ADDENDUM NO. 1

Gregg County Courthouse
Roofing Project
Phase 1
Bid #2017-703
CCG 1-132-1

February 20, 2017

General

Item No. 1: Bid due date and time remains February 24, 2017 at 2:00 p.m., local time.

Item No. 2: Pre-bid meeting minutes and sign-in sheet attached, Attachment #1.

Item No. 3: Add to scope of work for Area N: Prep, prime, and paint two (2) coats – roof hatch cover.

Item No. 4: Tear-off with ACM abatement procedures for field / flashing Areas Q and R. ACM abatement procedures for flashing of Areas S. See attached ACM test results, Attachment #2.

Specifications

Item No. 5: Section 00 31 00, Paragraph 1.2.C. – Delete "Owner will provide electrical disconnects and reconnects as needed." Contractor to provide qualified licensed electrical contractor for all disconnects and reconnects.

Drawings

Item No. 6: Sheet AD-102 – Delete reference to Note 3 at the scupper location, Area R.

Questions and Answers

Item No. 7: Questions:

1. Do you have the thickness of existing roof insulation for Areas D and N from the cores that Steven and Todd took with you last year?

   Answer: No. Tapered foam glass roof insulation exists over the structural decks.

2. It is our opinion that the HVAC equipment on the roof Area P will need to be removed to install roofing below as specified and to cut the hole for the new roof drain. I know that the plans and specs list in multiple places to raise equipment as needed to reach minimum 8" flashing heights, but this is not a low flashing height issue. The unit is less than 10" above the roof, and this is not enough room to work underneath to remove

and replace the single-ply membrane. The unit is also only a few feet from the wall to the east and does not provide enough clearance to get a concrete coring tool in place to cut the deck for the new roof drain. I can get a mechanical contractor to provide a quote to remove and reinstall the unit after roofing is completed and include this in our bid, but I feel like all bidders should be given clear direction on this so that everyone is bidding it the same. We also need to know from Harry if this unit can be disconnected and what the restrictions are (must be done at night or on weekends only, etc).

Answer: The unit may be removed and reset with the following restrictions without exception. Disconnect after 5:00 p.m. on Friday and fully functional by 7:00 a.m. Monday morning. No exceptions.

3. It is stated in specification Section 00 31 00, 1.2.C that the owner will provide electrical disconnects and reconnects as needed. If any modifications to electric service lines are required, will the owner provide this as well, or do we need to get a third party electrical contractor to handle this job? I do not know for sure that this will be needed, but maybe if the HVAC unit on roof Area P is removed. Just thought this should be clarified.

   Answer: Contractor to provide qualified licensed electrical contractor for all disconnects and reconnects required plus any other electrical work.

4. Another item is on AD-102, the note at the existing scupper on roof Area R is noted as #3, but this refers to pvc condensate line. The detail for these scuppers (27/A-504) does not accurately reflect the existing condition where the opening is taller than needed. Do these existing openings need to be partially filled in with masonry to reduce the size?

   Answer: Yes, partially fill-in openings to correct size.

5. I do not find on the plans where the fixed ladder with walkthrough (54/A-510) is required. I assume that this is to be used at the end of the elevated walkway over the HVAC unit on roof Area P, to climb down to the roof level from the platform. This is currently shown as detail 52/A-509, which is an over-parapet style ladder.

   Answer: Utilize Detail 54/A-510 at Area P for access from elevated walkway to roof level at Area P.

6. There is also no note shown on A-102 where the ladder is required to climb between roof Area P and N, near the roof hatch.

   Answer: Locate ships ladder between roof hatch and tunnelway.

7. On the new overflow scuppers required to be put through the parapet walls at various locations, will round openings be acceptable, or are square / rectangular openings required?

Answer: Square or rectangular openings only.

8. Has any asbestos containing materials testing been performed for any of the existing materials, or is it known that none exists?

   Answer: See attached ACM test results, Attachment #2.

9. Does the County anticipate that the contractors will access the roofs from inside the building during construction, in the same manner as we did during the walkthrough yesterday? If so, what are the hours / days of access?

   Answer: Plan on outside access with a stair tower or other outside access means to the roof areas.

10. Section 05 51 33.13 and Section 05 51 33.16 both specify the new aluminum ladders to be installed at various locations. Part 2.2.B, 8 or 6 lists the available finishes, but we need to know which finish is required for this project.

    Answer: Anodized finish.

11. Section 05 51 33.13, Part 2.2.B.6 states to provide a fall prevention system as a component for the fixed ladders, but the detail drawings on A-509 and A-510 do not show this component. Is the fall prevention system required?

    Answer: Cages are required for wall ladders when installations are in excess of 20' in height.

12. Section 05 51 33.13, Part 2.2,B.7 states to provide floor brackets on the fixed ladders, but the detail drawings do not show floor brackets. I assume that these ladders are intended to NOT penetrate the roof system and only be supported by the wall mounting brackets. Please clarify. It is clear that the ships ladder to the roof hatch on Area D will have floor brackets, and that the crossover ladder over the tunnel way will have non-penetrating supports.

    Answer: Correct. Only the ships ladder to the roof hatch on Area D will have floor brackets. All other ladders are wall mounted only.

13. Section 07 41 00, Part 2.2.A. indicates that the metal wall panels on Area N-2 are to be replaced with new 24-ga. galvalume R-panels. However, details 24 and 25 / A-504 indicate that the existing wall panels are to remain. Please clarify which is correct.

    Answer: Existing wall panels are to remain. Trim and refasten as required.

14. Is there a requirement to replace the sealant between stone coping joints? I do not see specific instructions in the plans and specs, but I think this was mentioned on the roof during the walkthrough. Please clarify.

Answer: Not at this time.

15. Do you have the plumbers name in Longview that looked at the plumbing?

Answer: Pither Plumbing Co, (903) 753-3974.

16. Do you have the core information on the roofs?

Answer: Yes, core information is as follows:

Roof Area	Roof Core
Area D	Gravel BUR Tapered Foam Glass Insulation Structural Concrete
Area D-1	Aluminum Coated BUR ½" Wood Fiber Insulation Structural Concrete
Area N	Granule Surface Modified ½" Wood Fiber Insulation Tapered Foam Glass Insulation Gypsum Decking
Area N-1	Granule Surface Modified Gypsum Decking
Area N-2	Granule Surface Modified ½" Wood Fiber Insulation Gypsum Decking
Area O	Prefinished Metal R-Panel Open Framing
Area P	Fully Adhered EPDM Structural Concrete
Areas Q, R, & S	Gravel BUR 3" Foam Glass Insulation Base Sheet Gypsum Decking

Substitution Requests

Item No. 8: Curtis-McKinley Roofing submitted a substitution request for the adhered PVC membrane specified in Section 07 54 19. The substitution request is for Sika Sarnafil G410 membrane; note attached product data sheet. This substitution request is approved; see Attachment #3.

Item No. 9: CSL Materials submitted a substitution request for a Carlisle Sure-Flex 80-mil PVC roofing system. This substitution request is denied; see Attachment #4.

End of Addendum 1.

Pre-Bid Meeting Minutes

February 13, 2016 @ 1:00 pm

PROJECT: Gregg County Courthouse Roofing Project Phase 1
Longview, TX
Bid #2017-703

OWNER REPRESENTATIVE: Harry McMahan

CCG PROJECT NUMBER: 1-132-1

ATTENDEES

Harry McMahon, Gregg County
Matt Jones, LMK Roofing
David McKinley, Curtis-McKinley Roofing
Robert Gustin, Star Roofing & Sheet Metal
Eddie Laws, Texas Roof Management
Thomas Myers, Advanced Roofing
Phillip Jordan, Clean Cut Roofing
Jim Wilford, Clean Cut Roofing
Brittany Fanara, Nations Roof
Vickie Crenshaw, Crenshaw Consulting Group, LLC

DESCRIPTION OF WORK

✓ Roof Removal and Replacement, Gregg County Courthouse, Longview, TX.

➢ Roof Area D: Work consists of removal of existing roof to existing concrete deck for application of new temporary roof, lightweight insulating concrete, and installation of new SBS modified bitumen roof membrane system.

Inspect all concrete deck areas and related penetrations for deficiencies. Repair all areas using appropriate compatible materials as approved by the manufacturer.

Remove all metal roof panels and related structural supports. Remove all brick knee walls down to concrete deck/cinder block walls.

- Install new flat metal panels to existing all-horizontal bar network at wall-deck transitions.
- Install new rigid insulation and coverboard as specified to level with existing concrete deck.

