate, yet strong enough to remain intact under all conditions except major structural dislocations. With or without reinforcements, FSS 45DC may be used in transitional areas with confidence. FSS 45DC may be used in interior or exterior applications.

Ideal for Applications in:

- Industrial facilities
- Parking garage decks
- Below grade waterproofing
- Above grade waterproofing
- Water & waste water treatment
- Food processing facilities
- Pulp & paper mills
- Bottling & canning facilities
- Walkways & balconies
- Secondary containment

Advantages:

- 100% solids, no VOC's
- Odorless, no toxic vapors
- Tough elastomeric membrane
- Excellent thermal stability
- Minimal downtime
- Low permeance rate
- Good resistance to a wide range of chemical attack
- USDA approved
- Exposure temperature range from -40°F to 350°F, dry

Physical Properties-

Property	Test Method	Typical Value
VOC	Theoretical	0%
Solids Content	Theoretical	100%
Gel Time	ASTM D1640	15 - 30 seconds
Tack Free	ASTM D1640	75 - 105 seconds
Light Traffic	ASTM D1640	60 - 120 minutes
Tensile Strength (psi)	ASTM D638	1,800 - 2,400
Tensile Elongation (%)	ASTM D638	450 - 520
100% Modulus (psi)	ASTM D638	960
300% Modulus (psi)	ASTM D638	1,450
Tear Strength (pli, Die C)	ASTM D624	325 - 450
Moisture Vapor Transmission, perms	ASTM E96	0.025
Shore (D) Hardness	ASTM D2240	45
Taber abrasion, mg wt. loss (1000 g, 1000 revs, H-18)	ASTM D4060	150 - 250

The value ranges stated in this Technical Data Sheet are based on system processing under laboratory conditions. Equipment configurations and/or field application conditions may produce variances in final system values.

Limitations- FSS 45DC should not be used for direct contact with extremely high or low pH attack. Composite systems are available. Consult *VersaFlex*.

Coverage Rates- Theoretical square feet per gallon

*Note: 1604 mil inches per gallon. Totally dependent on substrate texture and condition.

Mils	10	15	50	60	80	100	125
Sq. Ft.	160	107	32	27	20	16	13

Packaging-

- **One Hundred Ten Gallon Kit:** 55 gallons of 'A' side and 55 gallons of 'B' side. Drum containers filled by weight, volume is closely approximated.

Mixing- FSS 45DC must be spray applied using approved equipment. Use 1:1 ratio pump, with appropriate material heaters as required for individual application.

Colors- View ColorFlex chart at versaflex.com.

Preparation & Installation- Please review the Material Processing & Handling Information for preparation and application procedures. Substrate priming is not required on all metals, consult *VersaFlex* for recommendations. Also, please consult the *VersaFlex* Spray Gun Configuration Recommendation PDF for specific modules and tips.

Clean Up- Cured product may be disposed of without restriction. Excess liquid 'A' & 'B' material should be mixed together and allowed to cure, then disposed of in the normal manner. Product containers that are "drip free" may be disposed of according to local, state and federal laws.

Safety- Review MSDS at VersaFlex.com

Basic safety for personal protection is:

- Long sleeve overalls or disposable Tyvek overalls
- Rubber gloves
- Splash shield or safety glasses with splash guards
- Rubber or leather boots
- Respirator
- Do not use near high heat or open flame
- Do not take internally
- Keep out of reach of children

Shelf Life- One year from date of shipment, in original, unopened factory containers, under normal storage conditions of 60°F to 95°F (18°-35°C).

Technical Services- Sales and Customer Support 913-321-9000

Warranty- *VersaFlex Incorporated* will refund the price of or replace, at its election, product it finds to be defective provided the product has been used properly. Except as expressly stated above, the company makes no warranty of merchantability and no warranty of fitness for any particular purpose, nor does it make any warranty, expressed or implied, of any nature whatsoever with respect to the product of its use. In no event shall the company be liable for delay caused by defects, for loss of use, for indirect, special or consequential damages, or for any changes or expenses of any nature incurred without its written consent.



