

SECTION 00300 – PROPOSAL

TO THE MAYOR AND COMMISSIONERS
CITY OF HOLLYWOOD, FLORIDA

SUBMITTED February 1, 2018

Dear Mayor and Commissioners:

The undersigned, as BIDDER, hereby declares that the only person or persons interested in the Proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this Proposal or in the Contract to be entered into; that this Proposal is made without connection with any other person, company or parties making a Bid or Proposal; and that it is in all respects fair and in good faith without collusion or fraud.

The BIDDER further declares that he has examined the site of the Work and informed himself fully in regard to all conditions pertaining to the place where the Work is to be done; that he has examined the Drawings and Specifications for the Work and contractual documents relative thereto, including the Notice to Bidders, Instructions to Bidders, Proposal Bid Form, Form of Bid Bond, Form of Contract and Form of Performance Bond, General, Supplementary and Technical Specifications, Addenda, Drawings, and MBE/WBE Program, Exhibit A-D, and has read all of the Provisions furnished prior to the opening of bids; and that he has satisfied himself relative to the work to be performed.

The undersigned BIDDER has not divulged to, discussed or compared his bid with other bidders and has not colluded with any other BIDDER of parties to this bid whatever.

If this Proposal is accepted, the undersigned BIDDER proposes and agrees to enter into and execute the Contract with the City of Hollywood, Florida, in the form of Contract specified; of which this Proposal, Instructions to Bidders, General Specifications, Supplementary Conditions and Drawings shall be made a part for the performance of Work described therein; to furnish the necessary bond equal to one hundred (100) percent of the total Contract base bid, the said bond being in the form of a Cash Bond or Surety Bond prepared on the applicable approved bond form furnished by the CITY; to furnish all necessary materials, equipment, machinery, tools, apparatus, transportation, supervision, labor and all means necessary to construct and complete the work specified in the Proposal and Contract and called for in the Drawings and in the manner specified; to commence Work on the effective date established in the "Notice to Proceed" from the ENGINEER; and to substantially complete all Contract Work as per Project Schedule of Section 00800, and stated in the "Notice to Proceed" or pay liquidated damages for each calendar day in excess thereof, or such actual and consequential damages as may result therefrom, and to abide by the MBE/WBE Program.

The BIDDER acknowledges receipt of the following addenda:

No. 1 Dated January 17, 2018
No. _____ Dated _____
No. _____ Dated _____

And the undersigned agrees that in case of failure on his part to execute the said Contract and the Bond within ten (10) days after being presented with the prescribed Contract forms, the check or Bid Bond accompanying his bid, and the money payable thereon, shall be paid into the funds of the City of Hollywood, Florida, otherwise, the check or Bid Bond accompanying this Proposal shall be returned to the undersigned.

Attached hereto is a certified check on the

_____ Bank of _____

or approved Bid Bond for the sum of

10% of bid amount Dollars (\$ 10%) according to the conditions under the Instructions to Bidders and provisions therein.

NOTE: If a Bidder is a corporation, the legal name of the corporation shall be set forth below, together with signature(s) of the officer or officers authorized to sign Contracts on behalf of the corporation and corporate seal; if Bidder is a partnership, the true name of the firm shall be set forth below with the signature(s) of the partner or partners authorized to sign Contracts in behalf of the partnership; and if the Bidder is an individual, his signature shall be placed below; if a partnership, the names of the general partners.

WHEN THE BIDDER IS AN INDIVIDUAL:

N/A

(Signature of Individual)

N/A

(Printed Name of Individual)

N/A

(Address)

WHEN THE BIDDER IS A SOLE PROPRIETORSHIP OR OPERATES UNDER A TRADE NAME:

N/A

(Name of Firm)

N/A

(Address)

N/A

(Signature of Individual) (SEAL)

WHEN THE BIDDER IS A PARTNERSHIP:

N/A

(Name of Firm) A Partnership

N/A

(Address)

By: N/A

(SEAL)

(Partner)

Name and Address of all Partners:

N/A

N/A

WHEN THE BIDDER IS A JOINT VENTURE:

N/A

(Correct Name of Corporation)

By: N/A

(SEAL)

(Address)

N/A

(Official Title)

As Joint Venture

(Corporate Seal)

Organized under the laws of the State of N/A, and authorized by the law to make this bid and perform all Work and furnish materials and equipment required under the Contract Documents.

WHEN THE BIDDER IS A CORPORATION:

Infinity Roofing & Sheet Metal Inc

(Correct Name of Corporation)

By: John B. Mitala

(SEAL)

President

(Official Title)

1150 SW 10 Ave. Suite 201W

Pompano Beach, FL 33069

(Address of Corporation)

Organized under the laws of the State of Florida, and authorized by the law to make this bid and perform all Work and furnish materials and equipment required under the Contract Documents.

CERTIFIED COPY OF RESOLUTION OF BOARD OF DIRECTORS

Infinity Roofing & Sheet Metal Inc

(Name of Corporation)

RESOLVED that John B. Mitala

(Person Authorized to Sign)

President

Infinity Roofing & Sheet Metal Inc of

(Title)

(Name of Corporation)

be authorized to sign and submit the Bid or Proposal of this corporation for the following project:

CITY OF HOLLYWOOD, FLORIDA

DRAINAGE IMPROVEMENTS FOR ALLEYS SOUTH OF HOLLYWOOD
BOULEVARD, BETWEEN 22ND AND 26TH AVENUES

PROJECT NO. 16-11040

The foregoing is a true and correct copy of the Resolution adopted by

Infinity Roofing & Sheet Metal Inc at a meeting of its Board of
(Name of Corporation)

Directors held on the 30 day of February, 2018.

By: John B. Mitala

Title: President

(SEAL)

The above Resolution MUST BE COMPLETED if the Bidder is a Corporation.

- END OF SECTION -

SECTION 00301

**CITY OF HOLLYWOOD
DEPARTMENT OF PUBLIC UTILITIES
ENGINEERING & CONSTRUCTION SERVICES DIVISION**

PROPOSAL BID FORM**Project No.: 17-2142****Project Name: Meter Shop Roof Replacement**

If this Proposal is accepted, the undersigned Bidder agrees to complete all work under this contract within 60 calendar days following the issuance of the Notice to Proceed. All entries on this form must be typed or written in block form in ink.

BASE BID:

No.	Description	Qty	Unit	Unit Price	Total
1	Mobilization/Demobilization, Bonds and Insurance	1	LS	\$ 3,658.00	\$ 3,658.00
2	Install new roof – east section from expansion joint.	1	LS	\$71,255.00	\$71,255.00
3	Install new roof – west section from expansion joint.	1	LS	\$41,925.00	\$ 41,925.00
4	Install new gutters, downspouts and splash blocks on north-, east- and south-sides of building – east section from expansion joint	1	LS	\$3,609.00	\$3,609.00
5	Install new gutters, downspouts and splash blocks on south-side of building– west section from expansion joint.	1	LS	\$1,800.00	\$1,800.00
6	Remove / replace turbine vent, APV vent and 2 – 2' X 2' exhaust vents east side of expansion joint	1	LS	\$5,750.00	\$5,750.00
7	Perform all mechanical and electrical tasks and/or installation necessary to complete project.	1	LS	\$8,250.00	\$8,250.00
8	Repair and/or replace existing broken concrete roof features.	1	LS	15,500.00	15,500.00

SECTION 00301

**CITY OF HOLLYWOOD
DEPARTMENT OF PUBLIC UTILITIES
ENGINEERING & CONSTRUCTION SERVICES DIVISION**

PROPOSAL BID FORM

9	Owner's Contingency	1	LS		\$25,000
10	Permit, Licenses, Testing / Engineering and Fee Allowance	1	LS		\$5,000
11	Consideration of Indemnification	1	LS		\$10.00
	TOTAL BASE BID				\$186,551.00
TOTAL BASE BID IN WORDS					
One hundred and eighty-six thousand, five hundred and fifty-one dollars					

NOTES:

1. SUBSTANTIAL COMPLETION TIME AND PROJECT CLOSEOUT TIME FOR THE CONTRACT SHALL BE AS DEFINED IN THE PROJECT SCHEDULE IN THE SUPPLEMENTARY GENERAL CONDITIONS (SGC'S).

SECTION 00410

APPROVED BID BOND

(Construction)

STATE OF FLORIDA

KNOW ALL MEN BY THESE PRESENTS:

That we Infinity Roofing and Sheet Metal Inc., as Principal, and, as Surety, are held and firmly bound unto the City of Hollywood in the sum of 10% of the Bid Amount Dollars (\$ 10% of the Bid Amount) lawful money of the United States, amounting to 10% of the total Bid Price, for the payment of said sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal has submitted the accompanying bid, dated January 29 20 18 for

CITY OF HOLLYWOOD, FLORIDA
METER SHOP ROOF REPLACEMENT PROJECT

PROJECT NO. 17-2142

NOW, THEREFORE, if the principal shall not withdraw said bid within 90 days after date of the same and shall within ten days after the prescribed forms are presented to him for signature, enter into a written contract with the CITY, in accordance with the bid as accepted, and give bond with good and sufficient surety or sureties, and provide the necessary Insurance Certificates as may be required for the faithful performance and proper fulfillment of such Contract, then this obligation shall be null and void.

Approved Bid Bond

In the event of the withdrawal of said bid within the specified period, or the failure to enter into such contract and give such bond and insurance within the specified time, the principal and the surety shall pay to the City of Hollywood the difference between the amount specified in said bid and such larger amount for which the City of Hollywood may in good faith contract with another party to perform the work and/or supply the materials covered by said bid.

IN WITNESS WHEREOF, the above bound parties have executed this statement under their several seals this 29th
day of January, 2018, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

WHEN THE PRINCIPAL IS AN INDIVIDUAL:

Signed, sealed and delivered in the presence of:

[Signature]
Witness

1341 NW 46 ST
Address

FT LAUDERDALE FL 33309

[Signature]
Signature of Individual

JOHN B. MITALQ
Printed Name of Individual

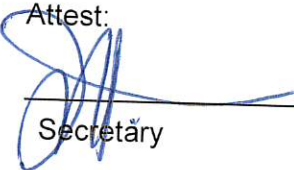
Claudi Gray
Witness

11259 NW 21 PLACE
Address

Coral Springs, FL 33071

WHEN THE PRINCIPAL IS A CORPORATION:

Attest:


Secretary

Infinity Roofing and Sheet Metal, Inc.

Name of Corporation

1150 SW 10th Ave, Suite 201W

Business Address

Pompano Beach, FL 33069

By:

JOHN B. MITALA
(Affix Corporate Seal)

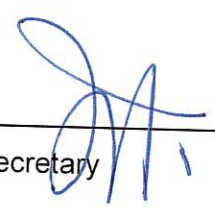
JOHN B MITALA

Printed Name

PRES / SECRETARY
Official Title

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, JOHN B. MITALA, certify that I am the secretary of the Corporation named as Principal in the attached bond; that JOHN B. MITALA who signed the said bond on behalf of the Principal, was then SECRETARY of said Corporation; that I know his signature, and his signature thereto is genuine and that said bond was duly signed, sealed and attested for and on behalf of said Corporation by authority of its governing body.


Secretary

(SEAL)

TO BE EXECUTED BY CORPORATE SURETY:

Attest:

[Signature]
Secretary

United States Fire Insurance Company
Corporate Surety
Morristown, NJ
Business Address

BY: [Signature]
(Affix Corporate Seal)

Tina Shannon
Attorney-in-Fact Tina Shannon
Frank H Furman, Inc.
Name of Local Agency
1314 E Atlantic Blvd
Business Address
Pompano Beach, FL 33060

STATE OF FLORIDA

Before me, a Notary Public, duly commissioned, qualified and acting, personally appeared, Tina Shannon to me well known, who being by me first duly sworn upon oath says that he is the attorney-in-fact for the Surety and that the has been authorized by United States Fire Ins. Co. to execute the forgoing bond on behalf of the CONTRACTOR named therein in favor of the City of Hollywood, Florida. Subscribed and sworn to before me this 29th day of January, 2018

[Signature]
Notary Public, State of Florida

My Commission Expires:



- END OF SECTION -

**POWER OF ATTORNEY
UNITED STATES FIRE INSURANCE COMPANY
PRINCIPAL OFFICE - MORRISTOWN, NEW JERSEY**

07519430418

KNOW ALL MEN BY THESE PRESENTS: That United States Fire Insurance Company, a corporation duly organized and existing under the laws of the state of Delaware, has made, constituted and appointed, and does hereby make, constitute and appoint:

Dirk D. DeJong, Tina Shannon, Sharon R. Myers

each, its true and lawful Attorney(s)-In-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver: Any and all bonds and undertakings of surety and other documents that the ordinary course of surety business may require, and to bind United States Fire Insurance Company thereby as fully and to the same extent as if such bonds or undertakings had been duly executed and acknowledged by the regularly elected officers of United States Fire Insurance Company at its principal office, in amounts or penalties not exceeding: **Seven Million, Five Hundred Thousand Dollars (\$7,500,000).**

This Power of Attorney limits the act of those named therein to the bonds and undertakings specifically named therein, and they have no authority to bind United States Fire Insurance Company except in the manner and to the extent therein stated.

This Power of Attorney revokes all previous Powers of Attorney issued on behalf of the Attorneys-In-Fact named above and expires on January 31, 2019.

This Power of Attorney is granted pursuant to Article IV of the By-Laws of United States Fire Insurance Company as now in full force and effect, and consistent with Article III thereof, which Articles provide, in pertinent part:

Article IV, Execution of Instruments - Except as the Board of Directors may authorize by resolution, the Chairman of the Board, President, any Vice-President, any Assistant Vice President, the Secretary, or any Assistant Secretary shall have power on behalf of the Corporation:

(a) to execute, affix the corporate seal manually or by facsimile to, acknowledge, verify and deliver any contracts, obligations, instruments and documents whatsoever in connection with its business including, without limiting the foregoing, any bonds, guarantees, undertakings, recognizances, powers of attorney or revocations of any powers of attorney, stipulations, policies of insurance, deeds, leases, mortgages, releases, satisfactions and agency agreements;

(b) to appoint, in writing, one or more persons for any or all of the purposes mentioned in the preceding paragraph (a), including affixing the seal of the Corporation.

Article III, Officers, Section 3.11, Facsimile Signatures. The signature of any officer authorized by the Corporation to sign any bonds, guarantees, undertakings, recognizances, stipulations, powers of attorney or revocations of any powers of attorney and policies of insurance issued by the Corporation may be printed, facsimile, lithographed or otherwise produced. In addition, if and as authorized by the Board of Directors, dividend warrants or checks, or other numerous instruments similar to one another in form, may be signed by the facsimile signature or signatures, lithographed or otherwise produced, of such officer or officers of the Corporation as from time to time may be authorized to sign such instruments on behalf of the Corporation. The Corporation may continue to use for the purposes herein stated the facsimile signature of any person or persons who shall have been such officer or officers of the Corporation, notwithstanding the fact that he may have ceased to be such at the time when such instruments shall be issued.

IN WITNESS WHEREOF, United States Fire Insurance Company has caused these presents to be signed and attested by its appropriate officer and its corporate seal hereunto affixed this 10th day of March, 2016.

UNITED STATES FIRE INSURANCE COMPANY



A.R.S.

Anthony R. Slimowicz, Senior Vice President

State of New Jersey }
County of Morris }

On this 10th day of March 2016, before me, a Notary public of the State of New Jersey, came the above named officer of United States Fire Insurance Company, to me personally known to be the individual and officer described herein, and acknowledged that he executed the foregoing instrument and affixed the seal of United States Fire Insurance Company thereto by the authority of his office.

**SONIA SCALA
NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPIRES 3/25/2019**

Sonia Scala

(Notary Public)

Sonia Scala

I, the undersigned officer of United States Fire Insurance Company, a Delaware corporation, do hereby certify that the original Power of Attorney of which the foregoing is a full, true and correct copy is still in force and effect and has not been revoked.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of United States Fire Insurance Company on the 29 day of Jan 2018

UNITED STATES FIRE INSURANCE COMPANY



A. Wright

Al Wright, Senior Vice President

SECTION 00420

INFORMATION REQUIRED FROM BIDDERS

GENERAL INFORMATION

The Bidder shall furnish the following information. Failure to comply with this requirement may cause its rejection. Additional sheets shall be attached as required.

1. Contractor's Name/Address: _____
Infinity Roofing & Sheet Metal Inc
1150 SW 10th Ave, Suite 201W, Pompano Beach, FL 33069
2. Contractor's Telephone Number: 954-917-7107
and e-mail address: cmarin@infinityrfg.com
3. Contractor's License (attach copy): CCC057467
Primary Classification: Roofing
Broward County License Number (attach copy): CCC057467
4. Number of years as a Contractor in construction work of the type involved in this Contract: Eighteen (18)
5. List the names and titles of all officers of Contractor's firm:
John B. Mitala, President
Hector J. Mendez, Vice President
Javier Martinez, Vice President II
6. Name of person who inspected site or proposed work for your firm:
Name: Camilo Marin
Date of Inspection: January 11, 2018
7. What is the last project of this nature you have completed?

Holy Family Church

St. Stephen's Catholic Church

8. Have you ever failed to complete work awarded to you; if so, where and why?
No.

9. Name three individuals or corporations for which you have performed work and to which you refer:

ZVI Construction

Cushman & Wakefield

Archdiocese of Miami

Cornfeld Group

10. List the following information concerning all contracts on hand as of the date of submission of this proposal (in case of co-venture, list the information for all coventures).

Name of Project	City	Total Contract Value	Contracted Date of Completion	% Completion to Date
La Salle School	Miami	\$151,445.00		0%
Our Lady of the Lakes	Hialeah	\$158,533.00		0%
Publix	Manalapan	\$ 298,470.00		10%
Vista Color	Miami	\$ 520,509.00		1%

(Continue list on inset sheet, if necessary)

11. What equipment do you own that is available for the work?

Infinity Roofing & Sheet Metal Inc owns all equipment necessary to complete any roofing project such as foam adhesive machine, safety equipment, hand tools, torches, propane tanks, and any other equipment or machinery required to perform the scope of work.

12. What equipment will you purchase for the proposed work?

None.

NOTE:

If requested by CITY, the Bidder shall furnish a notarized financial statement, references and other information, sufficiently comprehensive to permit an appraisal of its current financial condition.

LIST OF SUBCONTRACTORS

The Bidder shall list below the name and address of each Subcontractor who will perform work under this Contract in excess of one-half percent of the total bid price, and shall also list the portion of the work which will be done by such Subcontractor. After the opening of Proposals, changes or substitutions will be allowed with written approval of the City of Hollywood. Subcontractors must be properly licensed and hold a valid Hollywood Certificate of Competency.

	Work to be Performed	Subcontractor's Name / Address
1.	Replacement of exhaust fans, disconnection and reconnection of existing electrical pipe and lights	<u>Sun State Mechanical</u> 265 N.E. 171st Terrace North Miami Beach, FL 33162
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

NOTE: Attach additional sheets if required.

- END OF SECTION -



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

12/12/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER

Frank H. Furman, Inc.
1314 East Atlantic Blvd.
P. O. Box 1927
Pompano Beach FL 33061

CONTACT NAME: Sandi Harrison

PHONE (A/C, No, Ext): (954) 943-5050

FAX (A/C, No): (954) 942-6310

E-MAIL ADDRESS: sandi@furmaninsurance.com

INSURER(S) AFFORDING COVERAGE

NAIC #

INSURER A: Indian Harbor Insurance Co

36940

INSURER B: National Fire Ins Of Hartford

20478

INSURER C: American Guarantee & Liability Ins

26247

INSURER D: Bridgefield Employers Ins Co

10701

INSURER E:

INSURER F:

INSURED

Infinity Roofing And Sheet Metal Inc
1150 S W 10th Ave, Suite #201W

Pompano Beach

FL 33069-1326

COVERAGES

CERTIFICATE NUMBER: Jan 2018 x prof/poll

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR ☒ \$10,000 Ded Per Occ ☐ BI & PD Combined GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PROJECT ☐ LOC ☒ OTHER: Contractual Included	X	BSG300036503	5/25/2017	5/25/2018	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 50,000 MED EXP (Any one person) \$ Excluded PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 Employee Benefits \$ 1,000,000
B	☒ AUTOMOBILE LIABILITY ☒ ANY AUTO ALL OWNED AUTOS ☐ SCHEDULED AUTOS HIRED AUTOS ☒ NON-OWNED AUTOS		2083041073	5/25/2017	5/25/2018	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ PIP \$ 10,000
C	☒ UMBRELLA LIAB ☒ OCCUR EXCESS LIAB ☐ CLAIMS-MADE DED ☒ RETENTION \$ 0		AUC967203408 Follows form over AL, GL, and EL	5/25/2017	5/25/2018	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N N/A	0830-38636	1/1/2018	1/1/2019	☒ PER STATUTE ☐ OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

City of Hollywood is included as Additional Insured for General Liability as required by written contract in accordance with policy terms and conditions.

CERTIFICATE HOLDER**CANCELLATION**

City of Hollywood
2600 Hollywood Blvd.
Hollywood, FL 33020

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Dirk DeJong/TP



COMPASS SALES GROUP

January 30, 2018

Project: City of Hollywood - Meter Shop Project

To Whom It May Concern:

Carlisle Syntec Systems will provide, in coordination with the roofing contractor, 3 project site visits per week.

The project conditions have been observed. Carlisle Syntec Systems will issue a warranty upon final inspection and acceptance of the installation.

Regards,

Bernie Abrami
Compass Sales Group
Representing Carlisle Syntec Systems

Manufacturer's Representative for

125 S. Swoope Ave, Suite 201B,
Maitland, FL 32751
434-534-2683



CARLISLE

GOLDEN SEAL Total Roofing System WARRANTY

with limited coverage for accidental punctures

SERIAL NO.