Remove antenna tower or allow tower to remain in place as directed by the Owner.

Install new roof system over existing concrete deck and prepared substrate.

- New modified bitumen base ply / temporary roof will be fully adhered to the existing concrete deck and coverboard areas as specified.
- New lightweight insulating concrete system will be placed over base ply / temporary roof as specified.
- New fiberglass base sheet will be mechanically fastened as specified over lightweight insulating concrete.
- New SBS modified bitumen base ply will be torch applied to base sheet as specified.
- New SBS modified bitumen cap sheet will be torch applied to base ply as specified.
- New SBS modified bitumen flashing membranes will be applied at all walls, curbs and roof drains as specified.

➢ Roof Area D-1: Work consists of removal of existing stairwell extending to Roof Area D.

Remove all brick knee walls down to concrete deck/cinder block walls.

- Install new structural supports across the width dimension on 4 foot centers as shown in the plans and details.
- Install new Type F roof deck panels to new structural supports.
- Install new rigid insulation and coverboard as specified to level with existing concrete deck.
- New modified bitumen base ply / temporary roof will be fully adhered to the existing concrete deck and coverboard areas as specified.
- Install new Ships Ladder from floor of Area D-1 to new roof hatch.

Existing roofing and flashing materials in Area D-1 will remain in place unless otherwise directed by Owner and D/P.

➢ Roof Areas N & N-1 (except Area N & N-1Tunnel-way), N-2, Q, R & S: Work consists of removal of existing roof to existing gypsum deck for application of new lightweight insulating concrete, and installation of new SBS modified bitumen roof membrane system.

Inspect all gypsum deck areas and related penetrations for deficiencies. Repair all areas using appropriate compatible materials as approved by the manufacturer.

Install new roof system over existing gypsum deck and prepared substrate.

- New fiberglass base sheet will be mechanically fastened as specified over existing gypsum deck as specified.
- New modified bitumen base ply / temporary roof will be fully adhered to the base sheet as specified.
- New lightweight insulating concrete system will be placed over base ply / temporary roof as specified.
- New fiberglass base sheet will be mechanically fastened as specified over lightweight insulating concrete.
- New SBS modified bitumen base ply will be torch applied to base sheet as specified.

- New SBS modified bitumen cap sheet will be torch applied to base ply as specified.
- New SBS modified bitumen flashing membranes will be applied at all walls, curbs and roof drains as specified.

➢ Roof Areas N & N-1 Tunnel-way: Work consists of preparation of existing roof for application of new lightweight insulating concrete, and installation of new SBS modified bitumen roof membrane system.

Existing foil-faced modified bitumen roof membrane at Area N Tunnel-way will serve as temporary roof and substrate for installation of new SBS modified bitumen membrane system. Inspect all membrane areas and related penetrations for deficiencies. Repair all areas using appropriate compatible materials as approved by the manufacturer.

All existing foil-faced SBS modified bitumen roof membrane will remain in place prior to and during installation of the new lightweight insulating concrete insulation system. All such foil surfacing on existing membrane exposed above the lightweight insulating concrete system after installation will be completely removed.

- New SBS modified bitumen base ply will be torch applied to existing roof membrane, prepared as specified.
- New SBS foil-faced modified bitumen cap sheet will be torch applied base ply as specified.
- New SBS modified bitumen flashing membranes will be applied at all walls, curbs and roof drains as specified.

➢ Roof Area O: Existing metal roof panel system and insulation will be removed.

New metal roof panels and insulation will be installed to areas with new related trims, counterflashing, gutters and downspouts as specified.

➢ Roof Area P: Work consists of removal of existing roof to existing concrete deck for of new PVC single-ply roof membrane system.

Install new roof system over existing concrete deck and prepared substrate.

- New drain and associated piping plus accessories installed where indicated on roof plan.
- New PVC single-ply roof membrane adhered to the concrete deck as specified.
- New PVC flashing membranes will be applied at all walls, curbs, and roof drain as specified.
- New fluid-applied membrane will be applied to all HVAC support legs as specified.

Work Schedule

- ✓ Work shall commence upon contract execution, approved submittals, and issuance of Notice to Proceed, and completed within 90 calendar days.
- ✓ Work is to be performed during normal operating hours unless otherwise agreed upon. After hours and weekend work permitted with advance notice and when approved by Harry McMahon.
- ✓ Some interruption of work shall be expected when court is in session.

General Project Information

- ✓ Owner will award a contract for the reroof of the building.
- ✓ Owner will provide site access, electrical power, and water during construction.
- ✓ Contractor shall verify field measurements as indicated on project drawings.
- ✓ Only those materials, equipment, and systems that are described in this set of documents are approved without a request for substitution.
- ✓ Do not use materials and equipment removed from existing premises, except as specifically identified or allowed by the Contract Documents. Substitutions to be submitted for prior approval.
- ✓ Interior protection.
- ✓ Lightning protection.
- ✓ Ladder Installation
- ✓ Roof Drain Replacement

Other Information

- ✓ Proposals due February 24, 2017 at 2:00 pm.
- ✓ Bid Bond.
- ✓ Performance and Payment Bonds.
- ✓ Building Permit.
- ✓ Work to begin in Area S as a priority. Work may begin in more than one area.
- ✓ Following the meeting, parties toured all roof areas, performed a walk-through of the building interior, and toured ground level access.

Meeting adjourned.

PRE BID MEETING SIGN IN SHEET

Project Name: Gregg County Courthouse Roofing Project Phase 1
Project Location: 101 East Methvin, Longview, Texas 75601
CCG# 1-132-1
Date: 02/13/2017 **Time: 1:00 PM**

Crenshaw Consulting Group LLC
roof consulting & design

COMPANY	CONTACT NAME	ADDRESS	PHONE	EMAIL
Crenshaw	Vickie Crenshaw	616 S. Cypress Coppell, TX		vcrenshaw@crenshawcg.com
LMK	Matt Jones	188 Lamb Road, Gilmer, TX	903-725-3422	LMKRoofing@aol.com
LMK	Matt	188 Lamb Rd., Gilmer, TX	903-725-3422	lmk roofing@aol.com
CURTIS MCKINLEY	DAVID MCKINLEY	PO Box 3165 Longview TX	903 757-7402	davidmck@curtismckinley.com
Star Roofing & sheet metal	Robert Gustin	2326 S. Peachtree Rd Balch Springs, TX 75180	214-243-7012	rgustin@starroofingandsheetmetal.com
Texas Roof Management	Eddie Laws	728 Lingco Dr Richardson TX	972 620 4983	eddie@texasroof.com
Thomas Myers ADVANCED ROOFING		7724 US. Hwy 259 N Longview TX 75604	903-237-8866	thomas@advancedroofingservices.com
Clean Cut Roofing	Philip Vorsan Jim Wilford	1905 E. US Hwy 80 White Oak, TX. 75693	903-291-0848	philip@cleancutroofing.com jim@cleancutroofing.com
NATIONS ROOF	BRITTANY FANARA	2914 LAWING LN. ROWLETT, TX 75088	214-557-6911	bfanara@nationsroof.com

PLM Summary Report

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

NVLAP Lab Code 102056-0
TDSHS License No. 30-0084

Client : Crenshaw Consulting Group
Project : Gregg County Courthouse, 101 East Methvin, Longview, TX
Project # : 4-294-1
Identification : Asbestos, Bulk Sample Analysis
Test Method : Polarized Light Microscopy / Dispersion Staining (PLM/DS)
EPA Method 600 / R-93 / 116

Lab Job No. : 16B-00940
Report Date : 02/01/2016
Sample Date :01/21/2016

On 1/25/2016, thirty two (32) bulk material samples were submitted by Vickie Crenshaw of Crenshaw Consulting Group for asbestos analysis by PLM/DS. The PLM Detail Report is attached; additional information may be found therein. The results are summarized below:

