Addendum #1

People. Partnership. Performance.
P.O. Box 1837
Tacoma, WA 98401-1837
www.portoftacoma.com

September 16, 2015

TO: **PLANHOLDERS**

SUBJECT: **ROOF REPLACEMENT AT 3701 TAYLOR WAY**
MASTER ID 091357 | CONTRACT NO. 070141

ADDENDUM NUMBER ONE

This addendum is issued to amend the following:

SPECIFICATIONS

A. SECTION 00 11 13 – ADVERTISEMENT FOR BIDS

1. **REPLACE** with new Section 00 11 13

B. SECTION 00 41 00 – BID FORM

1. **REPLACE** with new Section 00 41 00

C. SECTION 07 31 13 – ASPHALT SHINGLES

1. **REPLACE** paragraph 2.01 to read as follows:

PART 2 - PRODUCTS

2.01 ASPHALT COMPOSITION SHINGLES

A. Asphalt Composition Shingles: SBS modified shingles, SBS rubber modified asphalt coating on a composite polyester / glass fiber mat, self-sealing, conform to the following:

1. Approximate Weight: 275 lbs. per square
2. Dimensions: 13-1/4-inch x 39-3/8-inch (± 1/8-inch)
3. Exposure: 5-5/8-inch
4. Granule Adhesion: 0.5 gram loss
5. Fire Rating: Class A
6. Manufacturer's Warranty: 35 year shingle warranty including:
   a. 100 m.p.h. wind warranty
7. Standards: Meet / exceed the following:
   a. UL 2218 Class 4 Impact Resistance

b. ASTM D7158, Class H

c. ASTM D3462

d. ASTM D3018 Type 1

e. ASTM D3161 Class F

f. ASTM E108 Class A

g. ICC Approval - ESR 3150

8. Color: As selected by Engineer.

9. Manufacturer / Product: Malarkey 272 Legacy or equal as approved by the Engineer.

   a. Shingles shall not have the algae resistant coating applied to the shingles. Shingles with the coating shall be rejected.

DRAWINGS

A. DRAWING A6.01 – ROOF PLAN

1. **REPLACE** with new Drawing A6.01

B. DRAWING A6.51 – DETAILS

1. **REPLACE** with new Drawing A6.51

C. DRAWING S2.01 – ROOF PLAN

1. **REPLACE** with new Drawing S2.01

D. DRAWING S8.01 – ROOF PLAN

1. **REPLACE** with new Drawing S8.01

SUBSTITUTION REQUESTS

A. SECTION 07 52 00 – MODIFIED BITUMEN ROOFING SYSTEM

1. Section 2.01A - **ADD** "4. Siplast is approved as noted in Substitution request"

Receipt for this addendum shall be indicated in the space provided in Section 00 41 00, Bid Form.

END OF SECTION

ATTACHMENT A – SECTION 00 11 13 – ADVERTISEMENTS FOR BID

ATTACHMENT B – SECTION 00 41 00 – BID FORM

ATTACHMENT C – DRAWING A6.01 – ROOF PLAN

ATTACHMENT D – DRAWING A6.51 – DETAILS

ATTACHMENT E – DRAWING S2.01 – ROOF FRAMING PLAN

ATTACHMENT F – DRAWING S8.01 – FRAMING DETAILS

ATTACHMENT G – SUBSTITUTION REQUEST – SIPLAST

THE PORT OF TACOMA IS CURRENTLY ACCEPTING SEALED BIDS FOR CONSTRUCTION OF THE FOLLOWING:

Roof Replacement at 3701 Taylor Way

PROJECT NO. 091357 | CONTRACT NO. 070141

Scope of Work: The work required for this project includes removal and installation of new timber sheathing and roofing material, installation of gutters, downspouts and roof access ladder, select roof joist replacement, truss and column repairs, and the removal of a building containing bathrooms and office space.

Bid Estimate: Estimated cost range is 975,000 to 1,190,000 plus Washington State Sales Tax (WSST).