DATE OF ISSUE:

BUILDING OWNER:

NAME OF BUILDING:

BUILDING ADDRESS:

DATE OF COMPLETION OF THE CARLISLE TOTAL ROOFING SYSTEM:

DATE OF ACCEPTANCE BY CARLISLE:

Carlisle Roofing Systems, Inc., (Carlisle) warrants to the Building Owner (OWNER) of the above described building, that; subject to the terms, conditions, and limitations stated in this warranty, Carlisle will repair any leak in the Carlisle Golden Seal™ Total Roofing System (CARLISLE TOTAL ROOFING SYSTEM) installed by a Carlisle Authorized Roofing applicator for a period of 20 years commencing with the date of Carlisle's acceptance of the Carlisle Total Roofing System installation. However, in no event shall Carlisle's obligations extend beyond years subsequent to the date of substantial completion of the Carlisle Total Roofing System. See below for exact date of warranty expiration.

The Carlisle Total Roofing System is defined as the following Carlisle brand materials: Membrane, Flashings, Adhesives and Sealants, Insulation, Cover Boards, Fasteners, Fastener Plates, Fastening Bars, Metal Work, insulation adhesives and any other Carlisle brand products utilized in this installation.

TERMS, CONDITIONS, LIMITATIONS

- Owner shall provide Carlisle with written notice via letter, fax, or email within thirty (30) days of the discovery of any leak in the Carlisle Total Roofing System. Owner should send written notice of a leak to Carlisle's Warranty Services Department at the address set forth at the bottom of this warranty. By so notifying Carlisle, the Owner authorizes Carlisle or its designee to investigate the cause of the leak. Should the investigation reveal the cause of the leak to be outside the scope of this Warranty, investigation and repair costs for this service shall be paid by the Owner.
- If, upon inspection, Carlisle determines that the leak is caused by a defect in the Carlisle Total Roofing System's materials, or workmanship of the Carlisle Authorized Roofing Applicator in installing the same, Owner's remedies and Carlisle's liability shall be limited to Carlisle's repair of the leak.
- This warranty shall not be applicable if, upon Carlisle's inspection, Carlisle determines that any of the following has occurred:
 - The Carlisle Total Roofing System is damaged by natural disasters, including, but not limited to, lightning, fire, insect infestations, earthquake, tornado, hail, hurricanes, and winds of (3 second) peak gust speeds of mph or higher measured at 10 meters above ground; or
 - Loss of integrity of the building envelope and, or structure including, but not limited to partial or complete loss of roof decking, wall siding, windows, doors or other envelope components or from roof damage by wind-blown objects; or
 - The Carlisle Total Roofing System is damaged by any intentional or negligent acts, accidents, misuse, abuse, vandalism, civil disobedience, or the like; however, this warranty does provide limited coverage to provide for the repair of any leaks in the Carlisle Total Roofing System caused by accidental punctures (but not including punctures caused by snow removal or other trades during new construction). The extent of this limited warranty to repair punctures shall not exceed man hours per year during the life of the warranty.
 - Deterioration or failure of building components, including, but not limited to, the roof substrate, walls, mortar, HVAC units, non-Carlisle brand metal work, etc., occurs and causes a leak, or otherwise damages the Carlisle Total Roofing System; or
 - Acids, oils, harmful chemicals and the like come in contact with the Carlisle Total Roofing System and cause a leak, or otherwise damage the Carlisle Total Roofing System.
 - The Carlisle Total Roofing System encounters leaks or is otherwise damaged by condensation resulting from any condition within the building that may generate moisture.
- This Warranty shall be null and void if any of the following shall occur:
 - If, after installation of the Carlisle Total Roofing System by a Carlisle Authorized Roofing Applicator there are any alterations or repairs made on or through the roof or objects such as, but not limited to, structures, fixtures, solar panels, wind turbines, roof gardens or utilities are placed upon or attached to the roof without first obtaining written authorization from Carlisle; or
 - Failure by the Owner to use reasonable care in maintaining the roof, said maintenance to include, but not be limited to, those items listed on Carlisle's Care & Maintenance Information sheet which accompanies this Warranty.
- Only Carlisle brand insulation products are covered by this warranty. Carlisle specifically disclaims liability, under any theory of law, for damages sustained by or caused by non-Carlisle brand insulation products.
- During the term of this Warranty, Carlisle shall have free access to the roof during regular business hours.
- Carlisle shall have no obligation under this Warranty while any bills for installation, supplies, service, and warranty charges have not been paid in full to the Carlisle Authorized Roofing Applicator, Carlisle, or material suppliers.
- Carlisle's failure at any time to enforce any of the terms or conditions stated herein shall not be construed to be a waiver of such provision.
- Carlisle shall not be responsible for the cleanliness or discoloration of the Carlisle Total Roofing System caused by environmental conditions including, but not limited to, dirt, pollutants, or biological agents.
- Carlisle shall have no liability under any theory of law for any claims, repairs, restoration, or other damages including, but not limited to, consequential or incidental damages relating, directly or indirectly, to the presence of any irritants, contaminants, vapors, fumes, molds, fungi, bacteria, spores, mycotoxins, or the like in the building or in the air, land, or water serving the building.
- This warranty shall be transferable upon a change in ownership of the building when the owner has completed certain procedures including a transfer fee and an inspection of the Roofing System by a Carlisle representative.

CARLISLE DOES NOT WARRANT PRODUCTS UTILIZED IN THIS INSTALLATION WHICH IT HAS NOT FURNISHED; AND SPECIFICALLY DISCLAIMS LIABILITY, UNDER ANY THEORY OF LAW, ARISING OUT OF THE INSTALLATION AND PERFORMANCE OF, OR DAMAGES SUSTAINED BY OR CAUSED BY, PRODUCTS NOT FURNISHED BY CARLISLE OR THE PRIOR EXISTING ROOFING MATERIAL OVER WHICH THE CARLISLE TOTAL ROOFING SYSTEM HAS BEEN INSTALLED.

THE REMEDIES STATED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES FOR FAILURE OF THE CARLISLE TOTAL ROOFING SYSTEM OR ITS COMPONENTS. THERE ARE NO WARRANTIES EITHER EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY, WHICH EXTEND BEYOND THE FACE HEREOF. CARLISLE SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR DAMAGE TO THE BUILDING OR ITS CONTENTS UNDER ANY THEORY OF LAW.

BY: Robert H. McNeill

AUTHORIZED SIGNATURE

TITLE: Director, Technical and Warranty Services

This Warranty Expires:

P.O. Box 7000 Carlisle, PA 17013 Phone: 800.233.0551 Fax: 717.245.7121 www.carlisesyntec.com

WA-F0010 (01/15)



January 28, 2015

ISO 9001 registration provides an organization the opportunity and discipline to document and follow a systematic manufacturing and audit process. Although Carlisle Construction Materials does not currently have an ISO 9001 registration, many of the requirements for this system are met through listings with various reputable third party certifying bodies and stringent internal standards. Our products are listed with FM and UL with follow up services. In addition we are also certified with SECO, Intron and BBA with routine audits required to maintain certification. These audits validate product characteristics and the plant process for compliance with published codes as well as require us to have traceability and process control for all materials manufactured in our plants.

Additionally, the focus of Carlisle's Quality Management System is the Carlisle Operating System, COS. The COS approach is based on Lean 6-Sigma methods and utilizes Kaizen as part of the continual improvement journey. GEMBA walks and huddles identify and resolve challenges and needs on a daily basis in real time. The GEMBA walks are focused around our SQDC metric boards (Safety, Quality, Delivery, and Cost). The respective teams review the boards throughout our plants to identify urgent and long term issues preventing us from meeting customer needs. Issues are tracked via a corrective action system. Each plant is audited by our Quality Services team.

For Carlisle Construction Materials, the Carlisle Operating System is the natural evolution from a reactive inspection based QMS to a proactive continual improvement system. We welcome customers to our facilities and are confident our systems meet requirements of ISO 9001.

We are confident that the quality assurance systems currently in place ensure that quality products and roofing systems are supplied to our customers.

Carlisle Quality Services Mission:

The Quality Services Team will lead Carlisle CCM to provide Best in Class Performance to our Customers. The team will promote the vision through robust processes and methods. Quality Services team will provide training and support to insure accurate data, precise analysis, optimal processes and continual reductions in variation. We will insure the voice of the customer, the voice of the process, and the voice of supply are aligned.

Carlisle QMS Critical Processes

Many of our systems meet the requirements of ISO 9000. The following is an overview of what is typical for the Carlisle QMS:

Incoming raw materials are based on our Purchasing Specifications and require vendor-supplied Certificate of Analysis with each supplied lot. The Purchasing Specifications are typically generated and maintained by the Research and Development group in Carlisle, PA.

Depending on the final product a wide variety of in-process tests are performed to verify physical properties and performance characteristics. In addition, operators are continuously monitoring the product to insure not only the above characteristics but also a number of aesthetic properties including the general product and package appearance. Our finished products also include a lot-tracking feature so that products in the field can be traced back to the manufacturing operation in order to tie back to the date and time of manufacture and therefore the above-mentioned test results.

Destructive testing and final product tests on the various physical properties are also performed in the labs of the manufacturing facilities. These are independently validated in the Research and Development Laboratory. Depending on the finished product these tests will include gauge over scrim, ply-to-ply adhesion, breaking strength, tear strength, color, compressive strength, density, dimensional data, heat aging, etc. Most of the above tests are performed using ASTM standards as well as a number of internally developed methods.

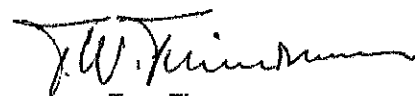
All of the lab and test equipment is on a calibration program to insure that the data is true and accurate. Providers of calibration services are accredited under ISO/IEC 17025 or ANSI Z540.3.

New product development follows our review process. The process starts with a core steering committee review which determines the complexity of the new product design and then will direct into the phase gate review process.

It is the daily performance and engagement of our employees that makes the difference in the quality of Carlisle roofing systems.



Tim Wickard
Director of Quality Services



Tom Timmerman
VP of Manufacturing

APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE

Table	Deck	Application	Type	Description	Page
1A	Wood	New, Reroof (Tear-Off), Recover	C	Mechanically Attached Insulation, Bonded Roof Cover	4
1B	Wood	New, Reroof (Tear-Off), Recover	D-1	Insulated, Mechanically Attached Roof Cover	4
1C	Wood	New, Reroof (Tear-Off), Recover	D-3	Non-Insulated, Mechanically Attached Base Sheet, Bonded Roof Cover	5
1D	Wood	New, Reroof (Tear-Off), Recover	E-1	Non-Insulated, Mechanically Attached Roof Cover	5
1E	Wood	New, Reroof (Tear-Off), Recover	E-2	Non-Insulated, Mechanically Attached Base Sheet, Bonded Roof Cover	5
2A	Steel or Conc.	New, Reroof (Tear-Off), Recover	B-1	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	6-7
2B	Steel or Conc.	New, Reroof (Tear-Off), Recover	B-1	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Base Ply, Bonded Roof Cover	8
2C	Steel	New, Reroof (Tear-Off), Recover	B-2	Mech. Attached Thermal Barrier, Bonded Vapor Barrier, Bonded Insulation, Bonded Roof Cover	9-10
2D	Steel or Conc.	New, Reroof (Tear-Off), Recover	C-1	Mechanically Attached Insulation, Bonded Roof Cover	11-15
2E	Steel or Conc.	New, Reroof (Tear-Off), Recover	C-1	Mechanically Attached Insulation, Bonded Base Ply, Bonded Roof Cover	16
2F	Steel	New, Reroof (Tear-Off), Recover	C-2	Mechanically Attached Insulation, Plate-Bonded Roof Cover	17-18
2G	Steel or Conc.	New, Reroof (Tear-Off), Recover	D-1	Insulated, Mechanically Attached Roof Cover (Stress Plates)	19-22
2H	Steel or Conc.	New, Reroof (Tear-Off), Recover	D-2	Insulated, Mechanically Attached Roof Cover (RUSS Strips)	23
3A	Concrete	New, Reroof (Tear-Off)	A-1A	Bonded Insulation, Bonded Roof Cover	24-28
3B	Concrete	New, Reroof (Tear-Off)	A-1A	Bonded Insulation, Bonded Base Ply, Bonded Roof Cover	29
3B	Concrete	New, Reroof (Tear-Off), Recover	C-2	Mechanically Attached Insulation, Plate-Bonded Roof Cover	30
3C	Concrete	New, Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	31
4A	LWIC	New, Reroof (Tear-Off)	A-1A	Bonded Insulation, Bonded Roof Cover	32
4B	LWIC	New, Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	32
4C	LWIC over Steel	New, Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	33-35
4D	LWIC over Conc.	New, Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	36-37
5A	CWF	New, Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	38
6A	Gypsum	Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	39
6B	Gypsum	Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	39
7A	Various	Recover	A-1	Bonded Insulation, Bonded Roof Cover	40-41
7B	Various	Recover	A-1	Bonded Insulation, Bonded Base Ply, Bonded Roof Cover	42
7C	Steel	Recover	C-2	Mechanically Attached Insulation, Plate-Bonded Roof Cover	43
7D	Steel	Recover	D-1	Insulated, Mechanically Attached Roof Cover	44
7E	Steel	Recover	D-2	Insulated, Mechanically Attached Roof Cover (RUSS Strips)	45
7F	Various	Recover	E-1	Non-Insulated, Mechanically Attached Roof Cover	46
7G	Various	Recover	F-1	Non-Insulated, Bonded Roof Cover	47
7H	Various	Recover	F-2	New LWC over Existing Roof, Bonded Roof Cover	48

The following notes apply to the systems outlined herein:

1. The evaluation herein pertains to above-deck roof components; deck-attachment details and pertain to 'as-tested' conditions under TAS 114, Appendix J. Roof decks shall be in accordance with FBC (HVHZ) requirements to the satisfaction of the AHJ.
2. Unless otherwise noted, fasteners and stress plates for insulation attachment shall be as follows. Fasteners shall be of sufficient length for the following engagements:
 - Wood Deck: Sure-Seal HP Fastener with Sure-Seal Insulation Fastening Plate). Minimum 1-inch wood penetration.
 - Steel Deck: Sure-Seal HP Fastener with Sure-Seal Insulation Fastening Plate). Minimum 0.75-inch steel penetration, engage the top flange of the steel deck.
 - Concrete Deck: Sure-Seal HD 14-10 Concrete Fastener, Carlisle CD-10 or HP Concrete Spike (1/4) with Sure-Seal Insulation Plate (aka, Carlisle's Insulation Fastening Plate). Minimum 1.25-inch embedment. Fasteners installed with a pilot hole in accordance with the fastener manufacturer's published installation instructions.
3. Unless otherwise noted, insulation may be any one layer or combination of polyisocyanurate, polystyrene, fiberboard, perlite and/or gypsum-based insulation board that meets the QA requirements of F.A.C. Rule 61G20-3 and is documented as meeting FBC 1516 and, for foam plastic, FBC Chapter 26, when installed with the roof cover.
4. If mechanical attachment to the structural deck through lightweight insulating concrete is proposed, field withdrawal resistance testing shall be performed to confirm equivalent or determine enhanced fastening patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117 and/or RAS 137. Calculations shall be prepared, signed and sealed by a qualified design professional.
5. Preliminary insulation attachment for System Type D = Minimum four fasteners per 4 x 8 ft board or minimum two fasteners per 4 x 4 ft board.
6. Unless otherwise noted, insulation adhesive application rates are as follows. Ribbon or bead width is at the time of application; the ribbons/beads shall expand as noted in the manufacturer's published instructions:
 - Hot asphalt: Full coverage at 25 lbs/square.
 - Carlisle FAST 100, FAST 100 LV (full): Full coverage at 1 gal./square.
 - Carlisle FAST 100, FAST 100 LV (ribbon): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c.
 - Carlisle Flexible FAST (full): Full coverage at 1 gal./square.
 - Carlisle Flexible FAST (ribbon): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c.
 - Carlisle FAST Dual-Cartridge (FAST D-C): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c.
 - Carlisle FAST Bag in a Box Adhesive (BIAB): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c. using OMG Bag-In-Box PaceCart 2
 - OlyBond 500 (OB500): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c. using PaceCart or SpotShot

Note: OlyBond 400 Green may be used where OlyBond 500 is referenced.

 - Note: When multiple layers(s) of insulation and/or coverboard are installed in ribbon-applied adhesive, adhesive ribbons shall be staggered from layer-to-layer a distance of one-half the ribbon spacing.
 - Note: The maximum edge distance from the adhesive ribbon to the edge of the insulation board shall be not less than one-half the specified ribbons spacing.
7. Unless otherwise noted, all insulations are flat stock or taper board of the minimum thickness noted. Tapered polyisocyanurate at the following thickness limitations may be substituted with the following Maximum Design Pressure (MDP) limitations. In no case shall these values be used to 'increase' the MDP listings in the tables; rather if MDP listing below meets or exceeds that listed for a particular system in the tables, then the thinner board listed below may be used as a drop-in for the equivalent thicker material listed in the table.

➤ FAST 100, FAST 100 LV or Flexible FAST:	MDP	-157.5 psf	(Min. 0.5-inch thick)
➤ OlyBond 500 (OB500):	MDP	-187.5 psf	(Min. 0.5-inch thick)
8. Bonded polyisocyanurate insulation boards shall be maximum 4 x 4 ft.
9. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased, as calculated in compliance with Roofing Application Standard RAS 117 and/or RAS 137 by a qualified design professional. ***This extrapolation is not permitted for systems marked with an asterisk*.**
10. For assemblies marked with an asterisk*, the maximum design pressure (MDP) limitation listed shall be applicable to all roof pressure zones (i.e., field, perimeters and corners). Neither rational analysis, nor extrapolation is permitted for enhanced attachment at enhanced pressure zones (i.e., perimeters, corners and extended corners).
11. Fastener spacing for mechanical attachment of anchor/base sheet or membrane is based on a minimum fastener resistance value in conjunction with the maximum design pressure (MDP) listed for a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing – prepared, signed and sealed by a qualified design professional – may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standard TAS 105 and calculations in compliance with Roofing Application Standard RAS 117 or RAS 137.
12. For bonded insulation or membrane over existing substrates in a recover installation, the existing roof system shall be capable of resisting project design pressures on its own merit to the satisfaction of the AHJ, as documented through field uplift testing in accordance with TAS 124.
13. For System Type D, steel deck applications, the roof membrane shall be run with its length perpendicular to the steel deck flutes.

14. For recover installations, the existing roof shall be examined in accordance with FBC 1521. For Recover Applications using System Type D, the insulation is optional. Alternatively, min. 0.5-inch HP Recovery Board, SecurShield HD or H-Shield HD or min. 0.25-inch to 0.625-inch Dens Deck, Dens Deck Prime, SECUROCK Gypsum-Fiber Roof Board or SECUROCK Glass-Mat Roof Board or min. 3/8-inch Insulfoam R-Tech EPS or Fan-Fold may be used as a separator board, preliminarily attached prior to roof cover installation.

15. For adhered membrane systems, side laps shall be minimum 2-inch wide sealed with min. 1.5-inch heat weld. Unless otherwise noted, membrane adhesive application rates are as follows:

Membrane	Adhesive	Method	Rate
Sure-Weld, Sure-Weld HS	Sure-Weld Bonding Adhesive	Contact (both sides)	60 ft ² /gal
Sure-Weld, Sure-Weld HS	Aqua Base 120 Bonding Adhesive	Contact (both sides)	120 ft ² /gal
Sure-Weld, Sure-Weld HS	Low VOC Bonding Adhesive	Contact (both sides)	60 ft ² /gal
Sure-Weld, Sure-Weld HS	Sure-Seal 90-8-30A Bonding Adhesive	Contact (both sides)	60 ft ² /gal
Sure-Weld FleeceBACK	Aqua Base 120 Bonding Adhesive	Wet lay (substrate)	120 ft ² /gal
Sure-Weld FleeceBACK	HydroBond Water-Based Adhesive	Wet lay (substrate)	100 to 133 ft ² /gal
Sure-Weld FleeceBACK	FAST 100, FAST 100LV, Flexible FAST	Wet lay (substrate)	Full coverage at 100 ft ² /gal or Ribbons spaced as noted herein, spread to 2-3 inch, roof cover set and rolled with 50 lb roller.
Sure-Weld AFX	Carlisle Cold Applied Adhesive (CCAA)	Wet lay (substrate)	1.5 gal/square
Sure-Weld AFX	Hot asphalt	Wet lay (substrate)	25 lbs/square

16. For membrane systems attached using TPO 10-inch Pressure-Sensitive RUSS, the underside of the membrane which comes in contact with the tape shall be primed with TPO Primer. The membrane shall be secured by placing the primed portion onto the tape portion of the Sure-Weld TPO 10-inch Pressure-Sensitive RUSS and roll with a steel hand roller to ensure contact.

17. For adhered membrane systems, unless otherwise noted:

- > Reference to "Sure-Weld" membrane below also includes "Sure-Weld EXTRA" and "Sure-Weld HS";
- > Reference to "Sure-Weld FleeceBACK" includes 100, 115 and 135;
- > Reference to "Sure-Weld AFX" includes AFX 120, AFX 135 and AFX 155;

18. Vapor barrier options for use over structural concrete deck followed by adhesive-applied insulation carry the following Maximum Design Pressure (MDP) limitations. The lesser of the MDP listings below vs. those in Table 3A-1 or 3A-2 applies.

VAPOR BARRIER OPTIONS: STRUCTURAL CONCRETE DECK; FOLLOWED BY ADHESIVE-APPLIED INSULATION PER TABLE 3A-1 OR 3A-2:				
Option #	Primer	Vapor Barrier		MDP (psf)
		Type	Application	
1	702 Primer	VapAir Seal 725TR	Self-adhering	FAST 100 LV, full-coverage at 1 gal/square.
2	702 Primer	VapAir Seal 725TR	Self-adhering	FAST 100 LV, FAST Bag in a Box (BIAB) or FAST Dual Cartridge, ribbons 12-inch o.c.
3	702 LV Primer	VapAir Seal 725TR	Self-adhering	FAST 100 LV, full-coverage at 1 gal/square.
4	702 LV Primer	VapAir Seal 725TR	Self-adhering	FAST 100 LV, FAST Bag in a Box (BIAB) or FAST Dual Cartridge, ribbons 12-inch o.c.
5	CAV-GRIP Primer	VapAir Seal 725TR	Self-adhering	FAST 100 LV, full-coverage at 1 gal/square.
6	CAV-GRIP Primer	VapAir Seal 725TR	Self-adhering	FAST 100 LV, FAST Bag in a Box (BIAB) or FAST Dual Cartridge, ribbons 12-inch o.c.
7	ASTM D41	SureMB 90TG Base	Torch-applied	FAST 100 LV or FAST Dual Cartridge, ribbons 12-inch o.c.
8	ASTM D41	SureMB 90 Base	Hot-asphalt	Hot asphalt at 25 lbs/square
9	ASTM D41	SureMB 90TG Base	Torch-applied	Hot asphalt at 25 lbs/square

19. "MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to FBC (HVHZ) 1620 and RAS 128 for determination of design wind loads.