Sample Number	Client Sample Description / Location	Asbestos Content
1	Field, Roof Area A	None Detected - Roofing Material None Detected - Roofing Tars 30% Chrysotile - Roofing Felts
2	Flashing, Roof Area A	5% Chrysotile - Flashing Material None Detected - Roofing Material None Detected - Roofing Tars 30% Chrysotile - Roofing Felts
3	Field, Roof Area B	None Detected - Roofing Materials None Detected - Roofing Tars 30% Chrysotile - Roofing Felts
4	Flashing, Roof Area B	5% Chrysotile - Flashing Material None Detected - Roofing Material None Detected - Roofing Tars 30% Chrysotile - Roofing Felts None Detected - Underlayment
5	Field, Roof Area D	None Detected - Roofing Tars None Detected - Roofing Felts
6	Flashing, Roof Area D	None Detected - Roofing Tars None Detected - Roofing Felts
7	Field, Roof Area E	None Detected - Flashing Material None Detected - Roofing Tars None Detected - Roofing Felts
8	Flashing, Roof Area E	5% Chrysotile - Flashing Material 1 None Detected - Roofing Material None Detected - Flashing Material 2
9	Field, Roof Area D-1	10% Chrysotile - Flashing Material None Detected - Roofing Tars None Detected - Roofing Felts
10	Flashing, Roof Area D-1	5% Chrysotile - Silver Paint 5% Chrysotile - Flashing Material None Detected - Roofing Tars None Detected - Roofing Felts

PLM Summary Report

2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

NVLAP Lab Code 102056-0
TDSHS License No. 30-0084

Client : Crenshaw Consulting Group
Project : Gregg County Courthouse, 101 East Methvin, Longview, TX
Project # : 4-294-1
Identification : Asbestos, Bulk Sample Analysis
Test Method : Polarized Light Microscopy / Dispersion Staining (PLM/DS)
EPA Method 600 / R-93 / 116

Lab Job No. : 16B-00940
Report Date : 02/01/2016
Sample Date :01/21/2016

On 1/25/2016, thirty two (32) bulk material samples were submitted by Vickie Crenshaw of Crenshaw Consulting Group for asbestos analysis by PLM/DS. The PLM Detail Report is attached; additional information may be found therein. The results are summarized below:

Sample Number	Client Sample Description / Location	Asbestos Content
11	Field, Roof Area F	None Detected - Roofing Tars None Detected - Roofing Felts
12	Flashing, Roof Area F	30% Chrysotile - Top Roofing Felt None Detected - Roofing Material None Detected - Cotton Wrap None Detected - Roofing Tars None Detected - Bottom Roofing Felts
13	Field, Roof Area I	None Detected - Roofing Tars None Detected - Roofing Felts
14	Flashing, Roof Area I	None Detected - Sealant 30% Chrysotile - Top Roofing Felt None Detected - Roofing Material None Detected - Roofing Tars None Detected - Bottom Roofing Felts
15	Field, Roof Area J	None Detected - Sand None Detected - Roofing Material 1 None Detected - Roofing Material 2 None Detected - Roofing Felts 10% Chrysotile - Roofing Material 3
16	Flashing, Roof Area J	None Detected - Metal Flashing None Detected - Roofing Material 1 None Detected - Roofing Felts None Detected - Roofing Material 2
17	Field, Roof Area N	None Detected - Sand Layer None Detected - Roof Membrane None Detected - Roofing Tars None Detected - Roofing Felt None Detected - Underlayment
18	Flashing, Roof Area N	None Detected - Sand Layers None Detected - Roof Membranes None Detected - Roofing Tars None Detected - Roofing Felts

PLM Summary Report

2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

NVLAP Lab Code 102056-0
TDSHS License No. 30-0084

Client : Crenshaw Consulting Group
Project : Gregg County Courthouse, 101 East Methvin, Longview, TX
Project # : 4-294-1
Identification : Asbestos, Bulk Sample Analysis
Test Method : Polarized Light Microscopy / Dispersion Staining (PLM/DS)
EPA Method 600 / R-93 / 116

Lab Job No. : 16B-00940
Report Date : 02/01/2016
Sample Date :01/21/2016

On 1/25/2016, thirty two (32) bulk material samples were submitted by Vickie Crenshaw of Crenshaw Consulting Group for asbestos analysis by PLM/DS. The PLM Detail Report is attached; additional information may be found therein. The results are summarized below:

Sample Number	Client Sample Description / Location	Asbestos Content
19	Field, Roof Area N-1	None Detected - Sand Layer None Detected - Roofing Material None Detected - Roof Membrane None Detected - Roofing Tars None Detected - Roofing Felts None Detected - Underlayment
20	Flashing, Roof Area N-1	None Detected - Metal Flashing None Detected - Roofing Material None Detected - Roof Membrane None Detected - Roofing Tars None Detected - Roofing Felt None Detected - Underlayment
21	Field, Roof Area P	None Detected - Rubber Membrane None Detected - Tan Adhesive
22	Flashing, Roof Area P	None Detected - Rubber Membrane None Detected - Tan Adhesive
23	Field, Roof Area M	None Detected - Roofing Material None Detected - Roof Membrane None Detected - Roofing Tars None Detected - Roofing Felts None Detected - Paper Facing
24	Flashing, Roof Area M	None Detected - Roofing Tars 30% Chrysotile - Top Roofing Felt None Detected - Roof Membrane None Detected - Roofing Felts
25	Field, Roof Area Q	30% Chrysotile - Top Roofing Felt None Detected - Roofing Tars None Detected - Roofing Felts
26	Flashing, Roof Area Q	None Detected - Roofing Tars None Detected - Roofing Felts None Detected - Paper Facing

PLM Summary Report

2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

NVLAP Lab Code 102056-0
TDSHS License No. 30-0084

Client :	Crenshaw Consulting Group	Lab Job No. :	16B-00940
Project :	Gregg County Courthouse, 101 East Methvin, Longview, TX	Report Date :	02/01/2016
Project # :	4-294-1	Sample Date :	01/21/2016
Identification :	Asbestos, Bulk Sample Analysis		
Test Method :	Polarized Light Microscopy / Dispersion Staining (PLM/DS) EPA Method 600 / R-93 / 116		

On 1/25/2016, thirty two (32) bulk material samples were submitted by Vickie Crenshaw of Crenshaw Consulting Group for asbestos analysis by PLM/DS. The PLM Detail Report is attached; additional information may be found therein. The results are summarized below:

Sample Number	Client Sample Description / Location	Asbestos Content
27	Field, Roof Area R	30% Chrysotile - Top Roofing Felt None Detected - Roofing Tars None Detected - Roofing Felts
28	Flashing, Roof Area R	None Detected - Roofing Tars None Detected - Top Roofing Felts 30% Chrysotile - Bottom Roofing Felt
29	Field, Roof Area S	None Detected - Roofing Tars None Detected - Roofing Felts
30	Flashing, Roof Area S	None Detected - Roofing Tars None Detected - Cotton Wrap 30% Chrysotile - Roofing Felts
31	Field, Roof Area K	None Detected - Roofing Tars None Detected - Roofing Felt
32	Flashing, Roof Area K	None Detected - Roofing Tars None Detected - Roofing Felts 10% Chrysotile - Roofing Material

NVLAP LAB #102056-0

Analyst(s): Brian R. Schmidt, Bruce Crabb, Willie Pruitt

Lab Manager : Heather Lopez Approved Signatory : Heather Lopez

Lab Director : Bruce Crabb Approved Signatory : Bruce Crabb

Thank you for choosing Moody Labs

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

PLM Detail Report

Supplement to PLM Summary Report

NVLAP Lab Code 102056-0
TDSHS License No. 30-0084

Client : Crenshaw Consulting Group
Project : Gregg County Courthouse, 101 East Methvin, Longview, TX
Project # : 4-294-1

Lab Job No. : 16B-00940
Report Date : 02/01/2016

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
1	Sand (Green/Tan/Brown)	2%	Sand	100%	02/01	BS
	Roofing Material (Black)	3%	Glass Wool Fibers	25%		
			Calcite / Tar Binders	75%		
	Roofing Tars (Black)	55%	Tar Binders	100%		
	Roofing Felts (Black)	40%	Chrysotile	30%		
			Cellulose Fibers	40%		
			Tar Binders	30%		
2	Flashing Material (Black)	5%	Chrysotile	5%	02/01	BS
			Calcite	30%		
			Tar Binders	65%		
	Sand (Black)	5%	Sand	100%		
	Roofing Material (Black)	10%	Glass Wool Fibers	25%		
			Calcite / Tar Binders	75%		
	Roofing Tars (Black)	35%	Tar Binders	100%		
	Roofing Felts (Black)	45%	Chrysotile	30%		
			Cellulose Fibers	40%		
			Tar Binders	30%		
3	Sand (Tan)	2%	Sand	100%	02/01	BS
	Roofing Materials (Black)	8%	Glass Wool Fibers	25%		
			Calcite / Tar Binders	75%		
	Roofing Tars (Black)	50%	Tar Binders	100%		
	Roofing Felts (Black)	40%	Chrysotile	30%		
			Cellulose Fibers	40%		
			Tar Binders	30%		