Sealed Bid Date/ Time/Location: Bids will be received at the Front Reception Desk, Port Administration Office, One Sitcum Plaza, Tacoma, Washington, until ~~23~~**:00 PM on September** ~~17~~**24, 2015**, at which time they will be publicly opened and read aloud.

Pre-Bid Conference and Site Tour: Mandatory pre-bid conferences and site visits have been set for **September 2, 2015 at 10:00 AM and September 3, 2015 at 2:00 PM.** The site visit will convene at the project location, 3701 Taylor Way. Parking is available along the southwest side of building.

Bid Security: Each bid must be accompanied by a Certified Check or Bid Security Bond in an amount equal to five (5) percent of the bid.

Contact Information: All questions are to be put into writing to BergerABAM at port.procurement@abam.com. No oral answers will be binding by the Port or its consultants.

Bidding Documents: Plans, Specifications, Addenda, and Plan Holders List for this project are available on-line through The Port of Tacoma's Website www.portoftacoma.com. Click on "Contracts;" "Procurement," and then the Procurement Number **(070141)**. Bidders must subscribe to the Holder's List on the right hand side of the screen in order to receive automatic email notification of future addenda and to be placed on the Holder's List. Holder's Lists will be updated on a regular basis. Additional Instructions available in Instructions to Bidders.

END OF SECTION

BIDDER'S NAME: _____

PROJECT TITLE: **Roof Replacement at 3701 Taylor Way**

The undersigned Bidder declares that it has read the specifications, understands the conditions, has examined the site, and has determined for itself all situations affecting the work herein bid upon. Bidder proposes and agrees, if this proposal is accepted, to provide at Bidder's own expense, all labor, machinery, tools, materials, etc., including all work incidental to, or described or implied as incidental to such items, according to the contract documents of the Port of Tacoma, and that the Bidder will complete the work within the time stated, and that Bidder will accept in full payment therefore the lump sum or unit price(s) set forth below:

Proposed Bid Price. (Note: Show prices in figures only.) Complete installation:

Item No.	Description of Item	QTY	UOM	Unit Price	Extended Price
1	Mobilization and Demobilization	1	LS		
2	Roofing Replacement	1	LS		
3	Plywood Roof Sheathing Replacement	1	LS		
4	Roof Joist Replacement	~~1,400~~ 5,720	LF		
5	Truss Repair	20	EA		
6	Gutters, Downspout and Roof Access Ladder	1	LS		
7	Building Removal	1	LS		
8	Column Repair and Column Brace Replacement	1	LS		
				Base Bid Subtotal	

Evaluation of Bids. In accordance with the provisions of these Contract Documents, Bids will be evaluated to determine the lowest Base Bid Subtotal offered by a responsible Bidder submitting a responsive bid.

Addenda. Bidder acknowledges review of all Addenda through No. _____.