TABLE 7A: RECOVER APPLICATIONS
SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER

System No.	Substrate (See Note 12)	Base Insulation Layer		Top Insulation Layer		Roof Cover (See Notes 15 & 17)		MDP (psf)
		Type	Attach	Type	Attach	Type	Application	
R-12	Existing asphaltic BUR or mineral surface cap sheet	Min. 1.5-inch SecurShield HD Composite, H-Shield HD Composite	FAST 100, FAST 100 LV	None	N/A	Sure-Weld FleeceBACK	FAST 100 LV, full coverage	-232.5*
R-13	Existing asphaltic BUR or mineral surface cap sheet	Min. 19/32-inch APA rated plywood, 0.25-inch Dens Deck or thick Dens Deck Prime	FAST 100, FAST 100 LV (full)	(Optional) One or more layers min. 19/32-inch APA rated plywood, 0.25-inch Dens Deck or thick Dens Deck Prime	FAST 100, FAST 100 LV (full)	Sure-Weld FleeceBACK	FAST 100, FAST 100 LV, Flexible FAST, full coverage.	-232.5*
R-14	Existing asphaltic BUR or mineral surface cap sheet	Polyiso HP-H, HP-N or HP-W, ENRGY 3, H-Shield, SecurShield, H-Shield CG, or AC Foam II <u>1.5" thick</u>	FAST 100, FAST 100 LV (full)	Min. 19/32-inch APA rated plywood, 0.25-inch Dens Deck or thick Dens Deck Prime	FAST 100, FAST 100 LV (full)	Sure-Weld FleeceBACK	FAST 100, FAST 100 LV, Flexible FAST, full coverage.	-232.5*
R-15	Existing asphaltic BUR or mineral surface cap sheet	Min. 1.0-inch Polyiso HP-H, H-Shield, SecurShield, H-Shield CG	FAST 100, FAST 100 LV (full)	(Optional) Additional layers of base insulation	FAST 100, FAST 100 LV (full)	Sure-Weld FleeceBACK	FAST 100, FAST 100 LV, Flexible FAST (full)	-300.0*
R-16	Existing gravel-surfaced asphaltic BUR	Min. 1-inch Insulfoam SP	FAST 100 LV (full)	None	N/A	Sure-Weld FleeceBACK	FAST 100 LV (full)	-395.0*

CARLISLE'S **FAST** ADHESIVE

Product Data



FAST Adhesive is spray-applied to the existing substrate, then insulation boards are set into the adhesive after it develops string/body.

Overview

Carlisle's FleeceBACK™ Fully Adhered Roofing Systems feature the use of FAST Adhesive, a low-rise, two-component, insulating polyurethane. FAST Adhesive is sprayed or extruded using state-of-the-art proportioning pumps to deliver the two components to a mixing spray gun for distribution onto the substrate. Parts A & B are mixed in the gun and applied to the roof. A catalytic reaction takes place, causing the FAST Adhesive to expand and foam. FleeceBACK membrane is then laid into the foamed adhesive after developing string/body and rolled with a weighted roller to ensure the fibers of the fleece are embedded into the adhesive. Within 15 minutes, FAST Adhesive cures to form a tenacious bond between the substrate and the FleeceBACK membrane. FAST Adhesive is also used to secure insulation boards to the deck for a totally non-penetrating system application.

Features and Benefits

• Energy Efficient and Environmentally Sound

Each layer of FAST Adhesive expands to 1/16" - to 1/8"-thick and provides an additional R-value of 0.20 to 0.50 per layer. When FAST Adhesive is specified for insulation attachment in place of mechanical fasteners, the 3-8% loss in R-value can be eliminated. The NRCA estimates that up to 10% of R-value can be lost due to joints in the insulation. The expanding nature of FAST adhesive helps to seal insulation joints. Water is used as the blowing agent in FAST Adhesive, making it VOC compliant and not labeled as a flammable product.

• Superior Wind Uplift

Superior wind-uplift resistance is delivered with code-rated assemblies ranging from FM 1-90 up to FM 1-990, Dade County, UL 1897 and UL 580 approvals. As a result of the extraordinary wind uplift performance, the FleeceBACK/FAST Adhesive System offers an industry leading 80-mph standard wind-speed warranty that can be upgraded to 120 mph with design enhancements.

• Expedient Installations without Interruption

Due to the low noise and low odor associated with the system, the FleeceBACK/FAST assembly is an excellent choice for reroofing occupied buildings, as there is minimal disruption. Because of these benefits, schools, universities and hospitals are some of the biggest users of the FleeceBACK/FAST assembly. The speed of application with FAST Adhesive affords project completion in a timely manner.

• System Warranties

A full range of system warranties are available ranging from 10-, 15-, 20- and 30-year terms, are No Dollar Limit, are transferable and are not voided for ponded water. In summary, the combination of 45 years of single-ply experience, fleece backing reinforcement and Carlisle's insulating adhesive technology results in an extremely tough and durable roofing composite system with superior wind-uplift performance that can be applied with minimal business disruption and without penetrating the deck.

Application*

1. The surface to which adhesive is to be applied shall be dry and free of fins, protrusions, sharp edges, loose and foreign materials, oil and grease. Depressions greater than 1/4" (6 mm) shall be filled with FAST Adhesive or other approved patching material. All sharp projections shall be removed. **Previously unexposed asphalt must be primed with CAV-GRIP™ or 702 Primer for extrusion application.**
2. Seal gaps between the wall/penetration and concrete deck with Carlisle 725TR or other suitable material to avoid condensation issues and possible pressure from air infiltration.
3. For reroofing sprayed-in-place (SPF) urethane roofs, all wet areas must be removed. The surface must then be scarfed or perforated, depending on the coating, before applying FAST Adhesive.
4. Apply FAST Adhesive when the substrate and ambient temperature are 25°F (-4°C) or above when spraying with heated equipment. Set rig pressure between 40-60 psi for extrusion and 80-100 psi for spraying.
5. Set pre-heater and hose temperature to 120°F (49°C). Temperature settings will vary with conditions.

Investing in Roofing Solutions for Over 45 Years

800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlisle-syntec.com

CARLISLE
Carlisle Syntec

CARLISLE'S **FAST**TM ADHESIVE

Product Data

Fleeceback Installation

- Unroll FleeceBACK sheet and position. Fold sheets in half width-wise.
- Apply FAST Adhesive to the substrate achieving a light-yellow-colored foam.
 - For fully adhered applications, spray adhesive to obtain full coverage (approx. 1/8" to 1/4" thick after foaming).
 - For extruded applications, apply adhesive at 4", 6" or 12" on center with a **minimum 1/2" wet bead**.
- Allow adhesive to rise and develop string/body (approx. 1.5-2 minutes), then place FleeceBACK membrane into FAST Adhesive. String time will vary based on environmental conditions like temperature and humidity.
- Roll membrane with a roller (not to exceed 150 lbs.) to ensure fleece embedment. If adhesive contaminates the splice area, immediately remove with weathered membrane cleaner.

Insulation Attachment

- Apply FAST Adhesive to the substrate achieving a light-yellow-colored foam.
 - For fully adhered applications, spray adhesive to obtain full coverage (approx. 1/8" to 1/4" thick after foaming).
 - For extruded applications, apply adhesive at 4", 6" or 12" on center with a **minimum 1/2" wet bead**. For steel decks, extrusion of FAST must run parallel with and be on top of the steel deck flutes.

Bead Spacing parameters for 5-, 10-, or 15-year 55-mph warranties. (Contact Carlisle Project Review for bead spacing on higher mph warranties or 20 and 30 year warranty projects).

Building Height	Bead Spacing (Perimeter)	Bead Spacing (Field)
0' - 25'	6" o.c. (4' perimeter)	12" o.c.
25' - 50'	6" o.c. (8' perimeter)	12" o.c.
50' - 75'	6" o.c. (12' perimeter)	12" o.c.
75' - 100'	6" o.c. (16' perimeter)	12" o.c.
100' or greater: Contact Carlisle for bead spacing requirements		

- Factory Mutual bead spacing guidelines in the perimeter and corner may differ from the table above. Beads at 12" o.c. are not acceptable at perimeters or corners.
- Place insulation boards (maximum 4' x 4' insulation boards when FAST Adhesive is extruded at 12" o.c. or when boards exceed 4" thickness) into FAST Adhesive after allowing it to rise and develop string/body (approx. 1.5-2 min.). String time will vary based on environmental conditions like temperature and humidity. Do not allow the adhesive to over-cure prior to setting insulation boards.

- Designate one person to walk boards into place and then roll the boards between 5-7 minutes from the initial adhesive application. Boards may be temporarily weighted or relief-cut where necessary to keep the boards in constant contact with the adhesive until the adhesive cures.
 - Adding FAST Catalyst is recommended for insulation attachment to speed set-up time. Catalyst should be added according to the chart provided on the FAST Catalyst can.
 - At the beginning of the insulation attachment process and periodically throughout the day, check the adhesion of boards to ensure a tight bond is created and maximum contact is achieved.
- *REVIEW CURRENT CARLISLE SPECIFICATIONS AND DETAILS FOR APPLICATION REQUIREMENTS.

Precautions

- Review the application Material Safety Data Sheet for complete safety information prior to use.
- The foam produced is an organic material. It must be considered as combustible and may constitute a fire hazard. The foam adhesive must not be left exposed or unprotected. Shield from heat and sparks.
- Do not smoke during application.
- Use with adequate ventilation. Avoid breathing vapors. Wear a NIOSH- or MSHA-approved respirator for organic vapors with prefilters and solvent-resistant cartridges or supplied airline respirators while spraying. Proper safety training is essential for all persons involved in the installation process. If vapor is inhaled, remove to fresh air and administer oxygen if breathing is difficult. Consult a physician immediately.
- Avoid contact with eyes. Safety glasses or goggles are required.
- If FAST adhesive is splashed in eyes, immediately flush eyes with plenty of clean water for at least 15 minutes. Contact a physician immediately.
- Avoid contact with skin. Wear long-sleeved shirts and long pants. Wash hands thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water or corn oil. NOTE: Permeation-resistant gloves that meet ANSI/ISEA 105-2005 are required when handling the material or during application.
- Jobsite storage temperatures in excess of 90°F (32°C) may affect product shelf life. Should the components be stored at temperatures lower than 70°F (21°C), restore to room temperature prior to use. Do not allow FAST Adhesive to freeze (storage below 0°F (-18°C) for at least 3 days).

Investing in Roofing Solutions for Over 45 Years

800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlisle-syntec.com

CARLISLE
Carlisle Syntec

CARLISLE'S **FAST**TM ADHESIVE

Product Data

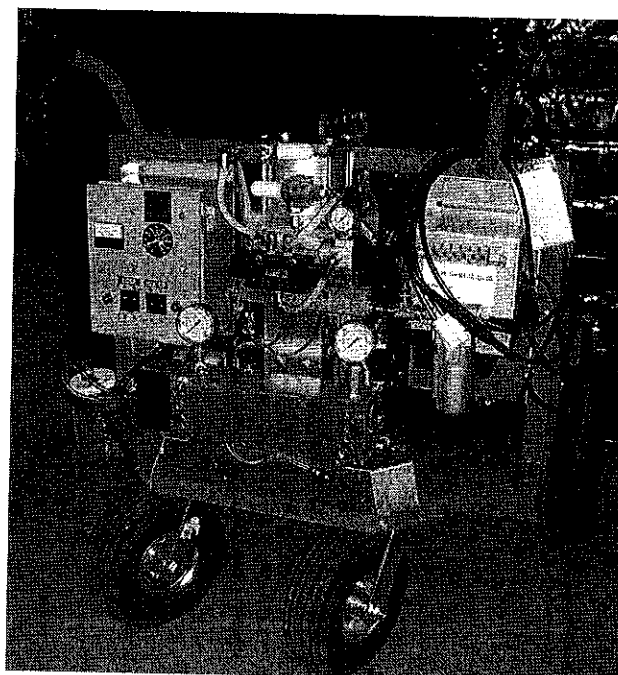
9. Use spray booths, windscreens and/or lower spray pressure with spatter tips when spraying in windy conditions.
10. Precautions must be taken to prevent FAST Adhesive vapors or overspray from entering buildings during application. All air -intake vents on roofs must be closed during application of FAST Adhesive.
11. Use desiccant dryers on Part A drums to avoid formation of crystals from exposure to moisture in the air.
12. KEEP OUT OF THE REACH OF CHILDREN.

Coverage Rate

(sq.ft. may vary due to jobsite conditions)

50-gallon sets	Spray	4" o.c.	6" o.c.	12" o.c.
FB to a smooth flat surface	10,000	9,000	12,500	17,500
Insulation to a smooth flat surface	9,000	8,500	11,250	15,750
Insulation to wood fiber decks	6,500	5,500	8,125	11,375
Insulation to gravel BUR	5,000	4,500	7,500	N/A

15-gallon sets	Spray	4" o.c.	6" o.c.	12" o.c.
FB to a smooth flat surface	3,000	2,700	3,750	5,250
Insulation to a smooth flat surface	2,700	2,500	3,375	4,725
Insulation to wood fiber decks	2,000	1,650	2,500	3,500
Insulation to gravel BUR	1,800	1,500	2,250	N/A



Heated Predator III Spray Rig's unique design allows for easy maneuverability on the job and output of 2 gallons/min.

FAST Adhesive Substrate Compatibility

Insulation/Underlayments		Roof Decks		Existing Roofing Materials	
- HP Polyiso	Yes	- Concrete	Yes	- Smooth BUR	Yes (5)
- HP Recovery Board	Yes	- Cellular Lt.Wt. Concrete	Yes	- Gravel BUR	Yes (6)
- Expanded Polystyrene (EPS)	Yes (1)	- NVS Lt.Wt. Concrete	Yes	- Mineral Cap Sheet	Yes
- Extruded Polystyrene	Yes (2)	- Gypsum	Yes	- Granular Modified-Bitumen	Yes
- New Sprayed Foam	Yes	- Cementitious Wood-Fiber	Yes	- Smooth Modified-Bitumen	Yes
- Scarified SPF	Yes	- Wood	Yes	- Coal Tar Pitch	Yes (7)
- DensDeck	Yes	- Painted Steel	Yes	- Aluminum Coated BUR	Yes (8)
- Securock®	Yes	- Galvanized Steel	Yes (3)	- Acrylic Coated SPF	Yes
- Oriented Strand Board	Yes	- Acoustical Steel	Yes (4)	- Silicone Coated SPF	No (9)
				- Aged EPDM or Hypalon	Yes (10)
				- Unexposed Asphalt	Yes/No (11)

1. EPS Insulation cannot be used directly beneath Sure-Seal® (Black) FleeceBACK membrane unless a light-colored coating is specified. Both Sure-WhiteTM and Sure-Weld[®] FleeceBACK membrane maybe installed directly over minimum 1.5-lb. density EPS, however to obtain UL & FM codes an overlayment of HP Recovery Board, DensDeck, Securock or HP Polyiso insulation is required.
2. For Insulation attachment only.
3. For new galvanized steel decks, power-washing may be necessary to remove finishing oil residue if present.
4. For acoustical steel decks, fill the flutes with fiberglass or other suitable fill Insulation and tack in place with strips of duct tape 3' o.c. or other adhesive prior to spraying the deck with FAST Adhesive.
5. Existing Smooth BUR must be Type III or IV asphalt if the Sure-Seal (Black) FleeceBACK membrane is to be installed directly without insulation.
6. A minimum 1/2" HP Recovery Board or Insulation is required over properly prepared gravel BUR. FleeceBACK membrane cannot be installed directly over a gravel/slag surface.
7. An insulation providing the necessary R-value must be specified to prevent the coal tar pitch from softening. Sure-Seal (Black) FleeceBACK membrane cannot be installed directly to coal tar pitch.
8. Any loose coatings must be removed by power-washing or by physical abrasion prior to the application of FAST Adhesive. A test installation over the aluminum-coated smooth BUR is recommended to ensure the aluminum coating is fully adhered.
9. Silicone-coated SPF must be scarified (coating removed) prior to the application of FAST Adhesive.
10. Power-washing aged EPDM or Hypalon membrane is required prior to the application of FAST Adhesive.
11. Acceptable with full coverage. Requires CAV-GRIP or 702 Primer with bead spacing greater than 4" o.c.

Investing in Roofing Solutions for Over 45 Years

800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlisle-syntec.com

CARLISLE

Carlisle Syntec

CARLISLE'S **FAST**TM ADHESIVE

Product Data

FAST Adhesive Typical Properties and Characteristics:

Base	100-LV A Polymeric Isocyanate	100-LV B Polyols, Surfactants and Catalysts
Mixing Ratios by Volume	1:1 Part A to Part B	
Viscosity (CPS @ 25C)	250	300-500
Avg. Net Weight	10.25 lbs/gal	8.75 lbs/gal
Packaging	15-gallon drum (57 L) 50-gallon drum (190 L)	15-gallon drum (57 L) 50-gallon drum (190 L)
Shelf Life	1 year	1 year
Temperature Requirements (Substrate & Ambient)		min. 25°F (Heated Equipment) min. 60°F (Unheated Equipment)

* Can be extended to one year by adding FAST Catalyst after six months.

Typical R-value added for FleeceBACK membrane attachment	0.20 to 0.50 R-value
R-value may be higher as more adhesive is used on uneven surfaces	

LEED Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Houston, TX
VOC Content	0 g/L
Solar Reflectance Index	N/A

Investing in Roofing Solutions for Over 45 Years

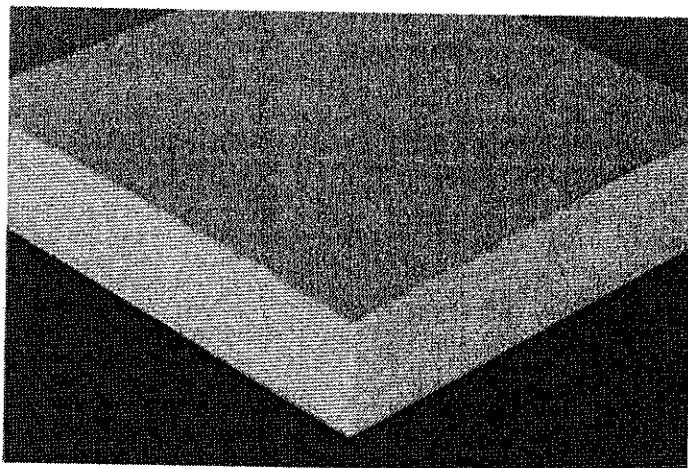
800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlisle-syntec.com

Carlisle, Sure-Seal, Sure-White, Sure-Weld, FleeceBACK, FAST and CAV-GRIP are Carlisle trademarks. DensDeck is a trademark of Georgia Pacific. Securock is a trademark of U.S. Gypsum Co.
REPRINT CODE: 800218 - "FAST Adhesive Product Data Sheet" - 12/10 © 2010 Carlisle.

CARLISLE
Carlisle Syntec

InsulBase® POLYISO

Insulation



Overview

InsulBase is a rigid-roof insulation panel composed of a closed-cell polyisocyanurate foam core bonded on each side to fiber-reinforced paper facers.

Features and Benefits

- » InsulBase polyiso insulation provides the highest R-value per inch of commercially available insulation products
- » Environmentally friendly construction with 0% ozone-depleting components and CFC free
- » Approved for direct application to steel decks

Panel Characteristics

- » Available in 4' x 4' (1220 mm x 1220 mm) and 4' x 8' (1220 mm x 2440 mm) panels in thickness of ½" (13 mm) to 4.5" (115 mm)
- » Available in two grades of compressive strengths per ASTM C1289, Type II, Class 1, Grade 2 (20 psi), Grade 3 (25 psi)

Applications

- » Constructions requiring FM Class 1 and UL Class A ratings
- » Single-Ply Roof Systems (Ballasted, Mechanically Attached, Fully Adhered)

InsulBase Polyiso Thermal Values

Thickness (Inches)	Thickness (MM)	LTTR R-value**	Flute Spanability
0.50	13	2.8	2 ¾"
1.00	25	5.7	2 ¾"
1.50	38	8.6	4 ¾"
1.75	44	10.0	4 ¾"
1.80	46	10.3	4 ¾"
2.00	51	11.4	4 ¾"
2.50	64	14.4	4 ¾"
2.60	66	15.0	4 ¾"
3.00	76	17.4	4 ¾"
3.50	89	20.5	4 ¾"
3.80	97	22.3	4 ¾"
4.00	102	23.6	4 ¾"
4.30	109	25.5	4 ¾"
4.50	114	26.8	4 ¾"

** Long-Term Thermal Resistance Values are based on ASTM C1289 effective January 1, 2014, predicting product R-value after five years, which is equivalent to a time-weighted thermal design R-value for 15 years.

Installation

Ballasted Single-Ply Systems

Each InsulBase panel is loosely laid on the roof deck. Butt edges and stagger joints of adjacent panels. Install the roof membrane according to Carlisle's specifications.

Mechanically Attached Single-Ply Systems

InsulBase panels must be secured to the roof deck with fasteners and plates (appropriate to the deck type). Butt edges and stagger joints of adjacent panels. Install the roof membrane according to Carlisle's specifications.

Fully Adhered Single-Ply Systems

InsulBase panels must be secured to the roof deck with fasteners and plates (appropriate to deck type). Butt edges and stagger joints of adjacent panels. Install the roof membrane according to Carlisle's specifications.

InsulBase 4' x 8' panels can be secured to the roof deck with Carlisle's FAST® Adhesive, either full coverage or bead spacing.