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PLM Detail Report

Supplement to PLM Summary Report

NVLAP Lab Code 102056-0
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Client : Crenshaw Consulting Group
Project : Gregg County Courthouse, 101 East Methvin, Longview, TX
Project # : 4-294-1

Lab Job No. : 16B-00940
Report Date : 02/01/2016

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
4	Flashing Material (Black)	2%	Chrysotile	5%	02/01	BS
			Calcite	30%		
			Tar Binders	65%		
	Sand (Black)	3%	Sand	100%		
	Roofing Material (Black)	5%	Glass Wool Fibers	25%		
			Calcite / Tar Binders	75%		
	Roofing Tars (Black)	25%	Tar Binders	100%		
	Roofing Felts (Black)	30%	Chrysotile	30%		
			Cellulose Fibers	40%		
			Tar Binders	30%		
	Underlayment (Tan)	35%	Cellulose Fibers	100%		
5	Roofing Tars (Black)	30%	Tar Binders	100%	02/01	BS
	Roofing Felts (Black)	70%	Glass Wool Fibers	45%		
			Tar Binders	55%		
6	Roofing Tars (Black)	30%	Tar Binders	100%	02/01	BS
	Roofing Felts (Black)	70%	Glass Wool Fibers	45%		
			Tar Binders	55%		
7	Sand (Grey)	2%	Sand	100%	02/01	BS
	Flashing Material (Black)	40%	Calcite	30%		
			Tar Binders	70%		
	Roofing Tars (Black)	25%	Tar Binders	100%		
	Roofing Felts (Black)	33%	Glass Wool Fibers	45%		
			Tar Binders	55%		
8	Flashing Material 1 (Black)	10%	Chrysotile	5%	02/01	BS
			Calcite	30%		
			Tar Binders	65%		
	Roofing Material (Black)	20%	Glass Wool Fibers	25%		
			Calcite / Tar Binders	75%		
	Flashing Material 2 (Black)	70%	Calcite	30%		
			Tar Binders	70%		

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Client : Crenshaw Consulting Group
Project : Gregg County Courthouse, 101 East Methvin, Longview, TX
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Report Date : 02/01/2016

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
9	Flashing Material (Black)	10%	Chrysotile	10%	02/01	BS
			Glass Wool Fibers	5%		
			Tar Binders	85%		
	Roofing Tars (Black)	40%	Tar Binders	100%		
	Roofing Felts (Black)	50%	Cellulose Fibers	85%		
			Tar Binders	15%		
10	Silver Paint (Silver)	2%	Chrysotile	5%	02/01	BS
			Pigment / Binders	95%		
	Flashing Material (Black)	78%	Chrysotile	5%		
			Calcite	30%		
			Tar Binders	65%		
	Roofing Tars (Black)	5%	Tar Binders	100%		
	Roofing Felts (Black)	15%	Cellulose Fibers	85%		
			Tar Binders	15%		
11	Roofing Tars (Black)	50%	Tar Binders	100%	02/01	WP
	Roofing Felts (Black)	50%	Glass Wool Fibers	45%		
			Tar Binders	55%		
12	Top Roofing Felt (Black)	15%	Chrysotile	30%	02/01	WP
			Glass Wool Fibers	5%		
			Cellulose Fibers	35%		
			Tar Binders	30%		
	Roofing Material (Black)	25%	Calcite	20%		
			Tar Binders	80%		
	Cotton Wrap (Off-White)	10%	Cotton Fibers	100%		
	Roofing Tars (Black)	25%	Tar Binders	100%		
	Bottom Roofing Felts (Black)	25%	Glass Wool Fibers	45%		
			Tar Binders	55%		
13	Roofing Tars (Black)	50%	Tar Binders	100%	02/01	WP
	Roofing Felts (Black)	50%	Glass Wool Fibers	45%		
			Tar Binders	55%		

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

PLM Detail Report

Supplement to PLM Summary Report

NVLAP Lab Code 102056-0
TDSHS License No. 30-0084

Client : Crenshaw Consulting Group
Project : Gregg County Courthouse, 101 East Methvin, Longview, TX
Project # : 4-294-1

Lab Job No. : 16B-00940
Report Date : 02/01/2016

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
14	Sealant (Off-White)	10%	Binders / Fillers	100%	02/01	WP
	Top Roofing Felt (Black)	15%	Chrysotile	30%		
			Glass Wool Fibers	5%		
			Cellulose Fibers	35%		
			Tar Binders	30%		
	Roofing Material (Black)	25%	Cellulose Fibers	10%		
			Calcite	20%		
			Tar Binders	70%		
	Roofing Tars (Black)	25%	Tar Binders	100%		
	Bottom Roofing Felts (Black)	25%	Glass Wool Fibers	45%		
			Tar Binders	55%		
15	Sand (Light Grey)	5%	Sand	100%	02/01	WP
	Roofing Material 1 (Black)	30%	Glass Wool Fibers	10%		
			Calcite	30%		
			Tar Binders	60%		
	Roofing Material 2 (Black)	25%	Cellulose Fibers	25%		
			Calcite	20%		
			Tar Binders	55%		
	Roofing Felts (Black)	15%	Glass Wool Fibers	45%		
			Tar Binders	55%		
	Roofing Material 3 (Black)	25%	Chrysotile	10%		
			Calcite	20%		
			Tar Binders	70%		

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Project : Gregg County Courthouse, 101 East Methvin, Longview, TX
Project # : 4-294-1

Lab Job No. : 16B-00940
Report Date : 02/01/2016

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
16	Metal Flashing (Silver)	5%	Metal Foil	100%	02/01	WP
	Roofing Material 1 (Black)	40%	Glass Wool Fibers	25%		
			Aggregate	20%		
			Calcite / Tar Binders	55%		
	Roofing Felts (Black)	10%	Glass Wool Fibers	45%		
			Tar Binders	55%		
	Roofing Material 2 (Black)	45%	Cellulose Fibers	25%		
			Aggregate	20%		
			Calcite / Tar Binders	55%		
17	Sand Layer (Light Grey)	5%	Aggregate	100%	02/01	WP
	Roof Membrane (Black)	30%	Synthetic Fibers	10%		
			Calcite	30%		
			Tar Binders	60%		
	Roofing Tars (Black)	15%	Tar Binders	100%		
	Roofing Felt (Black)	10%	Glass Wool Fibers	45%		
			Tar Binders	55%		
	Underlayment (Tan)	40%	Cellulose Fibers	50%		
			Wood Fibers	50%		
18	Sand Layers (Light Grey)	10%	Aggregate	100%	02/01	WP
	Roof Membranes (Black)	65%	Synthetic Fibers	10%		
			Calcite	30%		
			Tar Binders	60%		
	Roofing Tars (Black)	15%	Tar Binders	100%		
	Roofing Felts (Black)	10%	Glass Wool Fibers	45%		
			Tar Binders	55%		

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Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
19	Sand Layer (Light Grey)	5%	Aggregate	100%	02/01	WP
	Roofing Material (Black)	15%	Glass Wool Fibers	15%		
			Calcite	20%		
			Tar Binders	65%		
	Roof Membrane (Black)	15%	Synthetic Fibers	10%		
			Calcite	30%		
			Tar Binders	60%		
	Roofing Tars (Black)	15%	Tar Binders	100%		
	Roofing Felts (Black)	10%	Glass Wool Fibers	45%		
			Tar Binders	55%		
	Underlayment (Tan)	40%	Cellulose Fibers	50%		
			Wood Fibers	50%		
20	Metal Flashing (Silver)	5%	Metal Foil	100%	02/01	WP
	Roofing Material (Black)	30%	Glass Wool Fibers	15%		
			Calcite	20%		
			Aggregate	10%		
			Tar Binders	55%		
	Roof Membrane (Black)	25%	Synthetic Fibers	10%		
			Calcite	30%		
			Tar Binders	60%		
	Roofing Tars (Black)	15%	Tar Binders	100%		
	Roofing Felt (Black)	5%	Glass Wool Fibers	45%		
			Tar Binders	55%		
	Underlayment (Tan)	20%	Cellulose Fibers	80%		
			Perlite	20%		
21	Rubber Membrane (Black)	97%	Synthetic Fiber Mesh	15%	02/01	WP
			Rubber Binders	85%		
	Tan Adhesive (Tan)	3%	Glue Binders	100%		