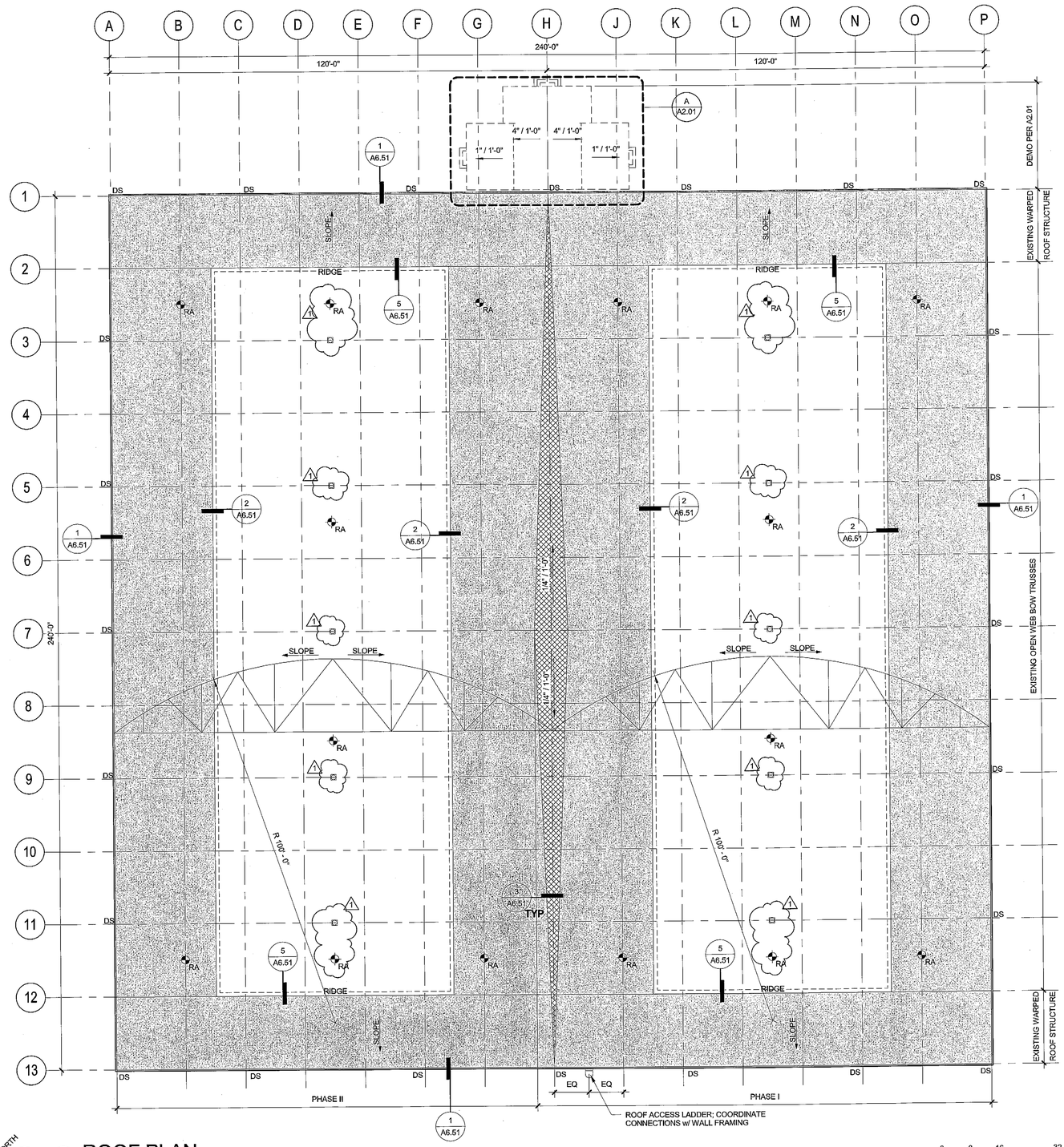
Noncollusion. The undersigned declares under penalty of perjury that the bid submitted is genuine and not a sham or collusive bid, or made in the interest or on behalf of any person or firm not therein named; and further says that the said bidder has not directly or indirectly induced or solicited any bidder on the above work or supplies to put in a sham bid, or any other person or corporation to refrain from bidding; and that said bidder has not in any manner sought by collusion to secure to the bidder an advantage over any other bidder or bidders.

Name of Firm	Date	
Signature	By (Type or Print)	Title
Mailing Address	City, State	Zip Code
Telephone Number	Email Address	
WA State Contractor's License No.	Date of Issue	Expiration Date
Unified Business Identifier (UBI) No.	Employment Security Department No.	

Identification of Bidder as a sole proprietor, a partnership, a joint venture, a corporation, or another described form of legal entity

END OF SECTION

BINDING EDGE



ROOF PLAN DEMO NOTES

1. DEMO EXISTING PVC GUTTER, DOWNSPOUTS & BRACKETS PRIOR TO WORK.
2. PHASE DEMO; SOUTH BARREL FIRST, NORTH BARREL AFTER NEW ROOF IS COMPLETE ON SOUTH BARREL & CRICKET.
3. DEMO EXISTING SHEET METAL GUTTER, DOWNSPOUTS & BRACKETS PRIOR TO WORK.
4. DEMO EXISTING ROOFING SYSTEM, PHASE I: PROTECT EXISTING PHASE I WORK FROM DAMAGE DURING SCOPE OF NEW WORK.