VersaFlex Incorporated
 686 S. Adams Street
 Kansas City, KS 66105
 913-321-9000
 913-321-1490 (Fax)

Product Data Sheet

VF 380-F™

Elastomeric Polyurea
 USGBC LEED, EQ Credit 4:
 Low-emitting VOC Compliant Materials

Product Description- VersaFlex VF 380-F is a 100% solids elastomeric polyurea developed for applications such as geotextile lining membranes. VF 380 may also be applied to concrete and steel substrates. VF 380-F is a volatile free, odorless system applied with 1:1 mix ratio with plural component spray equipment.

Uses- VersaFlex VF 380-F provides less shrinkage with improved elongation characteristics. As a result, VF 380-F makes an excellent polyurea for liners, geotextile coatings, and applications where resilience and durability are required. VF 380-F may be applied at varying thicknesses in a single application using a multi-pass spray technique.

Ideal for Applications In:

- Waterproofing membranes
- Geotextile coatings
- Secondary containment
- Foam coatings
- Flexible membranes
- Liners
- Oil production water/condensate containments
- Typical ambient waste water & hydrogen sulfide exposures

Advantages:

- 100% solids, no VOC's
- 1:1 mix ratio by volume
- Rapid cure and fast gel time
- Immediate return to service
- Applied by plural component spray
- Odorless
- No VOC's
- Low curing stress shrinkage
- Exposure temperatures -40°F to 350°F, dry

Physical Properties-

(Typical) 1:1 Mix Ratio		
Cured Film Properties	Test Method	Typical Value
VOC	Theoretical	0%
Solids content	Theoretical	100%
Shore A hardness	ASTM D2240	80 - 85
Elongation	ASTM D638	350 - 390%
Tensile strength, psi	ASTM D638	2000 - 2500
Elastic Modulus (psi)	ASTM D638	500 - 900
Tear strength	ASTM D624	300 - 400 (lb./in.)
Moisture vapor transmission	ASTM E-96	0.02 perm
Taber abrasion, mg wt. loss (1000 g, 1000 revs, CS-17)	ASTM D4060	95 - 125
Gel time	ASTM D1640	7 - 12 seconds
Tack free	ASTM D1640	60 - 100 seconds

The value ranges stated in this Technical Data Sheet are based on system processing under laboratory conditions. Equipment configurations and/or field application conditions may produce variances in final system values.

Limitations- VF 380-F should not be used for direct contact with extremely high or low pH attack. Composite systems are available.

Coverage Rates- Theoretical square feet per gallon

*Note: 1604 mil inches per gallon. Totally dependent on substrate texture and condition.

Mils	10	15	50	60	80	100	125
Sq. Ft.	160	107	32	27	20	16	13

Packaging-

- One Hundred Ten Gallon Kit: 55 gallons of 'A' side and 55 gallons of 'B' side. Drum containers filled by weight, volume is closely approximated.

Mixing- VF 380-F must be spray applied using approved equipment. Use 1:1 ratio pump with appropriate material heaters, as required for individual application. See Material Processing & Handling Information for further details.

Colors- Refer to the ColorFlex chart at www.versaflex.com

Preparation & Installation- Review the material Processing & Handling Information for preparation and application procedures. Substrate priming is not required on all substrates, consult *VersaFlex* for recommendations. Also, consult the *VersaFlex* Spray Gun Configuration Recommendation pdf for specific modules and tips.

Clean Up- Cured product may be disposed of without restriction. Excess liquid 'A' & 'B' material should be mixed together and allowed to cure, then disposed of in the normal manner. Product containers that are "drip free" may be disposed of according to local, state and federal laws.

Safety- Review MSDS at VersaFlex.com

Basic safety for personal protection is:

- Long sleeve overalls or disposable Tyvex overalls
- Rubber gloves
- Splash shield or safety glasses with splash guards
- Rubber or leather boots
- Respirator
- Do not use near high heat or open flame
- Do not take internally
- Keep out of reach of children

Shelf Life- One year from date of shipment, in original, unopened factory containers, under normal storage conditions of 60°F to 95°F (16°-35°C).

Technical Services- Sales and Customer Support 913-321-9000

Warranty-*VersaFlex Incorporated* will refund the price of or replace, at its election, product it finds to be defective provided the product has been used properly. Except as expressly stated above, the company makes no warranty of merchantability and no warranty of fitness for any particular purpose, nor does it make any warranty, expressed or implied, of any nature whatsoever with respect to the product of its use. In no event shall the company be liable for delay caused by defects, for loss of use, for indirect, special or consequential damages, or for any changes or expenses of any nature incurred without its written consent.