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Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
22	Rubber Membrane (Black)	97%	Synthetic Fiber Mesh	15%	02/01	WP
			Rubber Binders	85%		
	Tan Adhesive (Tan)	3%	Glue Binders	100%		
23	Roofing Material (Black)	30%	Glass Wool Fibers	15%	02/01	BC
			Calcite	20%		
			Aggregate	10%		
			Tar Binders	55%		
	Roof Membrane (Black)	10%	Synthetic Fibers	10%		
			Calcite	30%		
			Tar Binders	60%		
	Roofing Tars (Black)	25%	Tar Binders	100%		
	Roofing Felts (Black)	30%	Glass Wool Fibers	45%		
			Tar Binders	55%		
	Paper Facing (Tan / Black)	5%	Cellulose Fibers	85%		
			Tar	15%		
24	Roofing Tars (Black)	40%	Tar Binders	100%	02/01	BC
	Top Roofing Felt (Black)	20%	Chrysotile	30%		
			Glass Wool Fibers	5%		
			Cellulose Fibers	35%		
			Tar Binders	30%		
	Roof Membrane (Black)	15%	Synthetic Fibers	10%		
			Calcite	30%		
			Tar Binders	60%		
	Roofing Felts (Black)	25%	Glass Wool Fibers	45%		
			Tar Binders	55%		

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Report Date : 02/01/2016

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
25	Top Roofing Felt (Black)	15%	Chrysotile	30%	02/01	BC
			Glass Wool Fibers	5%		
			Cellulose Fibers	35%		
			Tar Binders	30%		
	Roofing Tars (Black)	55%	Tar Binders	100%		
	Roofing Felts (Black)	30%	Glass Wool Fibers	45%		
			Tar Binders	55%		
26	Roofing Tars (Black)	50%	Tar Binders	100%	02/01	BC
	Roofing Felts (Black)	40%	Glass Wool Fibers	45%		
			Tar Binders	55%		
	Paper Facing (Tan / Black)	10%	Cellulose Fibers	85%		
			Tar	15%		
27	Top Roofing Felt (Black)	15%	Chrysotile	30%	02/01	BC
			Glass Wool Fibers	5%		
			Cellulose Fibers	35%		
			Tar Binders	30%		
	Roofing Tars (Black)	55%	Tar Binders	100%		
	Roofing Felts (Black)	30%	Glass Wool Fibers	45%		
			Tar Binders	55%		
28	Roofing Tars (Black)	60%	Tar Binders	100%	02/01	WP
	Top Roofing Felts (Black)	30%	Glass Wool Fibers	45%		
			Tar Binders	55%		
	Bottom Roofing Felt (Black)	10%	Chrysotile	30%		
			Cellulose Fibers	40%		
			Tar Binders	30%		
29	Roofing Tars (Black)	60%	Tar Binders	100%	02/01	WP
	Roofing Felts (Black)	40%	Glass Wool Fibers	45%		
			Tar Binders	55%		

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Project # : 4-294-1

Lab Job No. : 16B-00940
Report Date : 02/01/2016

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
30	Roofing Tars (Black)	60%	Tar Binders	100%	02/01	WP
	Cotton Wrap (Off-White)	10%	Cotton Fibers	100%		
	Roofing Felts (Black)	30%	Chrysotile	30%		
			Glass Wool Fibers	5%		
			Cellulose Fibers	35%		
			Tar Binders	30%		
31	Roofing Tars (Black)	60%	Tar Binders	100%	02/01	WP
	Roofing Felt (Black)	40%	Glass Wool Fibers	45%		
			Tar Binders	55%		
32	Roofing Tars (Black)	45%	Tar Binders	100%	02/01	WP
	Roofing Felts (Black)	20%	Glass Wool Fibers	45%		
			Tar Binders	55%		
	Roofing Material (Black)	35%	Chrysotile	10%		
			Calcite	20%		
			Tar Binders	70%		

Sarnafil BUILDING TRUST

PRODUCT DATA SHEET

SARNAFIL® G410 ENERGYSMART ROOF® MEMBRANE

__48__60 __72 __80__FELTBACK

Sarnafil G410 EnergySmart Roof Membrane is a PVC thermoplastic membrane produced with an integral fiberglass mat reinforcement for excellent dimensional stability, is highly reflective, guaranteed for thickness, with heat-weldable seams, and a unique lacquer coating applied to the top of the membrane to reduce dirt pick up.

Substitution Request Approved by Vickie Crenshaw on 02/15/2017

PRODUCT INFORMATION

USES

Sarnafil G410 EnergySmart Roof Membrane is used in adhered applications with various adhesives over various substrates.

AREAS OF APPLICATION

- New Roofs
- Reroofs
- Flashings

FEATURES / BENEFITS

- Excellent dimensional stability
- Factory applied lacquer coated to reduce dirt pick up
- Hot-air welded seams for long-term performance
- Proven membrane performance
- Guaranteed thickness
- Highly reflective

TESTS

CODES / APPROVALS

- FM Global
- Underwriters Laboratories
- Underwriters Laboratories of Canada
- Miami-Dade County / Florida Building Code
- NSF/ANSI 347: Platinum Certified
- ENERGY STAR®
- California Title 24
- LEED / Green Globes

PRODUCT DATA

FORM

COMPOSITION

High-quality, PVC membrane containing ultraviolet light stabilizers, flame retardant, and fiberglass reinforcement with a unique lacquer coating on the top surface.

COLOR

- Top: White, Reflective Gray, Tan, and Patina Green
- Bottom: Gray

PACKAGING (White, Reflective Gray, and Tan)

- **48 mil** (1.2 mm) Membrane*

  Bareback: 10 ft x 150 ft (3 m x 45 m) roll, 464 lbs (210 kg) per roll, 8 rolls per pallet
  5 ft x 150 ft (1.5 m x 45 m) roll, 232 lbs (105 kg) per roll, 12 rolls per pallet
  Feltback: 10 ft x 100 ft (3 m x 30 m) feltback roll, 363 lbs (165 kg) per roll, 9 rolls per pallet

  * Made to order, minimum volume required, extended production lead times. Consult with Sika – Roofing representative for further information.

- **60 mil** (1.5 mm) Membrane

  Bareback: 10 ft x 100 ft (3 m x 30 m) roll, 389 lbs (176 kg) per roll, 8 rolls per pallet
  5 ft x 100 ft (1.5 m x 30 m) roll, 195 lbs (88 kg) per roll, 12 rolls per pallet
  Coverstrip: 8 in x 100 ft (20 cm x 30 m) roll, 25 lbs (11 kg) per roll
  Feltback: 10 ft x 80 ft (3 m x 24 m) roll, 354 lbs (160 kg) per roll, 9 rolls per pallet

- **72 / 80 mil** (1.8 / 2.0 mm) Membrane

  Bareback: 10 ft x 100 ft (3 m x 30 m) roll,
  471 / 520 lbs (213 / 235 kg) per roll, 4 rolls per pallet
  5 ft x 100 ft (1.5 m x 30 m) roll,
  236 / 260 lbs (107 / 118 kg) per roll, 9 rolls per pallet
  Feltback: 10 ft x 50 ft (3 m x 15 m) roll,
  262 / 287 lbs (119 / 130 kg) per roll, 10 rolls per pallet
  10 ft x 80 ft (3 m x 24 m) roll,
  419 / 459 lbs (190 / 208 kg) per roll, 8 rolls per pallet

PACKAGING (Patina Green)

- **48 mil** (1.2 mm) Membrane*

  Bareback: 6.56 ft x 65.6 ft (2 m x 20 m) roll,
  133 lbs (60 kg) per roll, 19 rolls per pallet
  3.25 ft x 65.6 ft (1 m x 20 m) roll,
  63 lbs (29 kg) per roll, 20 rolls per pallet
  Feltback: 6.56 ft x 65.6 ft (2 m x 20 m) roll,
  157 lbs (71 kg) per roll, 15 rolls per pallet

  * Made to order, minimum volume required, extended production lead times. Consult with Sika – Roofing representative for further information.

- **60 mil** (1.5 mm) Membrane

  Bareback: 6.56 ft x 65.6 ft (2 m x 20 m) roll,
  168 lbs (76 kg) per roll, 19 rolls per pallet
  Coverstrip: 8 in x 100 ft (20 cm x 30 m) roll, 25 lbs (11 kg) per roll
  Feltback: 6.56 ft x 65.6 ft (2 m x 20 m) roll,
  190 lbs (86 kg) per roll, 10 rolls per pallet

- **72 / 80 mil** (1.8 / 2.0 mm) Membrane

  Bareback: 6.56 ft x 49.2 ft (2 m x 15 m) roll,
  152 / 168 lbs (69 / 76 kg) per roll, 19 rolls per pallet
  Feltback: 6.56 ft x 49.2 ft (2 m x 15 m) roll,
  170 / 185 lbs (77 / 84 kg) per roll, 10 rolls per pallet

STORAGE

STORAGE CONDITIONS

Store rolls on pallets and fully protected from the weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions that may affect the ease of membrane weldability.