InsulBase 4' x 4' panels may be adhered to prepared concrete deck with a full mopping of Type III or IV asphalt.

Review Carlisle specifications and details for complete installation information.

InsulBase POLYISO

Insulation

InsulBase Codes and Compliances

- » ASTM C1289, Type II, Class 1, Grade 2 (20 psi), Grade 3 (25 psi)
- » International Building Code (IBC) Section 2603

Underwriters Laboratories, Inc.

- » Component of Class A Roof Systems (UL 790)
- » Hourly Rated P series roof assemblies (UL 263) P 225, 230, 259, 302, 303, 506, 510, 514, 519, 701, 710, 713, 717, 718, 719, 720, 722, 723, 727, 728, 729, 730, 732, 734, 735, 739, 741, 742, 743, 819, 824, 827, 828
- » Insulated metal deck assemblies - (UL 1256) nos. 120, 123, 292
- » InsulBase classified by ULC
- » R18846

Factory Mutual Research

- » FM Class 1 approval for steel roof-deck constructions, (FM 4450)
- » FM 4470
(Subject to the conditions of approval described in Roofnav.com)
- » FLORIDA BUILDING CODE APPROVAL FL#1296
- » MIAMI-DADE COUNTY, FLORIDA NOA NO: 04-1018.01

Precautions

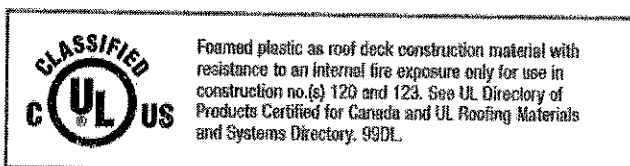
Insulation must be protected from open flame and kept dry at all times. Install only as much insulation as can be covered the same day by completed roof-covering material. Protect installed product from excessive foot traffic. Carlisle will not be responsible for specific building and roof design by others, for deficiencies in construction or workmanship, for dangerous conditions on the job site or for improper storage and handling. Technical specifications shown in this literature are intended to be used as general guidelines only and are subject to change without notice. Call Carlisle for more specific details, or refer to PIMA Technical Bulletin No. 109: Storage & Handling Recommendations for Polyiso Roof Insulation.

Typical Properties and Characteristics (ASTM C1289)

Physical Property	Test Method	Value
Compressive Strength	ASTM D1621	20 psi* minimum (138 kPa, Grade 2)
Dimensional Stability	ASTM D2126	2% linear change (7 days)
Moisture Vapor Permeance	ASTM E96	<1 perm (57.5 ng/(Pa*s*m ²))
Water Absorption	C1763	<1% volume

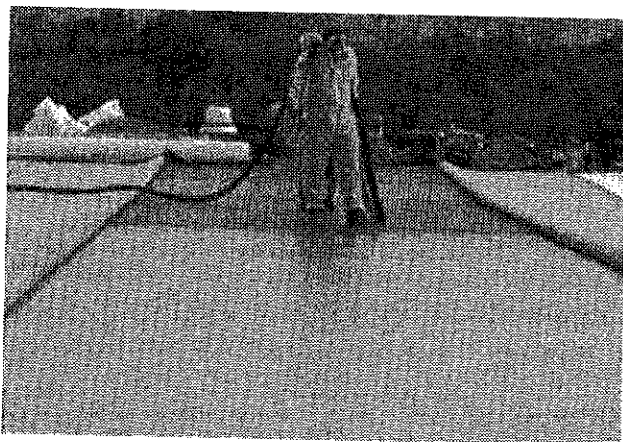
Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

* Polyiso Foam Core only



PIMA
QualityMark
 The Certified ULTR-value

CARLISLE'S FLEECEBACK® TPO MEMBRANES



Overview

Sure-Weld® FleeceBACK membranes are manufactured using a hot-melt extrusion process for complete scrim encapsulation. Once the TPO is reinforced and enhanced with fleece, the total sheet thicknesses available are 100-, 115- and 135-mil creating a very tough, durable and versatile sheet that is ideal for re-roofing or new construction projects. FleeceBACK TPO sheets are chlorine free and plasticizer free with excellent chemical resistance to acids, bases, restaurant oils and greases.

Sure-Weld with Octaguard XT™ weathering package technology withstands extreme durability testing intended to simulate exposure to severe climates. Sure-Weld is based on advanced polymerization technology that combines the flexibility of ethylene-propylene (EP) rubber with the heat weldability of polypropylene.

Intended Uses

FleeceBACK TPO membranes are intended to be used with adhered or mechanically fastened roofing systems. FleeceBACK TPO is ideally suited for roof garden and solar panel applications and projects demanding superior wind uplift resistance due to its added toughness/durability.

Features and Benefits

- Choice of white, gray or tan membranes that are UL Class A rated
- Superior wind uplift performance and ratings (up to an FM 1-945) due to a mechanical bond between fleece and adhesive
- 75% fewer seams than Modified Bitumen

- Wide window of weldability
- Fleece reinforcement adds toughness, durability and enhanced puncture resistance
 - 115-mil delivers 33% greater puncture resistance and 33% greater breaking strength than 60-mil TPO
 - Greater puncture resistance than Modified Bitumen
- Excellent hail damage resistance
 - Passes FM's severe hail test
 - Passes UL-2218 Class 4 rating
 - Passes National Bureau of Standards – 23 Ice Ball test up to 3"-diameter hail with the membrane cooled to 32°F

Installation

Adhered Roofing System

Insulation is mechanically fastened or adhered with Flexible FAST™ Adhesive to the roof deck. When adhering insulation with FAST™ Adhesive, the adhesive is applied to the substrate and allowed to rise and foam. Once FAST Adhesive develops string/body/gel (typically 2 minutes) place insulation into the adhesive and walk it in. Roll the insulation with a 30"-wide 150-pound weighted roller to ensure full embedment. Spray-apply or extrude Flexible FAST Adhesive to the substrate and allow foam to develop string/body/gel (typically 2 minutes) prior to setting FleeceBACK into the FAST Adhesive. Roll FleeceBACK membrane with a 30"-wide 150-pound weighted roller to ensure full embedment. Splices are hot-air welded. *Consult Carlisle specifications for complete installation information.*

Precautions

1. Use proper stacking procedures to ensure sufficient stability.
2. Exercise caution when walking on wet membrane.
3. UV-resistant sunglasses are required for Sure-Weld membranes.
4. White surfaces reflect heat and may become slippery due to frost and ice accumulation.
5. Care must be exercised when working close to a roof edge when the surrounding area is snow covered.
6. FleeceBACK membrane rolls must be tarped and elevated to keep dry prior to installation. If the fleece gets wet, use a wet vac system to help remove moisture from the fleece.
7. Sure-Weld membrane exposed to the weather must be prepared with Weathered Membrane Cleaner prior to hot-air welding.

Investing in Roofing Solutions for Over 45 Years

800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlisle-syntec.com

CARLISLE
Carlisle Syntec

CARLISLE'S FLEECEBACK® TPO MEMBRANES

LEED® Info

Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Manufacturing Location	Senatobia, MS
Solar Reflectance Index	White: 110 Gray: 55 Tan: 88

Radiative Properties for ENERGY STAR®, Cool Roof Rating Council (CRRC) and LEED

Physical Property	Test Method	White	Gray	Tan
ENERGY STAR – Initial solar reflectance	Solar Spectrum Reflectometer	0.87	N/A	0.88
ENERGY STAR – Solar reflectance after 3 years	Solar Spectrum Reflectometer (after cleaning)	0.83	N/A	0.84
CRRC – Initial solar reflectance	ASTM C1549	0.79	0.46	0.71
CRRC – Solar reflectance after 3 years	ASTM C1549 (uncleaned)	0.70	0.43	0.64
CRRC – Initial thermal emittance	ASTM C1371	0.90	0.89	0.86
CRRC – Initial thermal emittance after 3 years	ASTM C1371 (uncleaned)	0.86	0.88	0.87
LEED – Thermal emittance	ASTM E408	0.95	0.96	0.95
Solar Reflectance Index (SRI)	ASTM E1980	110	55	88

Carlisle Extreme Testing – Heat Aging

ASTM Test	ASTM Requirement	Sure-Weld Results
240°F, 670 hours or 4 weeks		5,376 hours or 32 weeks*
Carlisle Extreme Test	275°F, N/A	1,344 hours or 8 weeks

*Comparable to 1,024 weeks (20 years) at 185°F for 6 hrs./day.

Heat Aging accelerates the oxidation rate that roughly doubles for each 10°C (18°F) increase in roof membrane temperature. Oxidation (reaction with oxygen) is one of the primary chemical degradation mechanisms of roofing materials.

Carlisle Extreme Testing – Environmental Cycling

– 10 days heat aging at 240°F (116°C) followed by 5 days water immersion at 158°F (70°C) or with another specimen set
– 5 eight-hour cycles in Kesternich sulfur dioxide chamber (sulfurous acid fog) followed by 5040 kJ/m² (2000 hrs. at 0.70 W/m² irradiance) xenon-arc exposure

Environmental Cycling subjects the membrane to repeated cycles of heat aging, hot-water immersion or acid fog followed by xenon-arc exposure. The acid fog accelerates acid etching that may occur from acid rain if the roof membrane is not resistant to acidic conditions.

Sure-Weld FleeceBACK Membranes

Typical Properties and Characteristics

Physical Property	Test Method	SPEC. (Pass)	Sure-Weld
Tolerance on Nominal Thickness, %	ASTM D751	+/-10	+/-10
Thickness over Fleece, mils	ASTM D4637 Annex		
100-mil (2.54 mm)		.030 (7.62)	.045 (1.14)
115-mil (2.92 mm)		.045 (1.14)	.060 (1.52)
135-mil (3.43 mm)		.080 (2.03)	.080 (2.03)
Weight, lbm/ft²			
100-mil			0.27
115-mil			0.34
135-mil			0.44
Breaking Strength, min. lbf (kN)	ASTM D751 Grab Method	90 (0.4)	300 (1.3)
100-mil			400 (1.8)
115-mil			425 (1.9)
135-mil			
Elongation at break of internal fabric, %	ASTM D751	—	25
Tearing Strength, min. lbf (kN)	ASTM D751 B Tongue Tear	10 (45)	55 (245)
100- & 115-mil, 135-mil			
Puncture Resistance, Joules	ASTM D5635		
100-mil			17.5
115-mil			22.5
135-mil			30.0
Puncture Resistance, lbf	FTM 1010 Method 2031	350	450
100-mil		400	500
115-mil		425	525
135-mil			
Brittleness point, max. °F (°C)	ASTM D2137	40 (-40)	-50 (-46)
Linear Dimensional Change, %	ASTM D1304	+/-1 max	0.2 typical
Field Seam Strength, lbf/in. (kN/m)	ASTM D1876		
ASTM D1876 tested in peel			
100-mil		25 (4.4)	40 (7.4)
115-mil		25 (4.4)	60 (10.5)
135-mil		40 (7.0)	70 (12.3)
Water Vapor Permeance, Perms	ASTM E96		0.10 max
ASTM E96 proc. B	Proc. B		0.05 typical
Resistance to Microbial Surface Growth Rating (1 is very poor, 10 is no growth)	ASTM D3274	—	9-10 typical
Properties after heat aging – ASTM D573, 670 hrs. at 240 °F	ASTM D573		
Breaking strength, % retained		—	90 min.
Elongation reinf., % retained		—	90 min.
Tearing Strength, % retained		—	60 min.
Weight Change, %		—	+/-1.0 max
Ozone Resistance	ASTM D1149	No cracks	No cracks
100 pphm, 168 hours			
Resistance to Water Absorption	ASTM D471	+4	+2
After 7 days immersion to 168°F (70°C)			
Change in mass, max. %			
Resistance to Outdoor (Ultraviolet) Weathering	ASTM G155	No cracks	No cracks
Xenon-arc, total radiant exposure at 0.70 W/m² irradiance, 80°C black panel temp.		No loss of breaking or tearing strength	No loss of breaking or tearing strength
100-mil			17,640 kg/m²
115-mil			20,160 kg/m²
135-mil			27,720 kg/m²

Investing in Roofing Solutions for Over 45 Years

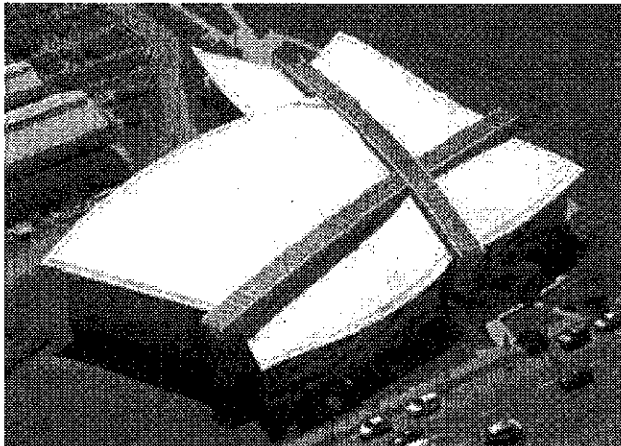
800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlisle-syntec.com

Carlisle, Sure-Weld, FleeceBACK, Octaguard XT, Flexible FAST and FAST are trademarks of Carlisle.
ENERGY STAR is a registered trademark owned by the U.S. Government. LEED is a registered trademark of the U.S. Building Council.
REPRINT CODE: 600934 - "FleeceBACK TPO Membranes Product Data Sheet" - 070810 © 2010 Carlisle.

CARLISLE
Carlisle SynTec



CARLISLE'S **SURE-WELD® REINFORCED TPO MEMBRANE**



Overview

Carlisle Sure-Weld membrane is a premium heat-weldable single-ply thermoplastic polyolefin (TPO) sheet designed for new roof construction and re-roofing applications. Sure-Weld High Slope (HS) membrane is formulated with additional flame retardant (compared to Standard) for higher-slope fire code approvals. Sure-Weld EXTRA is 80-mils-thick for significantly higher strength and weatherability.

Carlisle's Sure-Weld TPO membrane is based on advanced polymerization technology that combines the flexibility of ethylene-propylene (EP) rubber with the heat weldability of polypropylene. All Sure-Weld TPO membranes include OctaGuard XT™, an industry-leading, state-of-the-art weathering package. OctaGuard XT technology enables Sure-Weld TPO to withstand extreme weatherability testing intended to simulate exposure to severe climates.

Physical properties of the membrane are enhanced by a strong polyester fabric that is encapsulated between the TPO-based top and bottom plies. The combination of the fabric and TPO plies provides Sure-Weld reinforced membranes with high breaking strength, tearing strength and puncture resistance. The relatively smooth surface of Sure-Weld membrane produces a total surface fusion weld that creates a consistent, watertight monolithic roof assembly. The membrane is environmentally friendly and safe to install.

Sure-Weld Standard and HS products are available in highly reflective white, tan and gray, in both 45-mil and 60-mil thicknesses. Sure-Weld EXTRA (including HS) is available in 80-mil thickness, in white, gray and tan. Sixteen special colors are also available (see Carlisle's TPO Color Palette brochure). Available widths are 4-, 5- and 6-ft perimeter sheets and 8-, 10- and 12-ft field sheets.

Carlisle's Sure-Weld tan and white TPO membrane can contribute toward LEED® (Leadership in Energy and Environmental Design) credits. Tan and white Sure-Weld are ENERGY STAR®-qualified and California Title 24 compliant.

Features and Benefits

- Outstanding puncture resistance
- Chlorine-free with no halogenated flame retardants
- Plasticizer-free; does not contain liquid or polymeric plasticizers
- Excellent low temperature impact resistance
- Excellent chemical resistance to acids, bases and restaurant exhaust emissions
- Exceptional resistance to heat, solar UV, ozone and oxidation
- Low water vapor permeance and water absorption
- Hot-melt extrusion processed for complete scrim encapsulation
- Warp-knitted fabric (not woven) for smooth surface and greater thickness over scrim
- Sure-Weld is 100% recyclable
(refer to Carlisle's Recyclability Statement)

Installation

Sure-Weld Roofing Systems are quick to install as minimal labor and few components are required. The systems may be installed utilizing labor-saving devices that make sheet welding fast, clean, consistent and easy to learn, while reducing strain on the roofing technician.

The Carlisle Mechanically Fastened Roof System installation starts with the insulation fastened with a minimum of 5 fasteners per 4 by 8 ft. board. The Sure-Weld reinforced membrane is mechanically fastened to the deck using HP-X™ Fasteners and Piranha Plates™ or HP-XTRA Fasteners and Piranha XTRA Plates. Adjoining sheets of Sure-Weld membrane are overlapped over the fasteners and plates and joined together with a minimum 1½-inch-(4 cm) wide hot-air weld.

The Carlisle Fully Adhered Roofing System application begins with the insulation fastened at the required density (max. 1 every 2 sq ft) necessary to resist the appropriate wind load. The substrate and membrane are coated with an appropriate Sure-Weld Bonding Adhesive and the membrane is rolled into place.

- * CONSULT CARLISLE SPECIFICATIONS FOR COMPLETE INSTALLATION INFORMATION.

Investing in Roofing Solutions for 50 Years

800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlislestec.com

CARLISLE
Carlisle Syntec



CARLISLE'S SURE-WELD REINFORCED TPO MEMBRANE

Precautions

1. Sunglasses that filter out ultraviolet light are strongly recommended as tan and white surfaces are highly reflective. Roofing technicians should dress appropriately and wear sunscreen to protect skin.
2. Surfaces may become slippery due to frost and ice buildup. Exercise caution during cold conditions to prevent falls.
3. Care must be exercised when working close to a roof edge when surrounding area is snow-covered as the roof edge may not be clearly visible.
4. Use proper stacking procedures to ensure sufficient stability of the rolls.
5. Exercise caution when walking on wet membrane. Membranes may be slippery when wet.
6. Store Sure-Weld membrane in the original undisturbed plastic wrap in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. Sure-Weld membrane that has been exposed to the weather must be prepared with Weathered Membrane Cleaner prior to hot-air welding.

Sure-Weld Reinforced TPO Membrane				
Typical Properties and Characteristics*				
Physical Property	ASTM D6878 Requirement	45-mil	60-mil	80-mil EXTRA
Tolerance on nominal thickness, %	+10, -10	+10	+10	+10
ASTM D751 test method				
Thickness over scrim, in. (mm)	0.015 min (0.381)	0.018 typ (0.457)	0.024 typ (0.610)	0.034 typ (0.864)
ASTM D6878 optical method, average of 3 areas				
Breaking strength, lbf (kN)	220 (976 N)	225 (1.0) min	250 (1.1) min	350 (1.6) min
ASTM D751 grab method	min	320 (1.4) typ	360 (1.6) typ	425 (1.9) typ
Elongation break of reinforcement, %	16 min	15 min	15 min	15 min
ASTM D751 grab method		25 typ	25 typ	25 typ
Tearing strength, lbf (N)	55 (245) min	55 (245) min	55 (245) min	55 (245) min
ASTM D751 proc. B 8 in. x 8 in.		130 (578) typ	130 (578) typ	130 (578) typ
Brightness point, °F (°C)	-40 (-40) max	-40 (-40) max	-40 (-40) max	-40 (-40) max
ASTM D2137		30 (-48) typ	50 (-46) typ	50 (-48) typ
Linear dimensional change, %	+1 max	+1 max	+1 max	+1 max
ASTM D1204, 6 hours at 158°F		-0.2 typ	-0.2 typ	-0.2 typ
Ozone Resistance, no cracks 7X	PASS	PASS	PASS	PASS
ASTM D1149, 100 ppm, 168 hrs				
Water absorption resistance, mass %	+3.0 max	+3.0 max	+3.0 max	+3.0 max
ASTM D471 top surface only		2.0 typ	2.0 typ	2.0 typ
168 hours at 158°F water				
Factory seam strength, lbf/in (kN/m)	66 (290) min	66 (290) min	66 (290) min	66 (290) min
ASTM D751 grab method				
Field seam strength, lbf/in (kN/m)	No requirement	25 (1.1) min	25 (1.1) min	40 (1.8) min
ASTM D1876 tested in peel		50 (2.2) typ	60 (2.7) typ	70 (3.1) typ
Water vapor permeance, perms	No requirement	0.10 max	0.10 max	0.10 max
ASTM E96 proc. B		0.05 typ	0.05 typ	0.05 typ
Puncture resistance, lbf (kN)	No requirement	280 (1.2) min	300 (1.3) min	400 (1.8) min
FTM 1010, method 2031		325 (1.4) typ	350 (1.6) typ	450 (2.0) typ
(see supplemental section)				
Properties after heat aging				
ASTM D573, 32 weeks @ 240°F				
Breaking strength, % retained	90 min	90 min	90 min	90 min
Elongation relt., % retained	90 min	90 min	90 min	90 min
Tearing Strength, % retained	60 min	60 min	60 min	60 min
Weight change, %	+1.0 max	+1.0 max	+1.0 max	+1.0 max
Typical Weights		0.23 lb/ft² (11 kg/m²)	0.29 (1.4)	0.40 (1.9)

* Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

Investing in Roofing Solutions for 50 Years

800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlisesyntec.com

CARLISLE
Carlisle SynTec



CARLISLE'S SURE-WELD REINFORCED TPO MEMBRANE

Extreme Testing For Severe Climates

ASTM Standard D6878 is the material specification for Thermoplastic Polyolefin Based Sheet Roofing. It covers material property requirements for TPO roof sheet and includes initial and aged properties after heat and xenon-arc exposure. As stated in the scope of the standard, "the tests and property limits used to characterize the sheet are values intended to ensure minimum quality for the intended purpose." Carlisle's goal is to produce TPO that ensures maximum performance for the intended purpose of roofing membranes. Maximum performance requires the membrane to far exceed the requirements of ASTM D6878. For severe climates like Miami, FL and Phoenix, AZ, EXTREME testing is required.

Heat Aging accelerates the oxidation rate that roughly doubles for each 10°C (18°F) increase in roof membrane temperature. Oxidation (reaction with oxygen) is one of the primary chemical degradation mechanisms of roofing materials.