TECHNICAL DATA

TYPICAL PHYSICAL PROPERTIES*

Property	ASTM Test Method	ASTM Type II D-4434 Spec. Requirement	Typical Results			
Overall Thickness, mil	D751	45	**48**	**60**	**72**	**80**
Thickness Over Scrim, mil	--	16	22	27	35	40
Reinforcing Material	--	--	Fiberglass			
Felt Weight, oz/yd[2] (feltback membrane only)	--	--	9	9	9	9
Breaking Strength, lbf/in (N)	D751	55 (245)	60 (267)	80 (356)	100 (445)	110 (489)
Elongation at Break, % M. D.[1] & C.M.D.[1]	D751	250 & 220	250 & 220	250 & 220	250 & 220	250 & 220
Seam Strength, % of original[2]	D751	75	Pass	Pass	Pass	Pass
Retention of Properties After Heat Aging	D3045	--	--	--	--	--
Tensile Strength, % of original	D751	90	Pass	Pass	Pass	Pass
Elongation, % of original	D751	90	Pass	Pass	Pass	Pass
Tearing Resistance, lbf (N)	D1004	10 (45)	15 (67)	17.5 (78)	20.5 (91)	22 (98)
Low Temperature Bend, -40°F (-40°C)	D2136	Pass	Pass	Pass	Pass	Pass
Accelerated Weathering Test, Hours (Florescent Light UV exposure)	G154	5,000	10,000	10,000	10,000	10,000
Cracking (7x magnification)	--	None	None	None	None	None
Discoloration (by observation)	--	Negligible	Negligible			
Crazing (7x magnification)	--	None	None	None	None	None
Linear Dimensional Change, %	D1204	0.1	-0.02	-0.02	-0.01	-0.01
Weight Change After Immersion in Water, %	D570	± 3.0	2.4	1.9	1.8	1.7
Static Puncture Resistance, lbf (kg)	D5602	33 (15)	Pass	Pass	Pass	Pass
Dynamic Puncture Resistance, ft-lbf (J)	D5635	7.3 (10)	Pass	Pass	Pass	Pass
Recycled Content	--	--	9% Pre-consumer, 1% Post-consumer			

* Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions, and curing conditions.

[1] M.D. = Machine Direction, C.M.D. = Cross Machine Direction

[2] Failure occurs through membrane rupture not seam failure.

EnergySmart Colors	INITIAL SOLAR REFLECTANCE[1]	3-YEAR SOLAR REFLECTANCE[1]	INITIAL THERMAL EMITTANCE[2]	3-YEAR THERMAL EMITTANCE[2]	INITIAL SOLAR REFLECTANCE INDEX	3-YEAR SOLAR REFLECTANCE INDEX
EnergySmart White[3]	0.83	0.70	0.90	0.86	104	85
EnergySmart Reflective Gray[4]	0.73	0.65	0.89	0.88	90	78
EnergySmart Tan[3]	0.73	0.65	0.85	0.86	89	78
EnergySmart Patina Green[5]	0.55	0.46	0.86	0.85	64	51

[1] Solar Reflectance testing according to ASTM C1549

[2] Thermal Emittance testing according to ASTM C1371, Slide Method

[3] EnergySmart White and EnergySmart Tan membranes meet ENERGY STAR®, LEED, Green Globes, and California's Title 24 criteria for Low and Steep Slope applications.

[4] EnergySmart Reflective Gray membrane meets LEED, Green Globes, and California's Title 24 criteria for Low and Steep Slope applications.

[5] EnergySmart Patina Green membrane meets ENERGY STAR®, LEED, Green Globes, and California's Title 24 criteria for Steep Slope applications.

SYSTEM INFORMATION

APPLICATION INSTRUCTIONS	**APPLICATION** Sarnafil G410 EnergySmart is installed after proper preparation of the approved substrate. The membrane is unrolled into Sarnacol adhesive in accordance with Sika's technical requirements and then pressed into place with a minimum 100 lb (45 kg) steel roller. Sarnafil G410 EnergySmart seams are heat-welded together by trained operators using hot-air welding equipment. Different Sarnacol adhesives require different application methods. Please consult Sika's Specifications or Applicator Handbook for detailed installation procedures.
AVAILABILITY	From Sika Authorized Applicators when used within Sarnafil roofing and waterproofing systems.
MAINTENANCE	Standard maintenance of roofs should include regular inspection of flashings, drains and termination sealants at least twice a year and after each storm.
WARRANTY	Upon successful completion of the installed roof by the Sika Authorized Applicator, Sika Corporation will provide a warranty to the Building Owner via the Sika Authorized Applicator.
LEGAL NOTES	All information provided by Sika Corporation ("Sika") concerning Sika products, including but not limited to, any recommendations and advice relating to the application and use of Sika products, is given in good faith based on Sika's current experience and knowledge of its products when properly stored, handled and applied under normal conditions in accordance with Sika's instructions. In practice, the differences in materials, substrates, storage and handling conditions, actual site conditions and other factors outside of Sika's control are such that Sika assumes no liability for the provision of such information, advice, recommendations or instructions related to its products, nor shall any legal relationship be created by or arise from the provision of such information, advice, recommendations or instructions related to its products. The user of the Sika product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with the full application of the product(s). Sika reserves the right to change the properties of its products without notice. All sales of Sika product(s) are subject to its current terms and conditions of sale which are available at usa.sarnafil.sika.com or by calling 800-451-2504. **Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at usa.sarnafil.sika.com or by calling Sika's Technical Service Department at 800-451-2504. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.** Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

SIKA CORPORATION – ROOFING	**UNITED STATES** 100 Dan Road Canton, MA 02021 800-451-2504 (p) 781-828-5365 (f) usa.sarnafil.sika.com webmaster.sarnafil@us.sika.com	**SIKA CANADA INC.** 6915 Davand Drive Mississauga, ON L5T 1L5 905-795-3177 (p) 905-795-3192 (f) can.sika.com marketing.construction@ca.sika.com

CSI Form 1.5C

SUBSTITUTION REQUEST
(During the Bid Period)

Project: Gregg County Courthouse Roofing Project, Phase 1
Bid#2017-703

To: Gregg County

Substitution Request Number: _____

From: Susan Deaton - CSL Materials

Date: 02/17/17

A/E Project Number: _____

Re: _____

Contract For: _____

Specification Title: Thermal & Moisture Protection

Section: 07 54 19 Page: _____

Description: Adhered PVC Membrane Roofing Approved Products

Article/Parag

Proposed Substitution: Carlisle Sure-Flex 80-mil PVC roofing system with a 20 year warranty.

Manufacturer: Carlisle SynTec, P.O. Box 7000, Carlisle, PA 17013

Trade Name: _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.

Submitted by: Susan Deaton

Signed by: Susan Deaton

Firm: CSL Materials

Address: 8765 Stockard Drive, Suite 204
Frisco, TX 75034

Telephone: (214) 263-6628

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
☒ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: Vicki C

Date: 2/20/2017

Supporting Data Attached: ☐ Drawings ☒ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

February 17, 2017

Ms. Kelli Davis
Gregg County
101 E. Methvin, Suite 205
Longview, TX 75601

RE: Gregg County Courthouse Roofing Project, Phase 1
Bid #2017-703

Dear Ms. Davis,

CSL Materials submits for your approval, a single-ply roofing system on the above referenced project. Carlisle's Sure-Flex 80-mil PVC roofing system meets and/or exceeds the roofing system listed in the specification. I have enclosed the product data sheets for your review and acceptance into the bid documents through addendum.

For over 50 years, Carlisle has been supporting architectural and building owner communities with designing and recommending the most effective roofing solutions. Visit the Carlisle website for the most current specifications and details, case studies, code approvals and more - www.carlislesyntec.com.

For questions or inquiries regarding the Sure-Flex PVC roofing system or any other Carlisle single-ply roofing system, please contact me at (214) 263-6628.