Carlisle Extreme Testing – Heat Aging

	ASTM REQUIREMENT	SURE-WELD REQUIREMENT
ASTM TEST	240°F	52 weeks
Carlisle Extreme Test	275°F	13 weeks

- Test specimen is 1" by 4" piece of 45-mil membrane unbacked, placed in circulating hot-air oven.
- Criterion – no visible cracks after bending aged test specimen around 0.25"-diameter mandrel.

Xenon-Arc exposes the membrane samples to the combined effect of ultraviolet, visible and infrared radiation as well as ozone, heat and water spray, to greatly accelerate the effects of outdoor weathering. The radiation dose is measured in kilojoules per square meter (kJ/m²) at 340 nm machine UV wavelength. The irradiance power of the xenon-arc lamp is measured in Watts per square meter (W/m²).

Carlisle Extreme Testing – Xenon-Arc

	ASTM D6878 REQUIREMENT	45-MIL	60-MIL	80-MIL
ASTM TEST				
kJ/m ² at 340 nm	10,080	17,640	20,160	27,720

- Test specimen is 2.75" by 5.5" piece of membrane, unbacked, weathering side facing arc lamp.
- Criterion – no visible cracks viewed under 10x magnification while wrapped around 3"-diameter mandrel.

Environmental Cycling subjects the membrane to repeated cycles of heat aging, hot-water immersion or acid fog followed by xenon-arc

exposure. The acid fog accelerates acid etching that may occur from acid rain if the roof membrane is not resistant to acidic conditions.

- ASTM requirement – none
- Carlisle EXTREME test*:
 - 10 days heat aging at 240°F (116°C) followed by
 - 5 days water immersion at 158°F (70°C) or with another specimen set
 - 5 eight-hour cycles in Kesternich sulfur dioxide chamber (sulfurous acid fog) followed by
 - 5040 kJ/m² (2000 hrs at 0.70 W/m² irradiance) xenon-arc exposure

*Test specimen is 2.75" by 5.5" piece of membrane with edges sealed.

*Criterion – after 3 complete cycles, test specimens shall remain flexible and not have any cracking under 10x magnification while wrapped around a 3"-diameter mandrel.



CARLISLE'S

SURE-WELD REINFORCED TPO MEMBRANE

Supplemental Approvals, Statements and Characteristics:

1. Sure-Weld TPO meets or exceeds the requirements of ASTM D6878 Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing.
2. **Radiative Properties** for ENERGY STAR, Cool Roof Rating Council (CRRC) and LEED.

	Test Method	White TPO	Tan TPO	Gray TPO
ENERGY STAR initial solar reflectance	Solar Spectrum Reflectometer	0.87	0.88	N/A
ENERGY STAR initial solar reflectance after 3 years	Solar Spectrum Reflectometer (after cleaning)	0.88	0.84	N/A
CRRC initial solar reflectance	ASTM C1549	0.79	0.71	0.68
CRRC solar reflectance after 3 years	ASTM C1549 (uncleaned)	0.70	0.64	0.43
CRRC initial thermal emittance	ASTM C1371	0.90	0.86	0.90
CRRC thermal emittance after 3 years	ASTM C1371 (uncleaned)	0.86	0.87	0.88
LEED thermal emittance	ASTM E408	0.95	0.93	0.95
SRI (Solar Reflectance Index)	ASTM E1080	110	88	85

Solar Reflectance Index (SRI) is calculated per ASTM E1980. The SRI is a measure of the roof's ability to reject solar heat, as shown by a small temperature rise. It is defined so that a standard black (reflectance 0.05, emittance 0.90) is 0 and a standard white (reflectance 0.80, emittance 0.90) is 100. Materials with the highest SRI values are the coolest choices for roofing. Due to the way SRI is defined, particularly hot materials can even take slightly negative values and particularly cool materials can even exceed 100.

LEED Info

Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Manufacturing Location	Senatobia, MS Tomball, TX
Solar Reflectance Index	110

3. Sure-Weld TPO membranes conform to requirements of the U.S.E.P.A. **Toxic Leachate Test** (40 CFR part 136) performed by an independent analytical laboratory.
4. Sure-Weld reinforced TPO was tested for **dynamic puncture resistance** per ASTM D5635-04 using the most recently modified impact head. 45-mil was watertight after an impact energy of 12.5 J (9.2 ft-lbf) and 60-mil was watertight after 22.5 J (16.6 ft-lbf). Both 72-mil and 80-mil EXTRA products were watertight after an impact energy of 30.0 J (22.1 ft-lbf).

Investing in Roofing Solutions for 50 Years

800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlislestec.com

Carlisle, Sure-Weld, Oclaguard XT, Piranha Plates and HP-X are trademarks of Carlisle.

ENERGY STAR is a registered trademark owned by the U.S. Government. LEED is a trademark of the U.S. Green Building Council.

* ENERGY STAR qualification is only valid in the U.S.

REPRINT CODE: 600515 - "Sure-Weld Reinforced TPO Membrane Product Data Sheet" - 021812 © 2012 Carlisle.



Carlisle SynTec

Sure-Weld[®] TPO

Bonding Adhesive



Overview

Carlisle's Sure-Weld Bonding Adhesive is a high strength solvent-based contact adhesive that allows bonding of Sure-Weld TPO membrane to various porous and non-porous substrates.

Features and Benefits

- » Solvent based bonding adhesive that allows for quick drying
- » Can be roller-applied with medium nap roller
- » Provides excellent adhesion to various substrates

Coverage Rate

Carlisle Sure-Weld Bonding Adhesive – 60 ft² (5.6 m²) per gallon finished surface. Coverage rates are average and may vary due to conditions on the jobsite. Porous surfaces and substrates may require more bonding adhesive than the typical coverage rate.

Mixing

Stir thoroughly until all settled pigments are dispersed and the adhesive is uniform in color. Minimum 5 minutes stirring is recommended.

Application

1. The surface, on or against which adhesive is to be applied, shall be clean, smooth, dry, free of fins, sharp edges, loose and foreign materials, oil and grease. Depressions greater than 1/4" (6 mm) should be feathered, using epoxy, mortar or other approved patching material. All sharp projections shall be removed by sweeping, blowing or vacuum cleaning.

2. After thorough stirring (minimum 5 minutes), apply Sure-Weld Bonding Adhesive to substrate and membrane using a 9" (23 mm) medium nap roller. Application shall be continuous and uniform, avoiding globs or puddles. An open time of 5 to 50 minutes, based on drying conditions is recommended before assembly. Sure-Weld Bonding Adhesive must be allowed to dry until it does not string or stick to a dry finger touch. Any coated area which has been exposed to rain should be allowed to dry and then recoated. Do not apply adhesive to splice areas to be hot-air welded.
3. Roll the membrane onto the adhesive coated substrate while avoiding wrinkles. Immediately brush down the bonded portion of the sheet with a soft bristle push broom or a clean dry roller applicator to achieve maximum contact.

Review current Carlisle specifications and details for specific application requirements.

Precautions

- » Review the applicable Material Safety Data Sheet for complete safety information prior to use.
- » Sure-Weld Bonding Adhesive is **EXTREMELY FLAMMABLE** – it contains solvents that are dangerous fire and explosion hazards when exposed to heat, flame or sparks. Do not smoke while applying. Do not use in a confined or unventilated area. Vapors are heavier than air and may travel along ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electrical motors, static discharge or other ignition sources at locations distant from material handling point and flashback. All containers should be grounded when material is transferred from one container to another. A red caution label is required when shipping. A fire extinguisher should be available. In case of fire, use water spray, foam, dry chemical or carbon dioxide. Do not use a solid stream of water because it can scatter and spread the fire.
- » Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation. If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately. During application, efforts must be made to prevent fumes from entering the building via air ventilation ducts. Do not place open containers or mix adhesive near fresh air intake units. When possible, shut down or seal off the closest units.
- » If swallowed, **DO NOT INDUCE VOMITING**. Call a physician immediately.
- » Avoid contact with eyes. Safety glasses or goggles are recommended. If splashed in eyes, immediately flush eyes with plenty of clean water for at least 15 minutes. Contact a physician immediately.

Sure-Weld TPO

Bonding Adhesive

- » Avoid contact with skin. Wash hands thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water. Contact physician if irritation persists.

Note: Permeation resistant gloves (that meet ANSI/ISEA 105-2005) are recommended to be worn when using this product to protect hands from irritating ingredients.

- » Do not thin Sure-Weld Bonding Adhesive. Thinning will affect performance. Excessively thick or gelled material should be discarded.
- » Jobsite storage in excess of 90°F (32°C) may affect product shelf life. Should the Sure-Weld Bonding Adhesive be stored at temperatures lower than 60°F (15°C), restore to room temperature prior to use.
- » Opened containers of Sure-Weld Bonding Adhesive should be used within 48 hours. Adhesives will begin to thicken after this point, making it difficult, and eventually impossible, to control applied thickness. In hot weather, do not leave sealed containers on roof for prolonged periods of time. In cold weather, keep material at room temperature until ready to use. Stir adhesive occasionally while using.
- » Adhesive must be allowed to dry thoroughly. If membrane is mated with the substrate prior to the adhesive being dry, blistering will occur and not subside over time.
- » KEEP OUT OF THE REACH OF CHILDREN.

Typical Properties and Characteristics

Base	Synthetic rubber
Color	Yellow
Solids	20%
Flash Point	-4°F (-20°C) closed cup
Brookfield Viscosity	2600 centipoises
Average Net Weight	7.1 lbs/gal (3.2 Kg)
Packaging	5 gal. pail
Shelf Life	1 year

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

Sure-Weld® TPO

Cut-Edge Sealant



Overview

Carlisle's TPO Cut-Edge Sealant is a medium solids content, free-flowing, polymeric material designed to be used for sealing cut edges of Sure-Weld TPO Reinforced Membrane. It is available in clear for use with various colors of TPO membrane.

Carlisle TPO Cut-Edge Sealant is used to seal cut edges of TPO Membrane, providing a waterproof barrier where scrim reinforcement is exposed.

Features and Benefits

- » Provides excellent sealing of exposed fabric at cut membrane edges
- » Squeeze-bottle packaging allows easy, no-mess application
- » Available in clear for use with various colors of Sure-Weld TPO membrane

Coverage Rate

Approximately 225' – 275' (70 – 85 m) per 16-oz. bottle when applied with 1/8" (3 mm) bead. Approximately 115' – 140' (35 – 45 mm) per 8-oz. bottle when applied with 1/8" (3 mm) bead.

Application

1. All surfaces to be sealed with TPO Cut-Edge Sealant must be clean, dry and free from oil, grease, dirt and other foreign materials.
2. Apply a 1/8" (3 mm) bead of TPO Cut-Edge Sealant from the plastic squeeze bottle to seal cut edges of reinforced TPO membrane. Do not apply TPO Cut-Edge Sealant on vertical surfaces.
3. Sealant should be tack-free in 2 hours and fully cured in 24 hours depending on weather conditions and application thickness.

Review Carlisle specifications and details for complete installation information.

Precautions

- » Review the applicable Material Safety Data Sheet for complete safety information.
- » TPO Cut-Edge Sealant is **FLAMMABLE** – it contains solvents that are dangerous fire and explosion hazards when exposed to heat, flame or spark. Do not smoke while applying. Do not use in a confined area or unventilated area. Vapors are heavier than air and may travel along the ground to a distant ignition source and flashback.
- » Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation. If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.
- » If swallowed, **DO NOT INDUCE VOMITING**. Call a physician immediately.
- » Avoid contact with eyes. Safety glasses or goggles are recommended. If splashed in eyes, immediately flush eyes with plenty of water for at least 15 minutes. Contact a physician immediately.
- » Avoid contact with skin. Permeation-resistant gloves (that meet ANSI/ISEA 105-2005) recommended. Wash thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water.
- » Jobsite storage temperatures in excess of 90°F (32°C) may affect product shelf life. Should the TPO Cut-Edge Sealant be stored at temperatures below 60°F (15°C), restore to room temperature prior to use.
- » **KEEP OUT OF THE REACH OF CHILDREN**

EXPERIENCE THE CARLISLE DIFFERENCE



Sure-Weld TPO

Cut-Edge Sealant

Typical Properties and Characteristics

Base	Synthetic Rubber
Color	Clear
Solids	14%
Viscosity	3,500 cps
Flash Point	39°F (4°C)
Net Weight Gallon	7.4 lbs (3.3 kg)
Resistance to:	
Ozone	Excellent
UV	Excellent
Water	Excellent
Packaging	Eight 16-oz. bottles/carton (3.8 L) or two 8-oz. bottles (1.9 L)
Shelf Life	1 year

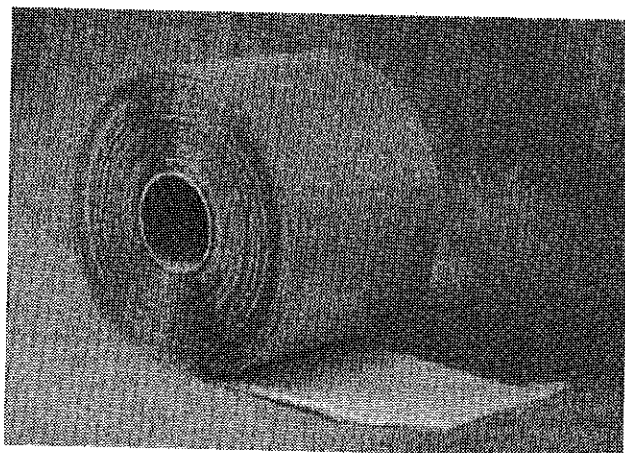
Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Rockland, MA
VOC Content	750 g/L



CARLISLE'S **SURE-WELD® PRESSURE-SENSITIVE COVERSTRIP**



Overview

Sure-Weld Pressure-Sensitive (PS) Coverstrip is a nominal 30-mil (0.76 mm) thick non-reinforced TPO flashing laminated to a nominal 30-mil (0.76 mm) thick, fully cured synthetic rubber pressure sensitive adhesive. PS Coverstrip is available in 6-inch (152 mm) width x 100-foot (30.5 m) long rolls and three (3) membrane colors – white, gray, and tan.

Intended Uses

Sure-Weld Pressure-Sensitive Coverstrip is intended to strip in flat metal flanges (i.e. drip edge or self-flashing curb flanges).

*PS Coverstrip cannot be used for flashing corners, pipes, T-joints, butt joints on Sure-Weld FleeckBACK® systems or any angled metal flanges such as gravel stops or other canted metal edgings.

Features and Benefits

Pressure sensitive adhesive is compatible with a variety of metal finishes and allows for a fast, simple installation with no welding required.

Carlisle's Sure-Weld PS Coverstrip is part of the Certified Fabricated Accessory (CFA) program. Certified Fabricated Accessories are the only factory-fabricated TPO accessories that meet the stringent quality tolerances required to be included in a Carlisle warranted roofing system.

Installation

1. Clean the existing membrane (and metal if applicable) with Weathered Membrane Cleaner and HP Splice Wipes or other natural fiber rags. A Carlisle Primer Pad may be necessary to remove a heavy build-up of dirt. Pour a small amount of Weathered Membrane Cleaner over a primer pad and rub area to be welded in a circular motion. Wipe away residual dirt with HP Splice Wipes or other natural fiber rags.
2. Roller apply TPO Primer or Low VOC TPO Primer to the area of the membrane to be flashed with a short nap length paint roller. The properly primed area will be uniform in color without streaks and free of globs or puddles.

*Do not use HP-250 Primer on TPO membrane.
3. The entire surface where the flashing will be applied must be clean. The adhesive on the back of the Pressure-Sensitive (PS) Coverstrip will not adhere to dusted/dirty surfaces. Any residual surface contamination will be detrimental to the bond strength of the adhesive.
4. Install coverstrip immediately after TPO Primer or Low VOC TPO Primer flashes off to minimize potential dust contamination and to promote adhesion in colder weather.
5. Peel off 10-12" (250-300 mm) of the protective release liner from the PS Coverstrip. Position the flashing over the area to be covered and press down using firm, even hand pressure across the entire area. Continue this process until the full area to be flashed is completed. (Cut-Edge Sealant is not required on edges of PS Coverstrip).
6. Immediately roll the PS Coverstrip with a 2" (50-mm) wide silicone roller using positive pressure. Roll across the coverstrip edge, not parallel to the length. In areas where the PS Coverstrip crosses a metal joint, a membrane seam (T-joint) or at an end lap use a hot air gun to heat the top surface (TPO flashing) of the PS Coverstrip and crease the material into the step-off. This process reduces the possibility of a water channel forming.
7. To achieve proper adhesion of the PS Coverstrip when job site temperatures fall below 40°F (5°C), heat the cleaned/primed area of the membrane with a hot air gun as the flashing is applied and pressed into place.

Investing in Roofing Solutions for Over 45 Years

800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlisle-syntec.com

CARLISLE
Carlisle SynTec



CARLISLE'S **SURE-WELD®** **PRESSURE-SENSITIVE COVERSTRIP**

Product Data

Precautions

1. PS Coverstrip cannot be used for flashing corners, pipes, T-joints, butt joints on Sure-Weld FleeceBACK systems or any angled metal flanges such as gravel stops or other canted metal edgings.
2. Avoid prolonged contact with skin. In case of contact with skin, thoroughly wash affected area with soap and water.
3. Prolonged job site storage temperatures in excess of 90°F (32°C) may affect product shelf life.
4. In warm, sunny weather; keep PS Coverstrip rolls in their box or in a shaded area until ready to use.
5. Storage and use of PS Coverstrip at temperatures below 40°F (4°C) will result in a loss of adhesive tack, and in extreme cases, will result in no bond to the substrate. Overnight storage must be available to keep the temperature of the PS Coverstrip at a minimum of 60°F (15°C). Hot boxes for job site storage must be provided to maintain a minimum product temperature of 40°F (4°C).
6. PS Coverstrip must be stored in a dry area.
7. Due to solvent flash-off, condensation may form on freshly applied TPO Primer when the ambient temperature is near the dew point. If condensation develops, the application of TPO Primer and PS Coverstrip must be discontinued since proper adhesion will not be achieved. Allow the surface to dry and apply a thin freshener coat of TPO Primer to the previously coated surface and apply PS Coverstrip when conditions allow.
8. Do not allow waste products (petroleum, grease, oil, solvents, vegetable or mineral oil, animal fats, etc.) or direct steam venting to come in contact with the PS Coverstrip.
9. KEEP OUT OF THE REACH OF CHILDREN.

Sure-Weld Pressure-Sensitive Coverstrip

Typical Properties and Characteristics

Tensile Strength, psi (MPa):	ASTM D412	2,500 (17.2) Minimum 2,900 (20.0) Typical
Elongation, %:	ASTM D412	600 Minimum 750 Typical
Hardness, Shore A:	ASTM D2240	Typical 80
Color:	White, gray and tan	
Base:	Membrane - Non-reinforced TPO Adhesive - Synthetic Rubber	
Solids:	100%	
Nominal Thickness:	0.060" (1.52 mm)	
Nominal Width:	Membrane - 6" (152 mm) Adhesive - 6-1/4" (159 mm)	
Nominal Length:	100 ft. (30.5 m)	
Net Weight per Roll:	22 lbs. (10 kg)	
Packaging:	2 Rolls/Carlon	
Shelf Life:	1 Year	

* General Properties. Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

Investing in Roofing Solutions for Over 45 Years

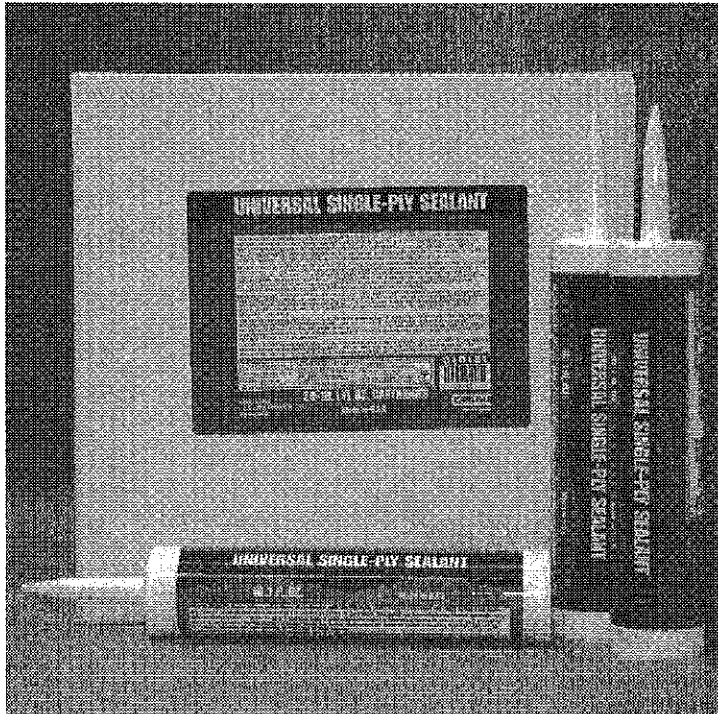
800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlisle-syntec.com

Carlisle, Sure-Weld and FleeceBACK are trademarks of Carlisle.

REPRINT CODE: 604565 - "Sure-Weld Pressure-Sensitive Coverstrip Product Data Sheet" - 051210 © 2010 Carlisle.

CARLISLE
Carlisle Syntec

CARLISLE'S **UNIVERSAL SINGLE-PLY SEALANT**



Overview

Carlisle's Universal Single-Ply Sealant is a 100 % solids, solvent-free, one-part, polyether sealant that provides a weather tight seal to a variety of building substrates. Universal Single-Ply Sealant can be used as a termination bar sealant for Sure-Weld[®], Sure-Flex[™] and Sure-White[™] Fully Adhered and Mechanically Fastened Roofing Systems. It is also an excellent product for use in counter flashing, coping and scupper details. See Carlisle specifications and details for specific applications.

Intended Uses

Universal Single-Ply Sealant has excellent adhesion to substrates such as stone, masonry, ceramic, marble, wood, steel, aluminum, most plastics and composites. Universal Single-Ply Sealant is not recommended as a glass-glazing sealant.