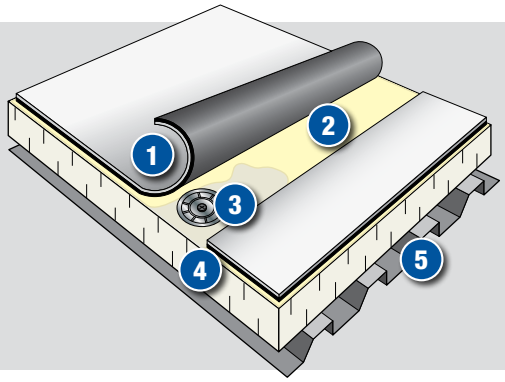
Sincerely,

Susan L. Deaton
Inside Sales Specialist

CARLISLE SYNTEC SYSTEMS

Sure-Flex™ PVC
Fully-Adhered Roofing Systems

Warranty Submittal Sheet



Typical Applications

1. Sure-Flex PVC Membrane
2. Carlisle Bonding Adhesive
3. Carlisle Fasteners and Plates
4. Acceptable Insulation
5. Approved Roof Deck

Sure-Flex
5-, 10-, 15-, and 20-year Total System Warranties*

1. **Membrane:**
   - 50-mil Sure-Flex PVC (15-year max.)
   - 60-mil Sure-Flex PVC
   - 80-mil Sure-Flex PVC
   - 50-mil Sure-Flex FRS PVC (15-year max.)
   - 60-mil Sure-Flex FRS PVC
   - 80-mil Sure-Flex FRS PVC
   - 50-mil Sure-Flex KEE HP
   - 60-mil Sure-Flex KEE HP
   - 80-mil Sure-Flex KEE HP
2. **Membrane Bonding Adhesive:**
   - Sure-Flex PVC Low VOC Bonding Adhesive
   - Aqua Base 120
   - HydroBond Water Based Bonding Adhesive (Non-KEE membrane only)
3. **Carlisle Insulation Fasteners and Insulation Plates or Adhesive:**
   - FAST™ Adhesive
   - Flexible FAST Adhesive
   - OlyBond 500®
   - HP (steel/wood)
   - InsulFast™ (steel/wood)
   - ASAP (steel/wood)
   - CD-10 (concrete)
   - HP-X™ (steel/wood)
   - HD 14-10 (concrete)
   - GypTec® (gypsum or cementitious wood fiber)
   - Lite-Deck (gypsum or cementitious wood fiber)
4. **Cover Board** (optional):
   - SecurShield™ HD
   - SecurShield HD Plus
   - SECUROCK® Gypsum-Fiber (new construction and tear-offs only)
   - DensDeck® Prime (new construction and tear-offs only)
   - 7/16" OSB (new construction and tear-offs only)
   - HP Recovery Board (15-year max. on re-cover)
5. **Acceptable Insulation:**
   - HP-H Polyiso
   - SecurShield Polyiso
   - SecurShield HD Composite
   - Insulfoam EPS (cover board required)
   - Insulfoam EPS Composite
   - XPS (cover board required)
6. **Vapor Barrier** (optional for new construction and tear-offs only):
   - VapAir Seal™ 725TR (direct to concrete, wood, gypsum, or thermal barrier)
   - VapAir Seal MD (direct to metal deck only, fastening of above insulation board required)
   - SureMB 90/120TG Base (direct to concrete or thermal barrier only)
   - SureMB 90 Base Ply (see Carlisle Specs and Details)
   - Polyethylene (by others, fastening of above insulation board required
7. **Thermal Barrier** (optional for new construction and tear-offs only, not for use directly over concrete decks):
   - DensDeck Prime
   - SECUROCK Gypsum-Fiber
8. **Deck:**
   - 22-gauge steel or heavier
   - Structural concrete
   - Wood plank
   - ¾" plywood
   - Gypsum
   - Cementitious wood fiber
   - Approved lightweight insulating concrete
9. **Metal Edging:**
   - Shop-fabricated metal
   - Carlisle SecurEdge™
   - Metal by others
10. **Applicable Details**:** A-1, U-1, U-2, U-3, U-4, U-5, U-6, U-8, U-9, U-12, U-13, U-15, U-16, U-18A, U-20, U-22, U-24, U-30.
11. **Construction Type:**
    - New construction
    - Complete tear-off
    - Re-cover (remove and replace wet or damaged insulation prior to installation)
12. **Slope:** Positive slope required.

*Buildings up to 100-feet tall with 55-mph wind speed coverage. Projects requiring warranty wind speeds greater than 55 mph should be reviewed by a Carlisle representative. All products must be supplied by Carlisle to be included in the warranty coverage. All roof systems can only be accepted upon inspection by a Carlisle SynTec Field Service Representative. Carlisle reserves the right to change or enhance any of the above components due to specific or unique project conditions. The intent of this document is to verify the proposed roof assembly meets the requested warranty. Carlisle is not responsible for local and state building code requirements, and any discrepancy should be clarified by the design professional of record. Refer to Carlisle's most currently published specifications and details for additional information.

**Includes all iterations of each detail. For example, U-1 encompasses U-1A, U1-B, U-C, U-1D, and U-1F.

CARLISLE SYNTEC SYSTEMS

Sure-Flex™ PVC
Fully-Adhered Roofing Systems

Insulation Fastening Rates Up to 20-year Warranties			
Top layer of insulation[5]	4' x 8' board[2,3]	Bead adhesive spacing for 4' x 4' boards[1, 4]	
		Field	Field Perimeter
Minimum 1.5"-thick Carlisle HP-H Polyiso Insulation	10	12" o.c.	6" o.c.
Minimum 2.0"-thick Carlisle HP-H Polyiso Insulation or SecurShield HD Composite	8	12" o.c.	6" o.c.
½"-thick SecurShield HD Plus	8	12" o.c.	6" o.c.
⅝"-thick SECUROCK Gypsum-Fiber Roof Board or DensDeck Prime[6]	8	12" o.c.	6" o.c.
Minimum ¼"-thick DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board[6]	12	12" o.c.	6" o.c.
½"-thick SecurShield HD or HP Recovery Board[6]	16	12" o.c.	6" o.c.

[1] Insulation bead spacing shall not exceed 6" on center when adhered directly to steel decking.

[2] For gypsum, less than ¾" plywood, and cementitious wood fiber decks, insulation board must be fastened with 16 fasteners and insulation plates per 4' x 8' board. Beads of adhesive shall not exceed 6" on center directly over gypsum and cementitious wood fiber decks.

[3] For buildings 51-100' tall, enhance a minimum 12'-wide perimeter with 50% more insulation fasteners and plates.

[4] Existing roof: insulation bead spacing shall not exceed 6" on center in the field and 4" on center in the perimeters and corners over gravel-surface BUR.

[5] Minimum of 1.5"-thick insulation is required over existing coal tar pitch.

[6] Cover boards must be installed over a minimum 1"-thick Carlisle approved insulation.

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Addendum 1, Attachment 4

CARLISLE SYNTEC SYSTEMS

Sure-Flex™ PVC Membrane

80-mil Membrane

Overview

Carlisle's Sure-Flex PVC is an advanced-formula, heat-weldable PVC thermoplastic membrane that is designed for long-term weatherability and performance. The physical properties of the membrane are enhanced by a tenacious, weft-inserted polyester fabric that is encapsulated by thick PVC-based top and bottom plies. The smooth surface of the PVC membrane allows for a total-surface fusion and permanent weld, creating a consistent, watertight, monolithic roof assembly. PVC can be used in adhered and mechanically fastened systems. The gray-colored bottom ply provides a visual confirmation of a proper weld during the lap welding process.

Features and Benefits

- Wide choice of membrane sizes, thicknesses and colors
- Enhanced chemical resistance
- Energy efficiency
- Wide window of weldability
- Flexibility in low temperatures
- Impact and puncture resistance
- UV, ozone and oxidation resistance
- Easy installation
- Available in white, gray, and tan

Installation

With minimal labor and few components required, PVC is quick and easy to install. PVC systems are installed using an Automatic Heat Welder, making sheet welding fast, clean and consistent.

Fully Adhered Roofing System

The fully adhered system starts with a suitable surface upon which the Low-VOC PVC Bonding Adhesive or HydroBond™ Water-Based PVC Bonding Adhesive is applied.

Mechanically Fastened Roofing System

The mechanically fastened system starts with approved insulation being fastened with a minimum of 5 fasteners per 4' x 8' board. The PVC membrane is then mechanically fastened to the deck using HP-X™ Fasteners and Piranha Plates™, or HP-XTRA Fasteners and Piranha XTRA Plates. Adjoining sheets of PVC membrane are overlapped over the fasteners and plates and joined together with a minimum 1½"-wide hot-air weld.