Features and Benefits

- Excellent adhesion to various substrates

Installation *

1. Universal Single-Ply Sealant is a one-component, read material that requires no mixing or preparation.
2. Surface Preparation - Surfaces shall be dry, clean and dust, or contamination, which may harmfully affect the of the sealant. Cleaning with Carlisle's Weathered Mem Cleaner may be required.
3. A quality caulking gun should be used to ensure ease application.
4. Universal Single-Ply Sealant typically is tack free in 25 and skins over within 45 minutes. Full cure occurs in : depending on temperature and humidity.
5. Clean Up - Remove excess sealant adjacent to joint pr with Carlisle's Weathered Membrane Cleaner. Uncured can also be removed from tools or equipment with the Membrane Cleaner.

Precautions *

1. Avoid prolonged contact with skin. Uncured adhesive i eyes. In case of contact with eyes, immediately flush v Consult a physician if ill effects occur.
2. Store in original unopened containers in a cool, dry an unopened containers from heat and direct sunlight. El temperatures will reduce shelf life.
3. KEEP OUT OF THE REACH OF CHILDREN.
4. For industrial professional use only. May not be repack resold for other than industrial or professional use.
5. See Material Safety Data Sheet for complete safety inf before using product.
6. Do not use Universal Single-Ply Sealant in temperature 40°F.

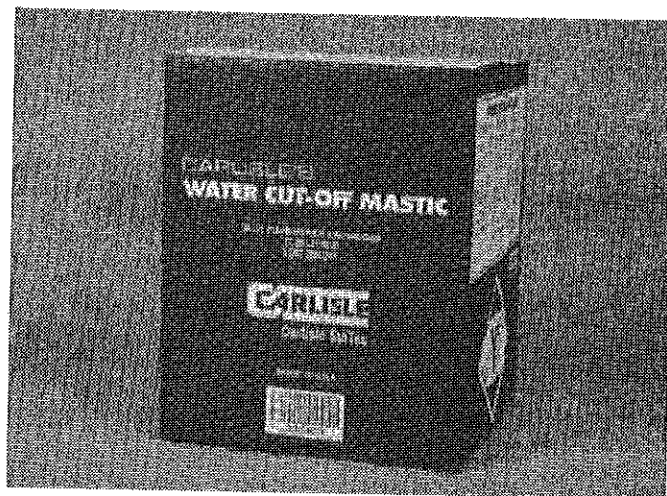
* REVIEW CURRENT CARLISLE SPECIFICATIONS AND DETAIL SPECIFIC APPLICATION REQUIREMENTS.

CARLISLE'S UNIVERSAL SINGLE-PLY SEALANT

Universal Single-Ply Sealant	
Typical Properties and Characteristics**	
Color	White
Viscosity	850,000 Cps.
Tack Free Time	35 minutes depending on temp/humidity
Cure Time	3-7 days depending on temp/humidity
Flow, Sag or Slump	None (1/4" Bead)
Staining	None
Ozone Resistance	Good
UV Resistance	Excellent
Cured Hardness (Shore A)	17-23
Shear Strength	150 PSI
Weight per Carton	26 lbs
Packaging	24 Cartridges, 10.1 Fl. Oz. each
Shelf Life	12 months, unopened container @ 90°F

** Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

Water Cut-Off Mastic



Overview

Let Carlisle simplify your next membrane installation with its Water Cut-Off Mastic. Water Cut-Off Mastic is a one-component, low-viscosity, self-wetting, butyl-blend mastic designed to be used in conjunction with roofing and waterproofing systems. It is primarily used as a sealing agent between various membranes and applicable when membrane is being terminated using a compression-type seal.

Water Cut-Off Mastic is an extremely tacky material and will remain as such when used with compression-type terminations.

Features and Benefits

- » Extremely tacky
- » Provides a durable compression-type seal between various membranes and parapet wall constructions

Coverage Rate

10 linear feet per tube at the recommended application rate of a ½" bead.

Application

1. All surfaces to be sealed with Water Cut-Off Mastic must be free of moisture, oil, dirt and other foreign materials. Water Cut-Off Mastic cannot be used on insulation.
2. Apply a ½" (13 mm) bead of Water Cut-Off Mastic between the substrate and the edge of the membrane.
3. Apply appropriate termination material and secure to provide constant compression for the Water Cut-Off Mastic.

Review Carlisle specifications and details for complete application information.

Precautions

- » Review the applicable Material Safety Data Sheet for complete safety information prior to use.
- » Water Cut-Off Mastic is **FLAMMABLE** — contains solvents that are dangerous fire and explosion hazards when exposed to heat, flame or sparks. Store and use away from all sources of heat, flame or sparks. Do not smoke while applying. Do not use in a confined or unventilated area. Vapors are heavier than air and may travel along ground to a distant ignition source and flash back.
- » Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation. If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.
- » If swallowed, **DO NOT INDUCE VOMITING**. Call a physician immediately.
- » Avoid contact with eyes. Safety glasses or goggles are recommended. If splashed in eyes, immediately flush eyes with plenty of clean water for at least 15 minutes. Contact a physician immediately.
- » Avoid contact with skin. Wash hands thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water.

Note: Permeation-resistant gloves (that meet ANSI/ISEA 105-2005) are recommended to be worn when using this product to protect hands from irritating ingredients.

Water Cut-Off Mastic

Typical Properties and Characteristics

Color	Gray
Solids	80%
Flash Point	40°F (4°C) Closed Cup
Service Temperature	-40°F to 200°F (-40°C to 93°C)
Specific Gravity	1.29
Cold Weather Flexibility	Excellent
Average Brookfield Viscosity	1,320,000 cps
Packaging	25 tubes/carton
Clean up	Weathered Membrane Cleaner
Average net weight/carton	28 lbs (13 kg)
Shelf life	1 year, unopened container

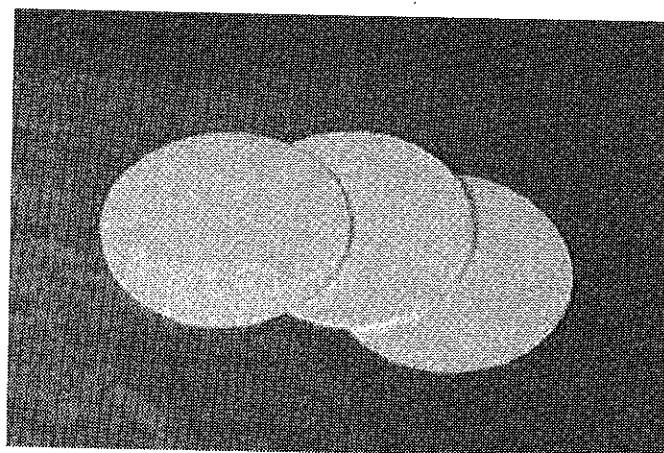
Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA
VOC Content	250 g/L

Sure-Weld TPO

T-Joint Covers



Overview

Let Carlisle simplify your next Sure-Weld TPO installation with molded T-Joint Covers. Sure-Weld TPO T-Joint Covers are used to seal step-offs at splice intersections. Installation is mandatory on all 60- and 80-mil TPO systems and on 45-mil systems where step-offs have not been properly sealed. Sure-Weld TPO T-Joint Covers consist of 60-mil non-reinforced TPO formed into a perfect 4.5"-diameter circle and packaged 100 parts per carton. Available in white, tan and gray.

Carlisle's Sure-Weld TPO T-Joint Covers are part of the Certified Fabricated Accessory (CFA) program. Certified Fabricated Accessories are the only factory-fabricated TPO accessories that meet the stringent quality tolerances required to be included in a Carlisle warranted roofing system.

Features and Benefits

- » Every T-Joint cover is a perfect 4.5" diameter circle
- » More consistent appearance than hand-cut flashing
- » Provides substantial labor savings compared to field-cut flashing
- » Seals channels at splice intersections created by seam step-offs

Installation

1. If membrane has been exposed to the weather, clean splice intersection area with Weathered Membrane Cleaner.
2. Use a lower temperature setting on the hand heat welder than that used for welding reinforced TPO membrane. (Typically a setting of "6" on a scale of "10" is appropriate for welding TPO T-Joint Covers.)
3. Center the T-Joint Cover over the splice intersection, begin welding at the center point and work towards the outside. Use the edge of the roller to crease the T-Joint cover into membrane step-offs to achieve a proper seal.
4. Using a probe, check all splices for voids and cold welds only once the T-Joint Cover has completely cooled. Make any needed repairs.

Review Carlisle specifications and details for complete installation information.

Precautions

- » The TPO T-Joint Cover is not intended to overlay fasteners and plates as this requires the use of reinforced membrane.
- » Store T-Joint Covers in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. T-Joint Covers that have been exposed to the weather must be prepared with Weathered Membrane Cleaner before hot-air welding.

Typical Properties and Characteristics

Size	4.5" (114 mm)
Thickness	0.060" (1.5 mm)
Packaging	100 per box
Weight (per box)	3.5 lbs. (1.6 kg)
Material	Non-Reinforced TPO
Color	White, Gray, Tan

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

Weathered Membrane Cleaner



Overview

Let Carlisle simplify your next EPDM or TPO installation with Weathered Membrane Cleaner. Weathered Membrane Cleaner is used to clean both new and in-service Sure-Seal®, Sure-White® and Sure-Tough® EPDM membranes and Sure-Weld® TPO membrane prior to the seaming process. It helps to loosen and remove dirt and other contaminants from the surface of the EPDM and TPO membranes and leaves a suitable surface for welding or the subsequent application of primer. Weathered Membrane Cleaner should be used when preparing EPDM membranes for application of primer, adhesives, SecurTAPE™, Factory-Applied Tape™ (FAT) and flashing. Do not use Weathered Membrane Cleaner on PVC membranes — instead use PVC Membrane Cleaner.

Features and Benefits

- » Easily removes dirt and other contaminants from EPDM and TPO membranes
- » Prepares EPDM membrane for application of primer, adhesives and tape
- » Prepares aged or contaminated TPO membrane for welding

Coverage Rate

Coverage rate depends on the age of the membrane and the amount of dirt/debris on the surface. Assume 400 ft² (37 m²) (one surface) per gallon.

Application

EPDM

1. Remove as much loose material as possible from the membrane surface where the adhesive or pressure-sensitive product will be applied by brooming or wiping the area with a dry rag. Extreme conditions of accumulated dirt may require a low sudsing detergent and water cleaning (rinse area thoroughly with CLEAN water and allow to dry).
2. Saturate a clean HP Splice Wipe (or equivalent) with Weathered Membrane Cleaner. SCRUB the area in a circular motion. Continue to clean the area, changing wipes frequently, until the surface is a consistent color with no streaking. Additional cleaning is required at factory seams (scrub parallel to the seam). Allow to dry.
3. Apply primer according to product instructions and/or roofing system specification.

TPO

Weathered Membrane Cleaner may be used to remove construction dirt or to prepare aged TPO membrane prior to welding.

New TPO:

1. Saturate a clean HP Splice Wipe (or equivalent) with Weathered Membrane Cleaner.
2. Wipe the area to be cleaned until the membrane is a consistent color with no streaking and allow to dry.
3. Weld the cleaned material together with an appropriate hot-air welder.

Welding Aged Material:

1. Using a Primer Pad and Weathered Membrane Cleaner, scrub the area to be welded. (The cleaner will become white with membrane residue during this step of the procedure.)
2. Clean all residue from the area to be welded with an HP Splice Wipe (or equivalent). Allow to dry.
3. Weld the cleaned material together with an appropriate hot-air welder.

Review Carlisle specifications and details for complete application information.

Weathered Membrane Cleaner

Precautions

- » Review the applicable Material Safety Data Sheet for complete safety information prior to use.
- » Weathered Membrane Cleaner is **EXTREMELY FLAMMABLE**. This product contains materials that are fire and explosion hazards when exposed to heat, flame or sparks. Store and use away from all sources of heat, flame or sparks. Do not smoke while applying. Do not use in a confined or unventilated area. Vapors are heavier than air and may travel along ground to a distant ignition source and flash back. A red caution label is required when shipping.
- » During application, efforts must be made to prevent fumes from entering the building via air ventilation ducts. Do not place open containers or mix adhesive near fresh-air intake units. When possible, shut down or seal off the closest units.
- » Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation. If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.
- » If swallowed, **DO NOT INDUCE VOMITING**. Call a physician immediately.
- » Avoid contact with eyes. Safety glasses or goggles are recommended. If splashed in eyes, immediately flush eyes with plenty of water for at least 15 minutes. Contact a physician immediately.
- » Avoid contact with skin. Wash hands thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water.

Note: Permeation-resistant gloves (that meet ANSI/ISEA 105-2005) are recommended to be worn when using this product to protect hands from irritating ingredients.
- » **KEEP OUT OF THE REACH OF CHILDREN.**

Typical Properties and Characteristics

Color	Clear
Solids	0%
Flash Point	65°F (18°C)
Boiling Point	260°F (127°C)
Packaging	5-gallon (18.9-liter) closed-top pail 2 x 1-gallon (3.8-liter) closed-top pail

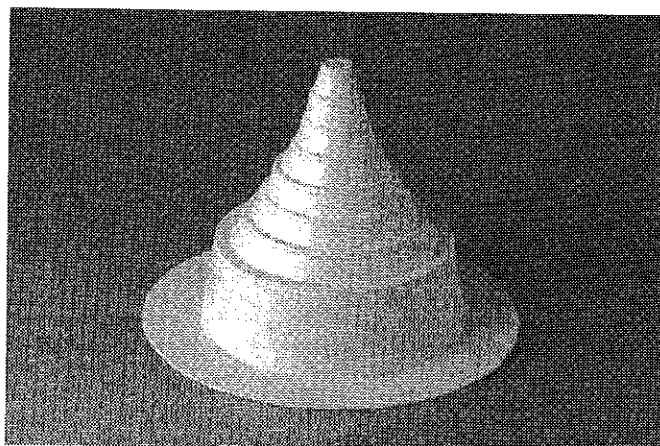
Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA
VOC Content*	755 grams/liter

*This product is exempt from VOC regulations.

Sure-Weld[®] TPO Pipe Seals



Overview

Let Carlisle simplify your next Sure-Weld TPO installation with TPO Molded Pipe Seals. TPO Pipe Seals are injection-molded, pre-formed flashings for pipes ¾" (19.0 mm) to 8" (203.2 mm) in diameter. TPO Pipe Seals are packaged in boxes of eight and come with universal stainless steel clamping rings.

Carlisle's TPO Molded Pipe Seals are part of the Certified Fabricated Accessory (CFA) program. Certified Fabricated Accessories are the only factory-fabricated TPO accessories that meet the stringent quality tolerances required to be included in a Carlisle warranted roofing system.

Features and Benefits

- » Provides a reliable method of waterproofing round pipe penetrations
- » Provides a substantial labor savings compared to field fabricating from non-reinforced flashing
- » Provides more consistent appearance than field-fabricated pipe flashings
- » Double-ribbed cutting guide provides easier, smoother and straighter cuts
- » Rib design also keeps the clamp in the proper position for the life of the roofing system

Installation

1. Cut pipe seal between the two raised "ribs" to the desired diameter as illustrated on the flange of the pipe seal. (Do not cut off both raised "ribs".)
2. Pull TPO Pipe Seal over pipe until base flange is in contact with the membrane. (Application of heat to the top portion of the TPO Pipe Seal may be necessary to allow installation over the pipe.)
3. Mark pipe around the top of the TPO Pipe Seal.
4. Pull TPO Pipe Seal upwards on pipe until mark on the pipe is visible.
5. Install Water Cut-off Mastic below mark which indicates the top of the installed TPO Pipe Seal.
6. Pull TPO Pipe Seal back down over pipe and into position.
7. Heat weld the TPO Pipe Seal base flange to deck membrane (the hand-welder temperature setting should be between 5 and 6).
8. Install a stainless steel universal clamping ring to provide constant compression of the sealant.

Review Carlisle specifications and details for complete installation information.

Precautions

- » Remove all lead and other flashing.
- » Temperature of pipe must not exceed 160°F (71°C).
- » When used with mechanically fastened membrane, install a minimum of four fastening plates around pipe penetrations. Position fastening plates around the penetration so the plates are covered by the pipe seal flange. A minimum 1½"-wide weld must be maintained around the outer edge of the flange beyond the plates. If fastening plates cannot be installed in a manner to allow a minimum 1½" weld, the plates must be placed outside the TPO Pipe Seal flange and covered with a reinforced TPO overlay.
- » Store pre-molded pipe seals in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. TPO Pipe Seals or membrane that has been exposed to the weather prior to use must be prepared with Weathered Membrane Cleaner prior to hot-air welding.

Sure-Weld TPO

Pipe Seals

Typical Properties and Characteristics

Sizes	¾" to 8" O.D. pipe (19.0 to 203.2 mm)
Packaging	8/box
Weight (each)	0.63 lbs (0.3 kg)
Material	Injection-molded TPO
Color	White, gray and tan

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Bloomington, IL
Solar Reflectance Index (SRI)	N/A

Please use the chart below to cross-reference your pipe size with the proper step to cut as shown.

Copper Tubing (C.T.S.)

Nominal tube size	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
Pipe O.D.	.88	1.13	1.38	1.63	2.13	2.63	3.13	4.13	5.13	6.13	N/A
Step of boot used	1	1	1	1½	2	2	3	4	5	6	N/A

Schedule 40 / 80 Steel Pipe - PVC Standard - Polyethylene Pipe IPS

Nominal tube size	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
Pipe O.D.	1.05	1.32	1.66	1.90	2.38	2.88	3.50	4.50	5.56	6.63	8.63
Step of boot used	1	1	1½	1½	2	3	3	4	5	6	8

Cast Iron Pipe

	Pit Class A & Spun 100 - 250					Pit Class B, C & D				
Nominal tube size	2"	3"	4"	6"	8"	2"	3"	4"	6"	8"
Pipe O.D.	2.50	3.96	4.80	6.90	9.50	N/A	3.96	5.00	7.10	9.30
Step of boot used	2	4	5	6	N/A	N/A	4	5	6	N/A

Sewer - Soil Pipe

PVC Plastic SDR 35 & 41 - Cast Iron Soil Pipe no hub - service weight & extra heavy											
Nominal tube size	4"	4"	4"	4"	6"	6"	6"	6"	8"	8"	8"
Pipe O.D.	4.22	4.38	4.30	4.62	6.28	6.30	6.30	6.62	8.40	8.38	8.75
Step of boot used	4	4	4	4	6	6	6	6	8	8	8

Conduit EMT

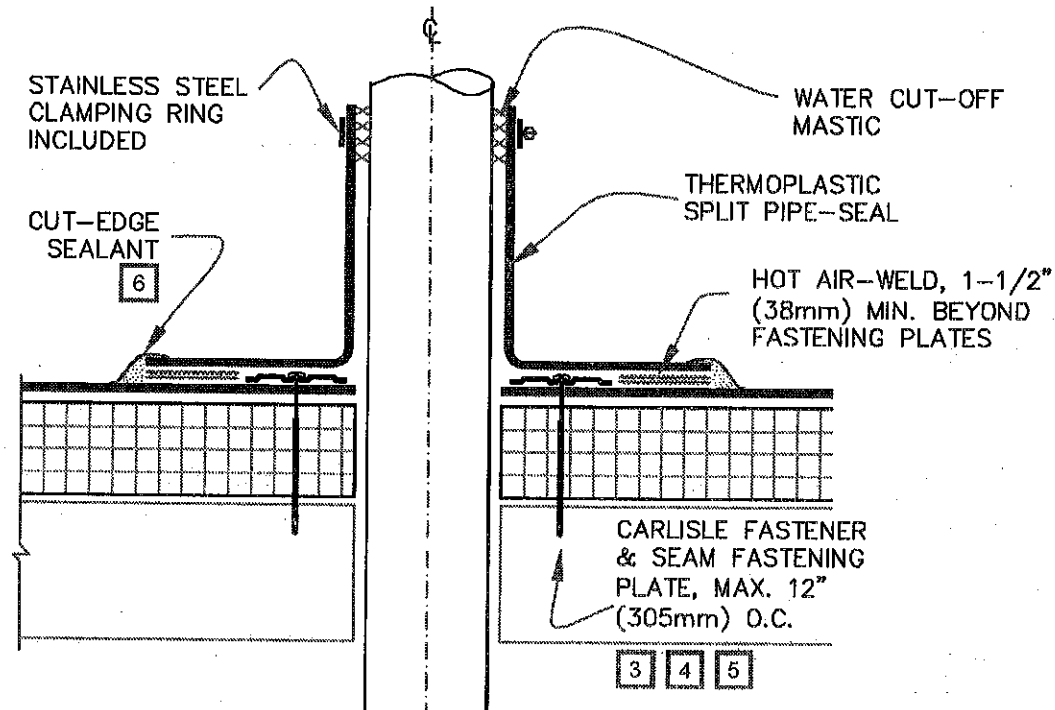
Nominal tube size	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"
Pipe O.D.	.922	1.16	1.51	1.74	2.19	2.88	3.50	4.00	4.50
Step of boot used	1	1	1	1½	2	3	3	4	4

Conduit IMC

Nominal tube size	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"
Pipe O.D.	1.02	1.29	1.63	1.88	2.36	2.85	3.47	3.97	4.46
Step of boot used	1	1	1½	1½	2	3	3	4	4

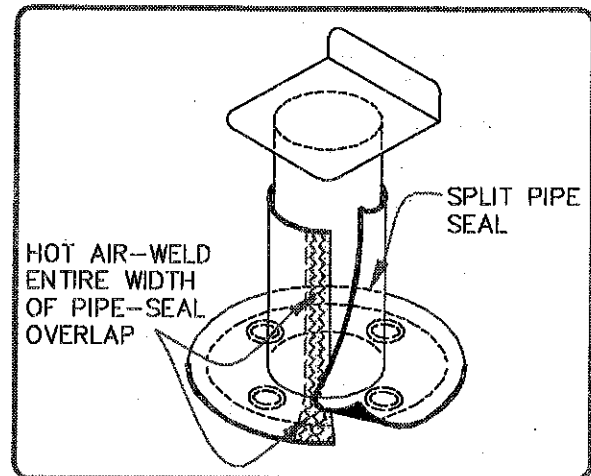
Conduit Rigid

Nominal tube size	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"	5"
Pipe O.D.	1.05	1.32	1.66	1.90	2.37	2.87	3.5	4	4.5	5.56
Step of boot used	1	1	1½	1½	2	3	3	4	4	5