Review Carlisle specifications and details for complete installation information.

Precautions

- Sunglasses that filter out ultraviolet light are strongly recommended, as the membrane's white surface is highly reflective to sunlight. Roofing technicians should dress appropriately and wear sunscreen.
- Smooth surfaces may cause slippery conditions due to frost and ice buildup. Exercise caution during cold conditions to prevent falls.
- 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.
- Use proper stacking procedures to ensure sufficient stability of the materials.
- Exercise caution when walking on wet membrane. Membranes may be slippery when wet.
- Store PVC membrane in the original undisturbed plastic wrap in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. PVC membrane that has been exposed to the weather or contaminated with dirt must be prepared with PVC Membrane Cleaner prior to hot-air welding.

CARLISLE SYNTEC SYSTEMS

Sure-Flex PVC Membrane

Typical Properties and Characteristics

Physical Property	ASTM D4434 Requirement	50-mil	60-mil	80-mil
Thickness over scrim, in. (mm) ASTM D4434 optical method average of 3 areas	0.016 min (0.40)	0.021 (0.533)	0.025 (0.635)	0.034 (0.864)
Weight, lbs/ft2 (kg/m²)	No requirement	0.33 (1.61)	0.40 (1.95)	0.55 (2.68)
Breaking strength (MD x CD), lbf/in (kN/m) ASTM D751 grab method	275 min (48)	320 x 300 (56 x 53)	330 x 300 (58 x 55)	360 x 330 (63 x 58)
Elongation break of reinforcement (MD x CD), % ASTM D751 grab method	25 min	30 x 30	30 x 30	30 x 30
Seam strength, min. ASTM D751 grab method (% of breaking strength)	>75	PASS	PASS	PASS
Tearing strength (MD x CD), lbf (N) ASTM D751 proc. B, 8 in. x 8 in.	90 min (400)	100 x 120 (445 x 534)	100 x 130 (445 x 578)	100 x 132 (445 x 587)
Low temperature bend, ASTM D2135, no cracks 5x at -40°C	PASS	PASS (-40°C)	PASS (-40°C)	PASS (-40°C)
Linear dimensional change, % ASTM D1204, 6 hours at 176°F	±0.5 max	0.4	0.4	0.4
Ozone resistance, no cracks 7x ASTM D1149, 100pphm, 168 hrs	PASS	PASS	PASS	PASS
Water absorption resistance, mass % ASTM D570, 166 hours at 158°F water	±3.0 max	2.0	2.0	2.0
Field seam strength, lbf/in. (kN/m) ASTM D1876 tested in peel	No requirement	25 (4.4) min 60 (10.5) typ.	25 (4.4) min 60 (10.5) typ.	25 (4.4) min 60 (10.5) typ.
Water vapor permeance, Perms, ASTM E96 proc. B	No requirement	0.10 max 0.05 typ	0.10 max 0.05 typ	0.10 max 0.05 typ
Puncture resistance – Federal, lbf (kN) FTM 101C, method 2031	No requirement	280	320	380
Puncture resistance – Dynamic, J (ft-lbf) ASTM D5635	20 (14.7)	PASS	PASS	PASS
Puncture resistance – Static, lbf (N) ASTM D5602	33 (145)	PASS	PASS	PASS
Xenon-Arc resistance, no cracks/ crazing 10x, ASTM G155 0.35 W/m² at 340-nm, 63°C B.P.T. 12,600 kJ/m² total radiant exposure 10,000 hours	PASS	PASS	PASS	PASS
Properties after heat aging, ASTM D3045, 56 days at 176°F Breaking strength, % retained Elongation reinf., % retained	90 min 90 min	90 min 90 min	90 min 90 min	90 min 90 min

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.

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

Physical Property	Test Method	Gray PVC	Tan PVC	White PVC
ENERGY STAR – E-903 Initial Solar Reflectance	Solar Spectrum Reflectometer	0.59	0.73	0.87
ENERGY STAR – E-903 Solar Reflectance after 3 years	Solar Spectrum Reflectometer (Uncleaned)	pending	pending	0.61
CRRC – Initial Solar Reflectance	ASTM C1549	0.59	0.73	0.87
CRRC – Solar Reflectance after 3 years	ASTM C1549 (uncleaned)	pending	pending	0.61
CRRC – Initial Thermal Emittance	ASTM C1371	0.85	0.86	0.95
CRRC – Thermal Emittance after 3 years	ASTM C1371 (uncleaned)	pending	pending	0.86
Solar Reflective Index (SRI)	ASTM E1980	69	89	111
Solar Reflective Index (SRI) after 3 years	ASTM E1980	pending	pending	72

LEED Information

Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index (SRI)	White: 111

Supplemental Approvals, Statements and Characteristics

- Sure-Flex PVC meets or exceeds the requirements of ASTM D4434 Standard Specification for Poly (Vinyl Chloride) Sheet Roofing. Sure-Flex PVC is classified as Type III and/or Type IV as defined by ASTM D4434.
- Sure-Flex reinforced PVC was tested for dynamic puncture resistance per ASTM D5635-04 using the most recently modified impact head. 50-mil thick membrane was watertight after an impact energy of 22.5 J (16.6 ft-lbf), which passes the ASTM D4434 requirement.
- Sure-Flex reinforced PVC was tested for static puncture resistance per ASTM D5602-98 and exceeded 33 lbf (145 N), which passes the ASTM D4434 requirement.

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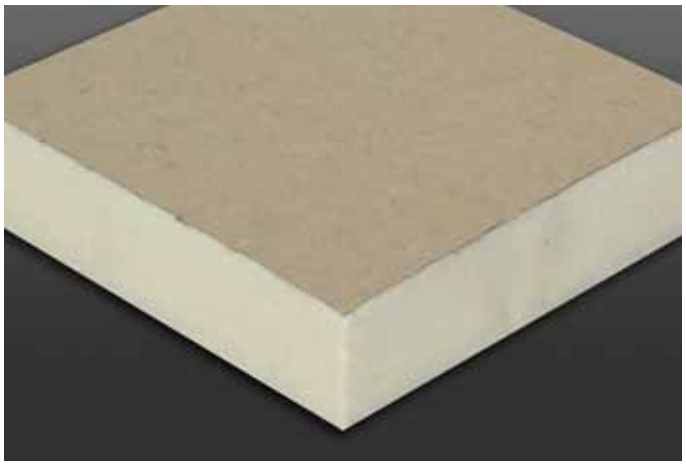
CARLISLE SYNTEC SYSTEMS

InsulBase® POLYISO Insulation



Overview

InsulBase, formally HP-H, 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 1" (25 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
1.00	25	5.7	2 5/8"
1.50	38	8.6	4 3/8"
1.75	44	10.0	4 3/8"
1.80	46	10.3	4 3/8"
2.00	51	11.4	4 3/8"
2.50	64	14.4	4 3/8"
2.60	66	15.0	4 3/8"
3.00	76	17.4	4 3/8"
3.50	89	20.5	4 3/8"
3.80	97	22.3	4 3/8"
4.00	102	23.6	4 3/8"
4.30	109	25.5	4 3/8"
4.50	114	26.8	4 3/8"

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.

CARLISLE SYNTEC SYSTEMS

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, 508, 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•m²))
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

CLASSIFIED c UL us

Foamed plastic as roof deck construction material with resistance to an internal fire exposure only for use in construction no.(s) 120 and 123. See UL Directory of Products Certified for Canada and UL Roofing Materials and Systems Directory. 99DL.

U.S. GREEN BUILDING COUNCIL

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PIMA QualityMark℠ The Certified LTTR-value

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CARLISLE

GOLDEN SEAL TOTAL ROOFING SYSTEM WARRANTY

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 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

1. 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.
2. 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.
3. This warranty shall not be applicable if, upon Carlisle's inspection, Carlisle determines that any of the following has occurred:
   (a) 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
   (b) 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:
   (c) The Carlisle Total Roofing System is damaged by any intentional or negligent acts, accidents, misuse, abuse, vandalism, civil disobedience, or the like.
   (d) 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
   (e) 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.
   (f) The Carlisle Total Roofing System encounters leaks or is otherwise damaged by condensation resulting from any condition within the building that may generate moisture.
4. This Warranty shall be null and void if any of the following shall occur:
   (a) 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
   (b) 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.
5. 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.
6. During the term of this Warranty, Carlisle shall have free access to the roof during regular business hours.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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 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.carlislesyntec.com