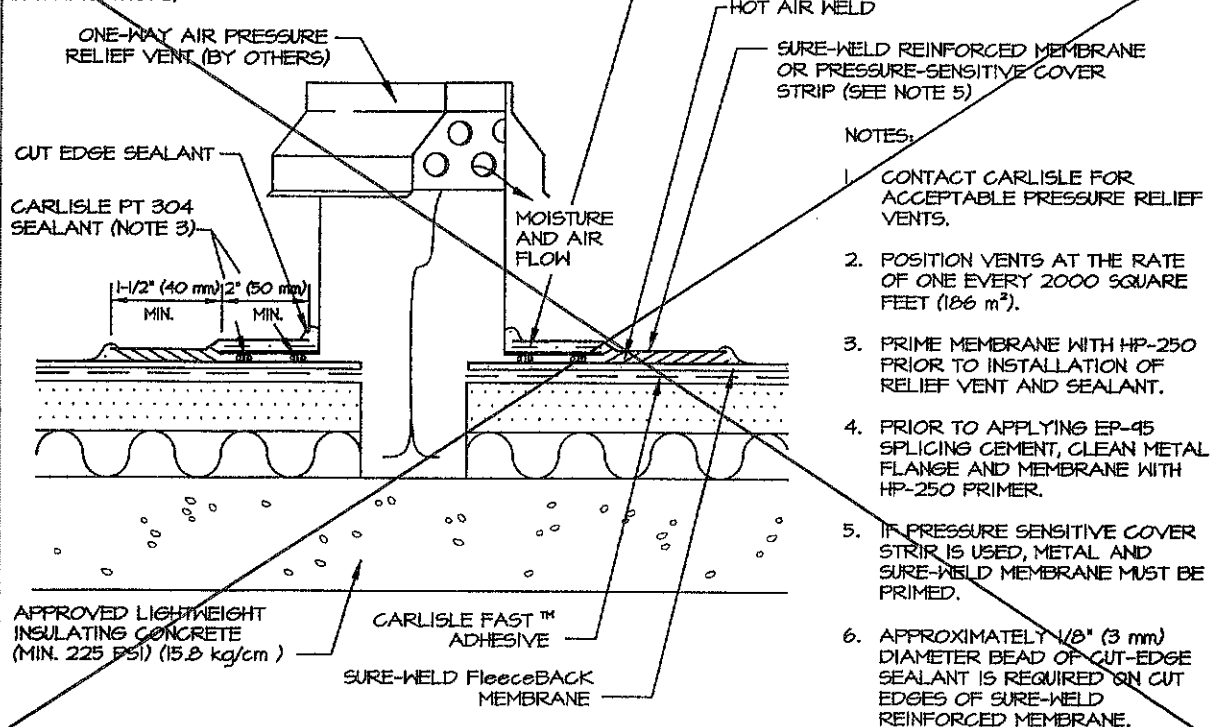
NOTES:

1. REMOVE ALL EXISTING LEAD AND FLASHING MATERIAL BEFORE INSTALLING SPLIT PIPE FLASHING.
2. TEMPERATURE OF THE PIPE PENETRATION MUST NOT EXCEED 140°F (60°C) WHEN USING PVC AND 160°F (71°C) WHEN USING TPO FLASHING.
3. INSTALL A MINIMUM OF 4 FASTENERS AND PLATES AROUND THE PIPE, EQUALLY SPACED. IF FASTENERS AND PLATES CANNOT BE INSTALLED AS SHOWN, THEY MAY ALSO BE POSITIONED OUTSIDE THE PIPE MAXIMUM 12" (305mm) O.C. AND FLASHED WITH THERMOPLASTIC REINFORCED MEMBRANE/CUT-EDGE SEALANT. REFER TO DETAIL U-8B.
4. FASTENERS AND PLATES ARE NOT REQUIRED ON ADHERED SYSTEMS UNLESS PIPE DIAMETER EXCEEDS 18" (457mm).
5. ON MECHANICALLY FASTENED SYSTEMS, HP-X FASTENERS AND PIRANHA PLATES OR HP-XTRA FASTENERS AND PIRANHA XTRA PLATES ARE REQUIRED OVER STEEL AND WOOD DECKS. ON CONCRETE DECKS, CD-10 OR HD 14-10 FASTENERS ARE USED WITH PIRANHA PLATES.
6. APPROXIMATELY 1/8" (3mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF SURE-FLEX PVC MEMBRANE.
7. REGARDLESS OF THE FIELD MEMBRANE THICKNESS, THERMOPLASTIC "T-JOINT" COVERS ARE REQUIRED OVER THE SPLICE INTERSECTIONS OF THE SPLIT PIPE SEAL.



 THERMOPLASTIC REINFORCED MEMBRANE  APPROVED INSULATION  SEE NOTE(S)	PRE-FABRICATED SPLIT PIPE SEAL For additional information, refer to Specifications	DETAIL NO. U-8D THERMOPLASTIC UNIVERSAL
--	---	---

FOR USE WHEN FLEECEBACK MEMBRANE IS ADHERED DIRECTLY OVER LIGHTWEIGHT INSULATING CONCRETE (SEE SPECIFICATIONS)

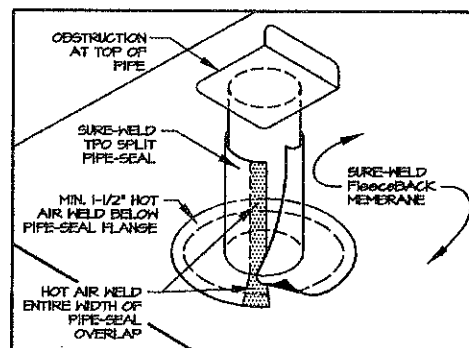
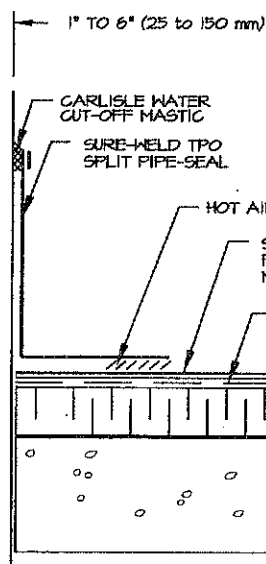
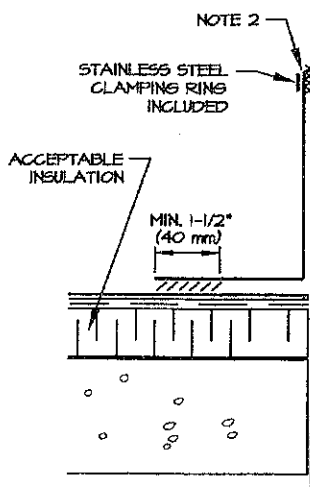


SWF-8D

ONE-WAY AIR PRESSURE RELIEF VENT

CARLISLE
Carlisle SynTec Incorporated

© 2008 CARLISLE SYNTec INCORPORATED



NOTES:

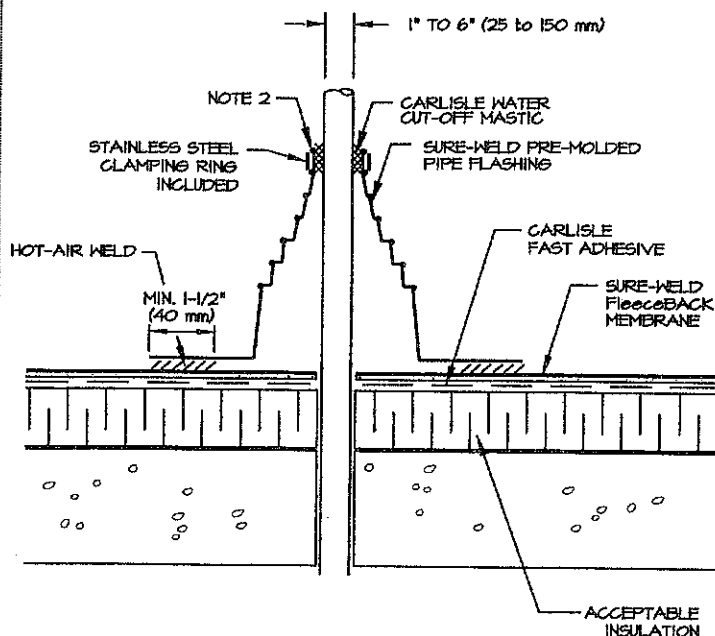
1. REMOVE ALL LEAD AND OTHER FLASHING.
2. TEMPERATURE OF PIPE MUST NOT EXCEED 120° F (49° C).
3. APPROXIMATELY 1/8\" (3 mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON EDGES OF SPLIT PIPE SEAL.

SWF-8E

SURE-WELD TPO SPLIT PIPE SEAL

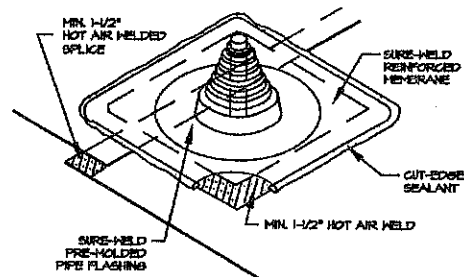
CARLISLE
Carlisle SynTec Incorporated

© 2008 CARLISLE SYNTec INCORPORATED



NOTES:

1. REMOVE ALL LEAD AND OTHER FLASHING.
2. TEMPERATURE OF PIPE MUST NOT EXCEED 120° F (49° C).
3. PIPE SEAL MUST HAVE INTACT RIB AT TOP EDGE, REGARDLESS OF PIPE DIAMETER.
4. INSTALL A SECTION OF THE SURE-WELD REINFORCED MEMBRANE OVER SPLICE INTERSECTIONS PRIOR TO INSTALLING PRE-MOLDED PIPE FLASHING.

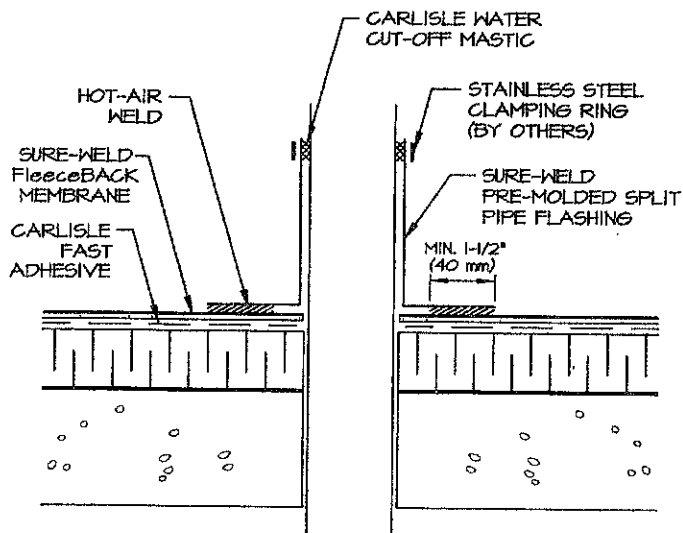


SWF-8A (Option 1)
SURE-WELD PRE-MOLDED PIPE FLASHING

CARLISLE
Carlisle SynTec Incorporated

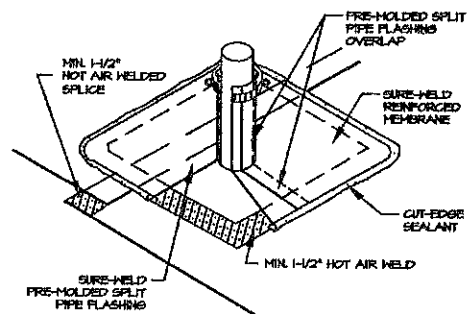
© 2006 CARLISLE SYNTec INCORPORATED

PRE-MOLDED SPLIT PIPE FLASHING WITH
VERTICAL CUT TO ALLOW FLASHING TO
WRAP AROUND PIPE PENETRATION



NOTES:

1. REMOVE ALL LEAD AND OTHER FLASHING.
2. TEMPERATURE OF PIPE MUST NOT EXCEED 120° F (49° C).



THE PRE-MOLDED SPLIT PIPE FLASHING IS MANUFACTURED WITH A VERTICAL OPENING ON THE SIDE AND IS DESIGNED TO BE WRAPPED AROUND THE VENT PIPE. WRAP THE PIPE FLASHING AROUND THE VENT PIPE AND HOT AIR WELD THE VERTICAL OVERLAP AND FLANGE AS SHOWN.

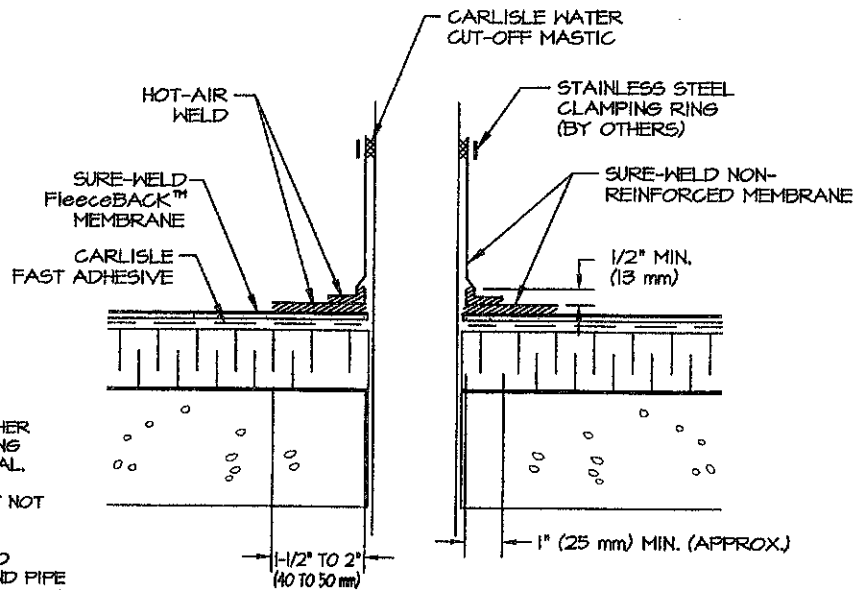
AFTER THE VERTICAL WELD IS COMPLETE, WELD THE BASE FLANGE TO THE FIELD MEMBRANE.

SWF-8A (Option 2)
SURE-WELD PRE-MOLDED SPLIT PIPE FLASHING

CARLISLE
Carlisle SynTec Incorporated

© 2006 CARLISLE SYNTec INCORPORATED

APPLY HEAT TO FLASHING
AND FORM BY HAND PRIOR
TO HOT AIR WELDING



NOTES:

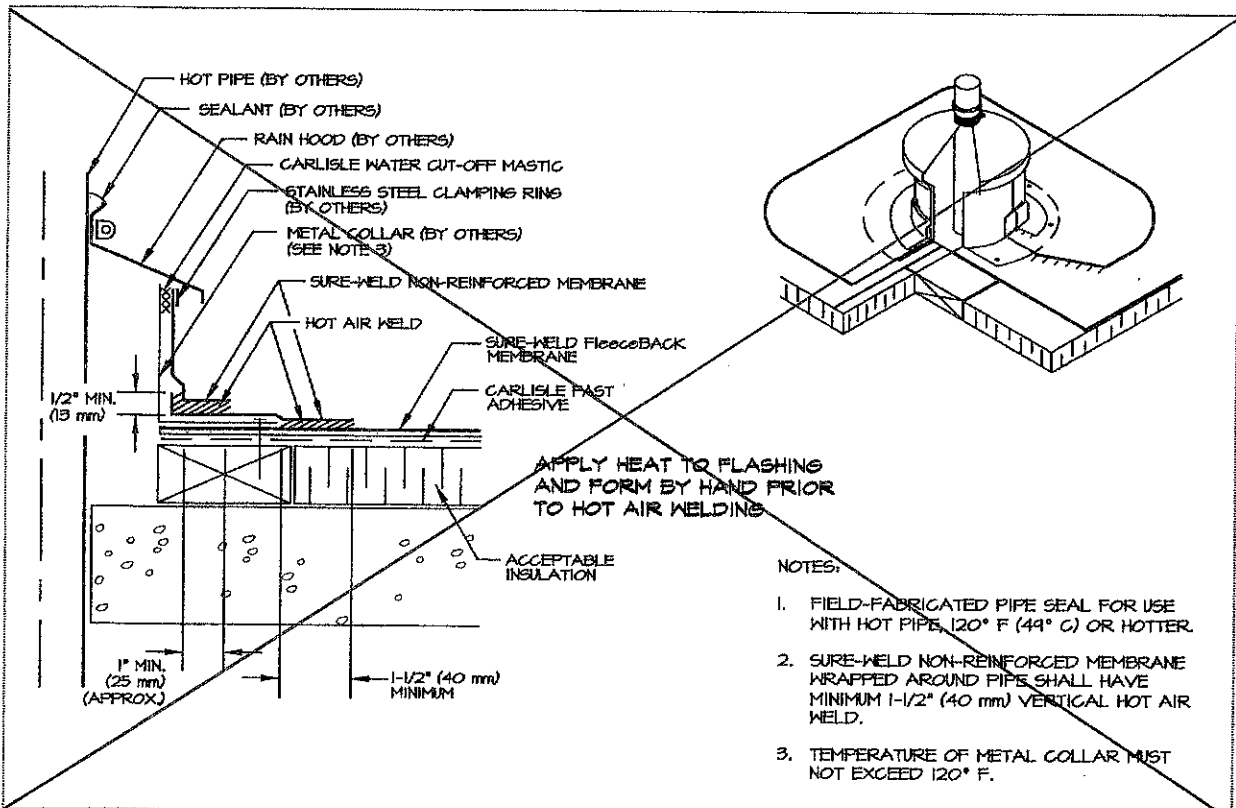
1. REMOVE ALL LEAD AND OTHER FLASHING BEFORE INSTALLING FIELD FABRICATED PIPE SEAL.
2. TEMPERATURE OF PIPE MUST NOT EXCEED 120° F (44° C).
3. SURE-WELD NON-REINFORCED MEMBRANE WRAPPED AROUND PIPE SHALL HAVE MINIMUM 1-1/2" (40 mm) VERTICAL HOT AIR WELD.

SWF-8B

FIELD FABRICATED PIPE FLASHING

CARLISLE
Carlisle SynTec Incorporated

© 2006 CARLISLE SYNTec INCORPORATED



NOTES:

1. FIELD-FABRICATED PIPE SEAL FOR USE WITH HOT PIPE, 120° F (44° C) OR HOTTER.
2. SURE-WELD NON-REINFORCED MEMBRANE WRAPPED AROUND PIPE SHALL HAVE MINIMUM 1-1/2" (40 mm) VERTICAL HOT AIR WELD.
3. TEMPERATURE OF METAL COLLAR MUST NOT EXCEED 120° F.

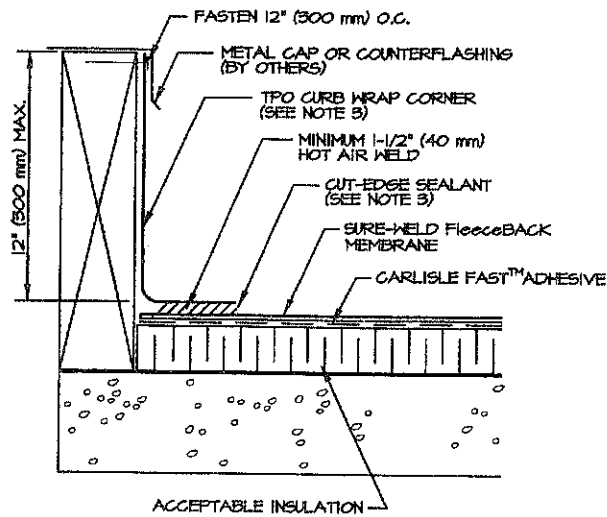
SWF-8C

FIELD FABRICATED HOT PIPE

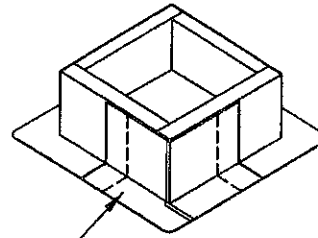
CARLISLE
Carlisle SynTec Incorporated

© 2006 CARLISLE SYNTec INCORPORATED

CREASE MEMBRANE AT ANGLE CHANGE TO
LIMIT BRIDGING TO 3/4" (19 mm) MAXIMUM



LIMITED TO 12" (300 mm) MAXIMUM FLASHING HEIGHT



USE ONE TPO CURB WRAP CORNER AT EACH CORNER OF THE CURB. HOT AIR WELD ALL SEAMS IN ACCORDANCE WITH STANDARD SPLICING METHODS. REFER TO NOTE 1.

NOTES:

1. FOUR (4) TPO CURB WRAP CORNERS WILL COMPLETELY FLASH A MAXIMUM CURB SIZE OF 6' X 6' (1.8 X 1.8 m). FOR LARGER CURBS USE THE TPO CURB WRAP CORNERS IN CONJUNCTION WITH ADDITIONAL SECTIONS OF SURE-WELD TPO MEMBRANE.
2. FLASHING MEMBRANE FASTENED APPROXIMATELY 12" ON CENTER. IF FASTENER PENETRATES METAL COUNTERFLASHING, USE NEOPRENE WASHER OR APPLY WATER CUT-OFF MASTIC UNDER COUNTERFLASHING OR CAULK FASTENER HEAD.
3. APPROXIMATELY 1/8" (3 mm) BEAD OF CUT-EDGE SEALANT IS REQUIRED ON THE EDGES OF THE TPO CURB WRAP CORNER.

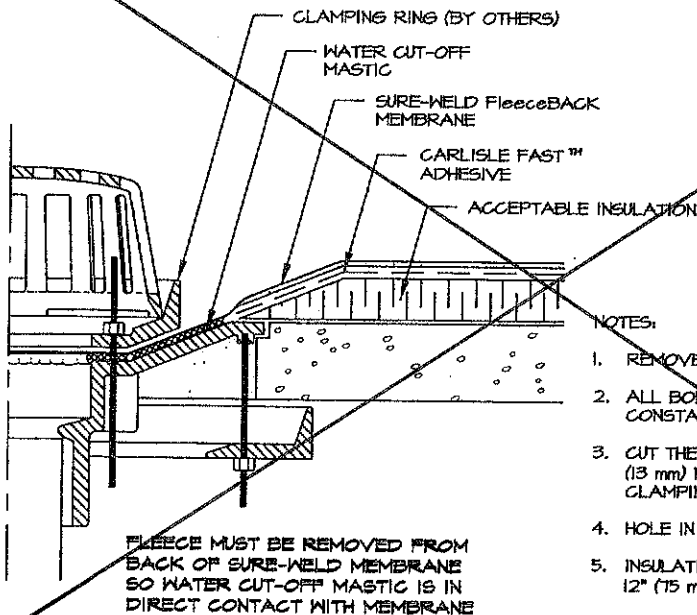
SNF-5

PRE-FABRICATED TPO CURB WRAP CORNER

CARLISLE
Carlisle SynTec Incorporated

© 2008 CARLISLE SYNTec INCORPORATED

FIELD SPLICES MUST BE LOCATED
OUTSIDE THE DRAIN SUMP



NOTES:

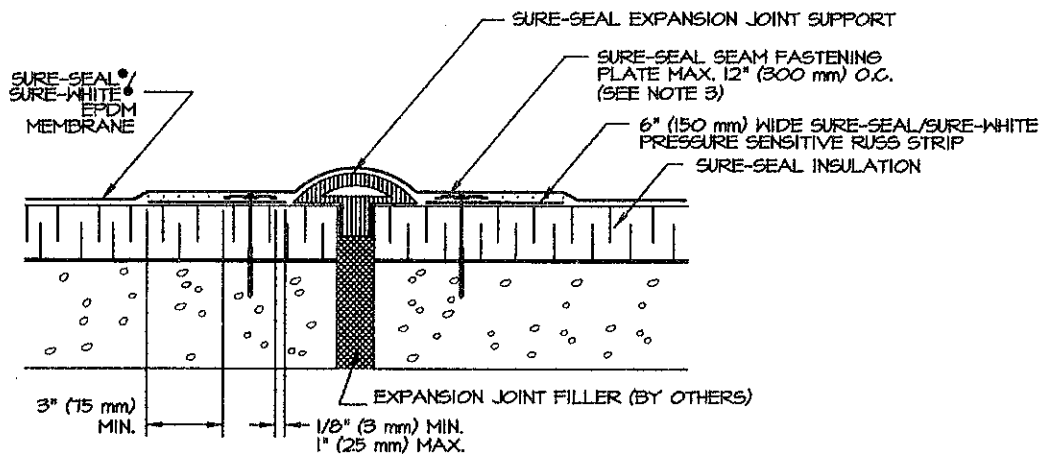
1. REMOVE ALL LEAD AND OTHER FLASHING.
2. ALL BOLTS OR CLAMPS MUST BE IN PLACE TO PROVIDE CONSTANT COMPRESSION ON WATER CUT-OFF MASTIC.
3. CUT THE MEMBRANE SO IT EXTENDS A MINIMUM OF 1/2" (13 mm) FROM THE ATTACHMENT POINTS OF THE DRAIN CLAMPING RING.
4. HOLE IN MEMBRANE MUST EXCEED SIZE OF DRAIN PIPE.
5. INSULATION TAPER SHALL NOT BE STEEPER THAN 3" IN 12" (75 mm/300 mm).
6. ROOF DRAIN SIZE AND NUMBER OF DRAINS SHALL BE IN ACCORDANCE WITH LOCAL CODES.

SNF-6A

ROOF DRAIN (CONTINUOUS FleeceBACK MEMBRANE)

CARLISLE
Carlisle SynTec Incorporated

© 2008 CARLISLE SYNTec INCORPORATED



NOTES:

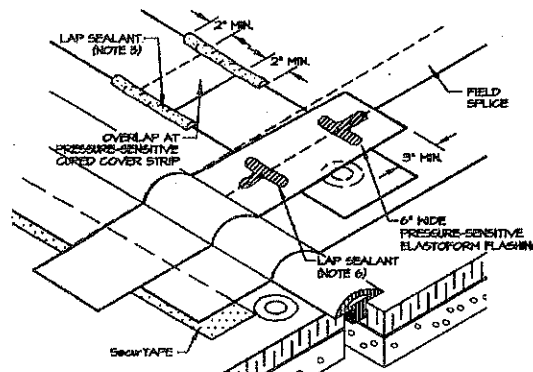
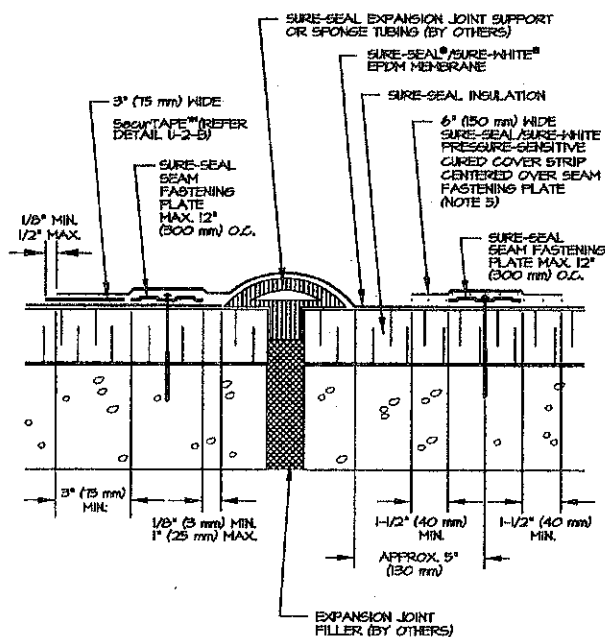
1. FOR EXPANSION JOINT INTERSECTIONS AND INTERSECTIONS BETWEEN EXPANSION JOINTS TO WALL OR EDGING, USE 3 LAYERS OF UNCURED ELASTOFORM FLASHING WITH EACH LAYER 3" (75 mm) LARGER THAN PREVIOUS LAYER IN ALL DIRECTIONS.
2. WIDTH OF JOINT SHALL BE A MINIMUM OF 3/4" (19 mm) AND SHALL NOT EXCEED 3" (75 mm).
3. POLYMER SEAM PLATES ARE REQUIRED IN LIEU OF SEAM FASTENING PLATES FOR MECHANICALLY-FASTENED ROOFING SYSTEMS OVER STEEL DECKS.
4. SURE-SEAL PRIMER MUST BE APPLIED TO BACK SIDE OF DECK MEMBRANE PRIOR TO COMPLETING SPLICE TO PRESSURE-SENSITIVE RUSS.

U-3-F

DECK TO DECK EXPANSION JOINT (RUSS)

CARLISLE
Carlisle SynTec

© 2007 CARLISLE SYNTec INCORPORATED



NOTES:

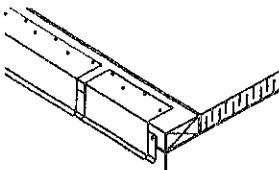
1. FOR EXPANSION JOINT INTERSECTIONS AND INTERSECTIONS BETWEEN EXPANSION JOINTS TO WALL OR EDGING, USE 3 LAYERS OF PRESSURE-SENSITIVE ELASTOFORM FLASHING WITH EACH LAYER 3" (75 mm) LARGER THAN PREVIOUS LAYER IN ALL DIRECTIONS.
2. WIDTH OF JOINT SHALL BE A MINIMUM OF 3/4" (19 mm) AND SHALL NOT EXCEED 3" (75 mm).
3. POLYMER SEAM PLATES ARE REQUIRED IN LIEU OF SEAM FASTENING PLATES FOR MECHANICALLY-FASTENED ROOFING SYSTEMS OVER STEEL DECKS.
4. SURE-SEAL PRIMER MUST BE APPLIED TO MEMBRANE SURFACE PRIOR TO APPLYING PRESSURE-SENSITIVE ELASTOFORM FLASHING, SecuTAPE OR CURED COVER STRIP.
5. LAP SEALANT MUST BE APPLIED ALONG PRESSURE-SENSITIVE CURED COVER STRIP AT OVERLAPS AS SHOWN ABOVE.
6. APPLY LAP SEALANT ALONG THE LEADING EDGE OF THE MEMBRANE SPLICE (UNDER THE 6" X 6" T-JOINT COVER) COVERING THE EXPOSED SPLICE TAPE 2" (50 mm) IN ALL DIRECTIONS FROM THE SPLICE INTERSECTION.

PS-3-F

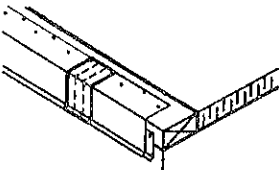
DECK TO DECK EXPANSION JOINT

CARLISLE
Carlisle SynTec

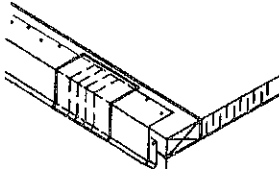
© 2008 CARLISLE SYNTec INCORPORATED



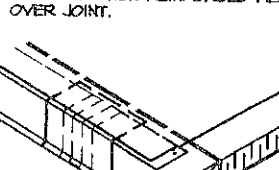
① INSTALL SURE-WELD COATED METAL WITH 1/8" - 1/4" (3 - 6 mm) JOINTS BETWEEN ADJOINING SECTIONS.



② INSTALL 2" (50 mm) WIDE DUCT TAPE OVER JOINTS IN SURE-WELD COATED METAL.



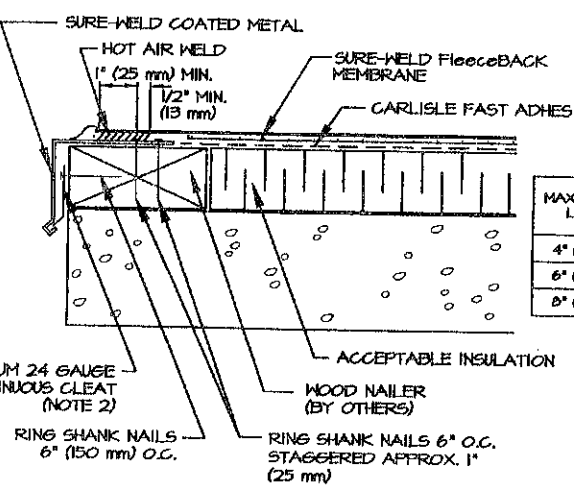
③ HEAT WELD 6" (150 mm) WIDE PIECE OF SURE-WELD NON-REINFORCED MEMBRANE OVER JOINT.



④ POSITION SURE-WELD FleeceBACK MEMBRANE AND HEAT WELD TO SURE-WELD COATED METAL A MINIMUM OF 1-1/2" (40 mm) AS SHOWN.

NOTES:

- FASTENERS USED TO ATTACH SURE-WELD COATED METAL MUST PENETRATE WOOD NAILERS A MINIMUM OF 1-1/4" (32 mm). IF 1/2" (13 mm) PLYWOOD IS USED AS THE TOP NAILER, FASTENERS MUST PENETRATE A MINIMUM OF 1-1/4" INTO NAILER BELOW.
- GAUGE OF CONTINUOUS CLEAT IS DEPENDENT ON THE FASCIA LENGTH AS SHOWN ON THE CHART BELOW.



SURE-WELD COATED METAL
HOT AIR WELD 1" (25 mm) MIN.
SURE-WELD FleeceBACK MEMBRANE
CARLISLE FAST ADHESIVE
ACCEPTABLE INSULATION
WOOD NAILER (BY OTHERS)
RING SHANK NAILS 6" O.C. STAGGERED APPROX. 1" (25 mm)

MAX FASCIA LENGTH	GAUGE OF CONT. CLEAT
4" (100 mm)	24 GAUGE (54 mm)
6" (150 mm)	22 GAUGE (75 mm)
8" (200 mm)	20 GAUGE (91 mm)

SWF-ID

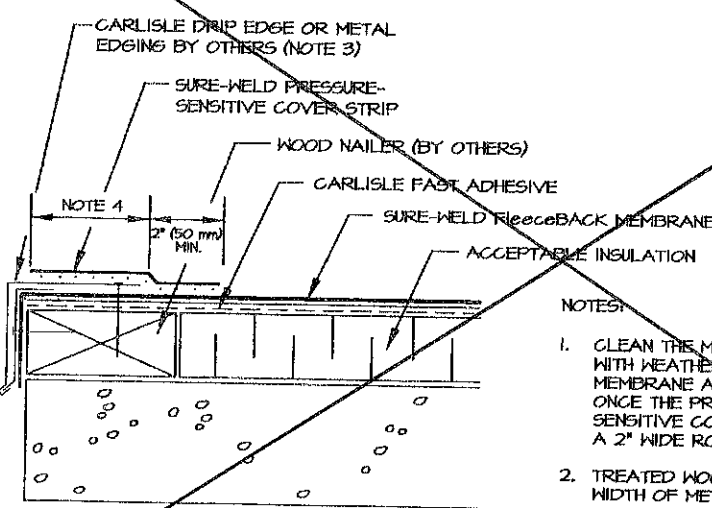
COATED METAL DRIP EDGE



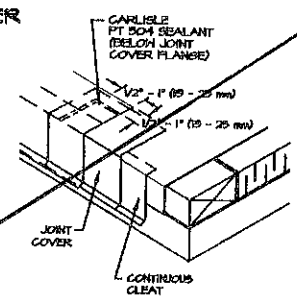
CARLISLE
Carlisle SynTec Incorporated

© 2008 CARLISLE SYNTec INCORPORATED

IN AREAS WHERE THE PRESSURE-SENSITIVE COVERSTRIP CROSSES A METAL JOINT OR MEMBRANE SEAM ("T" JOINT), USE A HOT AIR WELDER TO HEAT THE TOP SURFACE (TPO MEMBRANE) OF THE PRESSURE-SENSITIVE COVERSTRIP AND CREASE THE MATERIAL INTO THE STEP OFF.



NOTE 4: 2" (50 mm) MIN.



1/2" - 1" (13 - 25 mm)
1/2" - 1" (13 - 25 mm)
JOINT COVER
CONTINUOUS CLEAT

DETAIL NOT FOR USE WITH 20 YEAR WARRANTY PROJECTS

NOTES:

- CLEAN THE MEMBRANE (AND METAL IF APPLICABLE) WITH WEATHERED MEMBRANE CLEANER. PRIME THE MEMBRANE AND METAL FLANGE WITH HP-250 PRIMER. ONCE THE PRIMER IS PROPERLY DRIED, THE PRESSURE-SENSITIVE COVER STRIP IS APPLIED AND ROLLED USING A 2" WIDE ROLLER.
- TREATED WOOD NAILER MUST EXTEND PAST TOTAL WIDTH OF METAL FASCIA DECK FLANGE.
- FASTENERS AND FASTENER PATTERN AS RECOMMENDED BY METAL EDGE MANUFACTURER.
- DECK FLANGE MUST BE TOTALLY COVERED BY PRESSURE-SENSITIVE COVER STRIP WITH MINIMUM 2" (50 mm) COVERAGE PAST NAIL HEADS.

SWF-IE

METAL DRIP EDGE WITH PRESSURE-SENSITIVE COVER STRIP



CARLISLE
Carlisle SynTec Incorporated

© 2008 CARLISLE SYNTec INCORPORATED



List of Similar Projects

- Church of the Little Flower - Hollywood
- 7900 Red Road Building – South Miami
- City of Margate MCRA - Margate
- Patrician Condominium – Boca Raton
- 2000 Banks Road – Margate

BROWARD COUNTY LOCAL BUSINESS TAX RECEIPT

115 S. Andrews Ave., Rm. A-100, Ft. Lauderdale, FL 33301-1895 - 954-831-4000
VALID OCTOBER 1, 2017 THROUGH SEPTEMBER 30, 2018

DBA:
Business Name: INFINITY ROOFING AND SHEET METAL
INC

Receipt #: 185-1498
Business Type: ROOFING/SHEET METAL CONTRACTOR
(ROOFING CONTRACTOR)

Owner Name: JOHN B MITALA / QUAL
Business Location: 1150 SW 10 AVE #201W
POMPANO BEACH
Business Phone: 954-917-7107

Business Opened: 09/05/2006
State/County/Cert/Reg: CCC057467
Exemption Code:

Rooms Seats Employees Machines Professionals
18

For Vending Business Only						
Number of Machines:			Vending Type:			
Tax Amount	Transfer Fee	NSF Fee	Penalty	Prior Years	Collection Cost	Total Paid
54.00	0.00	0.00	0.00	0.00	0.00	54.00

THIS RECEIPT MUST BE POSTED CONSPICUOUSLY IN YOUR PLACE OF BUSINESS

THIS BECOMES A TAX RECEIPT
WHEN VALIDATED

This tax is levied for the privilege of doing business within Broward County and is non-regulatory in nature. You must meet all County and/or Municipality planning and zoning requirements. This Business Tax Receipt must be transferred when the business is sold, business name has changed or you have moved the business location. This receipt does not indicate that the business is legal or that it is in compliance with State or local laws and regulations.

Mailing Address:

INFINITY ROOFING AND SHEET METAL I.
1150 SW 10 AVE #201W
POMPANO BEACH, FL 33069

Receipt #1CP-16-00013438
Paid 07/17/2017 54.00

2017 - 2018



**CITY OF POMPANO BEACH
BUSINESS TAX RECEIPT
FISCAL YEAR: 2017 - 2018**

THIS IS NOT A BILL

Business Tax Receipt Valid from: October 1, 2017 through September 30, 2018

9/19/2017

4448565
INFINITY ROOFING AND SHEET METAL INC
1150 SW 10 AV 201W

POMPANO BEACH FL 33069

THIS IS YOUR BUSINESS TAX RECEIPT. PLEASE POST IN A CONSPICUOUS PLACE AT THE
BUSINESS LOCATION.

BUSINESS OWNER: INFINITY ROOFING AND SHEET
BUSINESS LOCATION: 1150 SW 10 AV 201W POMPANO BEACH FL

RECEIPT NO: 18-00073728
CLASSIFICATION
CONTRACTOR SPEC-ROOFING (R)

NOTICE: A NEW APPLICATION MUST BE FILED IF THE BUSINESS NAME, OWNERSHIP OR ADDRESS IS CHANGED. THE ISSUANCE OF A BUSINESS TAX RECEIPT SHALL NOT BE DEEMED A WAIVER OF ANY PROVISION OF THE CITY CODE NOR SHALL THE ISSUANCE OF A BUSINESS TAX RECEIPT BE CONSTRUED TO BE A JUDGEMENT OF THE CITY AS TO THE COMPETENCE OF THE APPLICANT TO TRANSACT BUSINESS. THIS DOCUMENT CANNOT BE ALTERED.

BUSINESS TAX RECEIPTS EXPIRE SEPTEMBER 30TH OF EACH YEAR



STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD
1940 NORTH MONROE STREET
TALLAHASSEE FL 32399-0783

(850) 487-1395

MITALA, JOHN B
INFINITY ROOFING AND SHEET METAL INC
11874 ISLAND LAKES LN.
BOCA RATON FL 33498

Congratulations! With this license you become one of the nearly one million Floridians licensed by the Department of Business and Professional Regulation. Our professionals and businesses range from architects to yacht brokers, from boxers to barbeque restaurants, and they keep Florida's economy strong.

Every day we work to improve the way we do business in order to serve you better. For information about our services, please log onto www.myfloridalicense.com. There you can find more information about our divisions and the regulations that impact you, subscribe to department newsletters and learn more about the Department's initiatives.

Our mission at the Department is: License Efficiently, Regulate Fairly. We constantly strive to serve you better so that you can serve your customers. Thank you for doing business in Florida, and congratulations on your new license!



STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND
PROFESSIONAL REGULATION

CCC057467

ISSUED: 06/02/2016

CERTIFIED ROOFING CONTRACTOR
MITALA, JOHN B
INFINITY ROOFING AND SHEET METAL I

IS CERTIFIED under the provisions of Ch. 489 FS.
Expiration date : AUG 31, 2018 L1606020001158

DETACH HERE

RICK SCOTT, GOVERNOR

KEN LAWSON, SECRETARY

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
CONSTRUCTION INDUSTRY LICENSING BOARD

LICENSE NUMBER	
CCC057467	

The ROOFING CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2018

MITALA, JOHN B
INFINITY ROOFING AND SHEET METAL INC
1150 SW 10TH AVE
STE 201W
POMPANO BEACH FL 33069



ISSUED: 06/02/2016

DISPLAY AS REQUIRED BY LAW

SEQ # L1606020001158



- ◆ COMMERCIAL INSURANCE
- ◆ OSHA COMPLIANCE
- ◆ CONSTRUCTION BONDS
- ◆ EMPLOYEE LEASING
- ◆ PAYROLL SERVICES
- ◆ LIFE & HEALTH
- ◆ GROUP BENEFITS
- ◆ HOMEOWNERS • AUTO
- ◆ YACHT • MARINE
- ◆ HR CONSULTING

February 7, 2017

RE: Letter of Bondability

Infinity Roofing & Sheet Metal, Inc.
1150 SW 10th Ave, Suite #201W
Pompano Beach, FL 33069-1326

To Whom It May Concern:

As the surety advisor and authorized State of Florida surety agent for Infinity Roofing & Sheet Metal, Inc. we are pleased to provide this letter of bondability. The surety carrier for Infinity Roofing & Sheet Metal, Inc. is Crum & Forster/United States Fire Insurance Company rated by A.M. Best as A (Excellent) XII and is an approved surety on the US Government Treasury List.

As a result of the very strong financial position and exceptional experience, we are pleased to be in a position to secure Performance & Payment Bonds, with a single project up to \$2,500,000 and an aggregate bonding program of \$8,000,000. As is standard practice, each bond will be underwritten according to standard surety guidelines.

The financial stability and exceptional management team of Infinity Roofing & Sheet Metal, Inc. elevates them to the top of the roofing industry, which has enabled the Furman Agency to extend the high level of surety credit referenced above.

Sincerely,

Robert P Foote, CPCU, ARM, AIM, CRIS
State of Florida Authorized Surety Agent
President, Furman Insurance
rob@furmaninsurance.com

RPF/cs