ROOF PLAN GENERAL NOTES

1 PHASE WORK AS SHOWN ON PLAN.
2 REFER TO SHEET A6.51 FOR ROOF ASSEMBLIES.

ROOF PLAN LEGEND

- DS — NEW GUTTER / DOWNSPOUT
- NEW MODIFIED BITUMEN ROOFING SYSTEM
- NEW ASPHALT SHINGLE ROOFING SYSTEM w/ ICE & WATER SHIELD (@ 3:12 SLOPE)
- NEW WOOD FRAMED CRICKET w/ MODIFIED BITUMEN ROOFING SYSTEM
- EXTENTS OF ICE & WATER SHIELD; REFER TO REFERENCED DETAILS
- RA — NEW ROOF ANCHOR PER 4/A6.51
- 1 — EXISTING ROOF VENT; RE-USE

PHASE I SOUTH BARREL ROOF AND CRICKET SCOPE OF WORK

1. TO BE OCCUPIED DURING SCOPE OF WORK. MAINTAIN SECURITY AND WEATHER PROTECTION.
2. DEMOLISH EAST STRUCTURE
3. REMOVE ALL ROOFING, DOWNSPOUTS, AND GUTTERS
4. REMOVE ALL ROOF SHEATHING
5. REPAIR DAMAGED JOISTS/TRUSSES PER STRUCTURAL
6. REPAIR DAMAGED COLUMN PER STRUCTURAL
7. INSTALL NEW ROOF SHEATHING
8. INSTALL NEW WOOD FRAMED VALLEY CRICKET
9. INSTALL NEW ROOF ANCHORS
10. INSTALL NEW BUILT-UP AND ASPHALT SHINGLE ROOFING SYSTEMS
11. INSTALL NEW GUTTERS AND DOWNSPOUTS w/ SPLASHBLOCKS

PHASE II NORTH BARREL ROOF SCOPE OF WORK

1. REMOVE ALL ROOFING, DOWNSPOUTS, AND GUTTERS
2. REMOVE ALL ROOF SHEATHING
3. REPAIR DAMAGED JOISTS/TRUSSES PER STRUCTURAL
4. INSTALL NEW ROOF SHEATHING
5. INSTALL NEW ROOF ANCHORS
6. INSTALL NEW BUILT-UP AND ASPHALT SHINGLE ROOFING SYSTEM
7. INSTALL NEW GUTTERS AND DOWNSPOUTS w/ SPLASHBLOCKS

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T 253.627.4367 F 253.627.3395 WWW.BCRADESIGN.COM
2102 PACIFIC AVENUE, SUITE 200, TACOMA, WA 98402

MARK:	REVISION:	BY:	APPR.	DATE:
1	ADDENDUM 1	-	-	09.03.15

REGISTERED ARCHITECT
6129
JAMES T. WOLCH
STATE OF WASHINGTON

RTV 08.20.15
CHECKED BY: DATE:

APPROVED: [signature] 9-11-15
DIRECTOR: DATE:

PROJ. ENGR: RTV DATE: 08.20.15
PRINTED BY: RTV
PORT ADDRESS: ONE SITCUM PLAZA TACOMA, WA 98421
DRAWING SCALE: AS NOTED

ROOF REPLACEMENT AT 3701 TAYLOR WAY

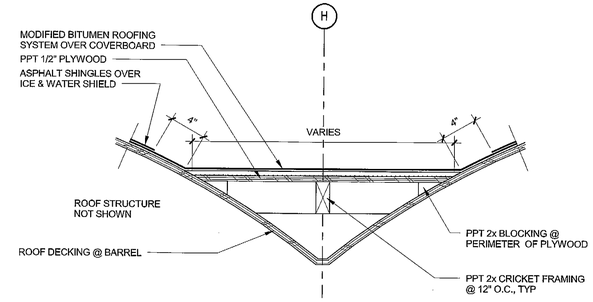
ROOF PLAN

CONT/CONS:	070141	TOWNSHIP: 21	RANGE: 03
M. ID.	091357	DAT-HRZ:	VERT:
PHASE:	100% SET	PARCEL: 0321364024	SECTION: 36

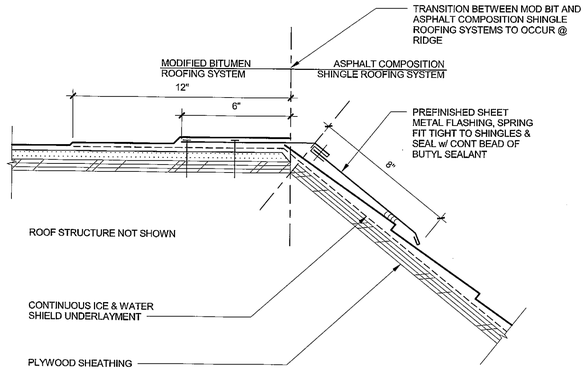
A6.01
4 OF 8

PORT OF TACOMA FILE: C:\Users\tate\Documents\Building 3701-CENTRAL_tate.rvt

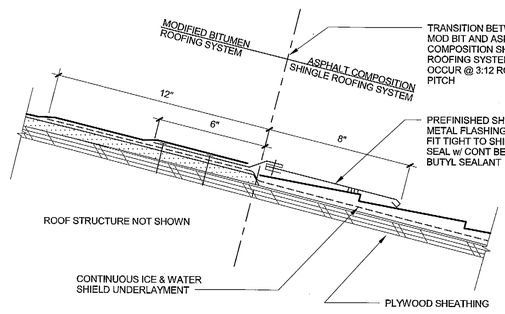
BINDING EDGE



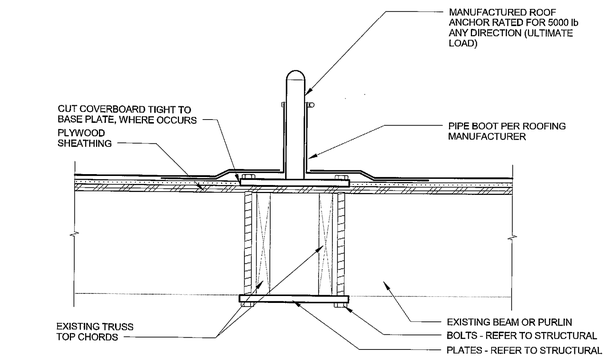
3 CRICKET DETAIL
1 1/2" = 1'-0"



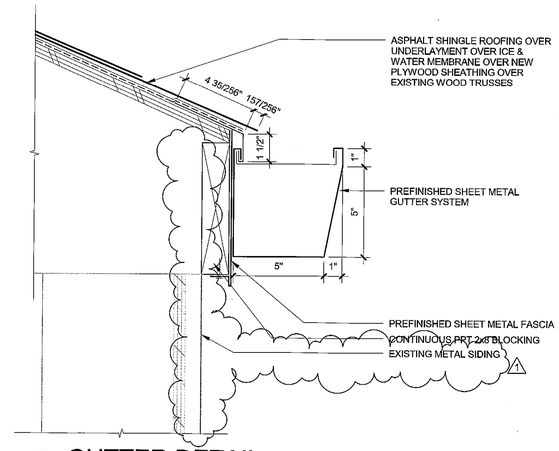
5 ROOFING TRANSITION
3" = 1'-0"



2 ROOFING TRANSITION
3" = 1'-0"



4 ROOF ANCHOR
1 1/2" = 1'-0"



1 GUTTER DETAIL
3" = 1'-0"

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MARK:	REVISION:	BY:	APPR.	DATE:
1	ADDENDUM 1	-	-	09.09.15

REGISTERED ARCHITECT
6129
JAMES T. WOLCH
STATE OF WASHINGTON

DRAWN:	RTV	08.20.15	DATE:
CHECKED BY:			DATE:
PROJ. ENGR:			DATE:
APPROVED:			DATE:
DIRECTOR:			

CONT/CONS:	070141	TOWNSHIP: 21	RANGE: 03
M. ID.	091357	DAT-HRZ:	VERT:
PHASE:	100% SET	PARCEL: 0321364024	DRAWING SCALE: AS NOTED

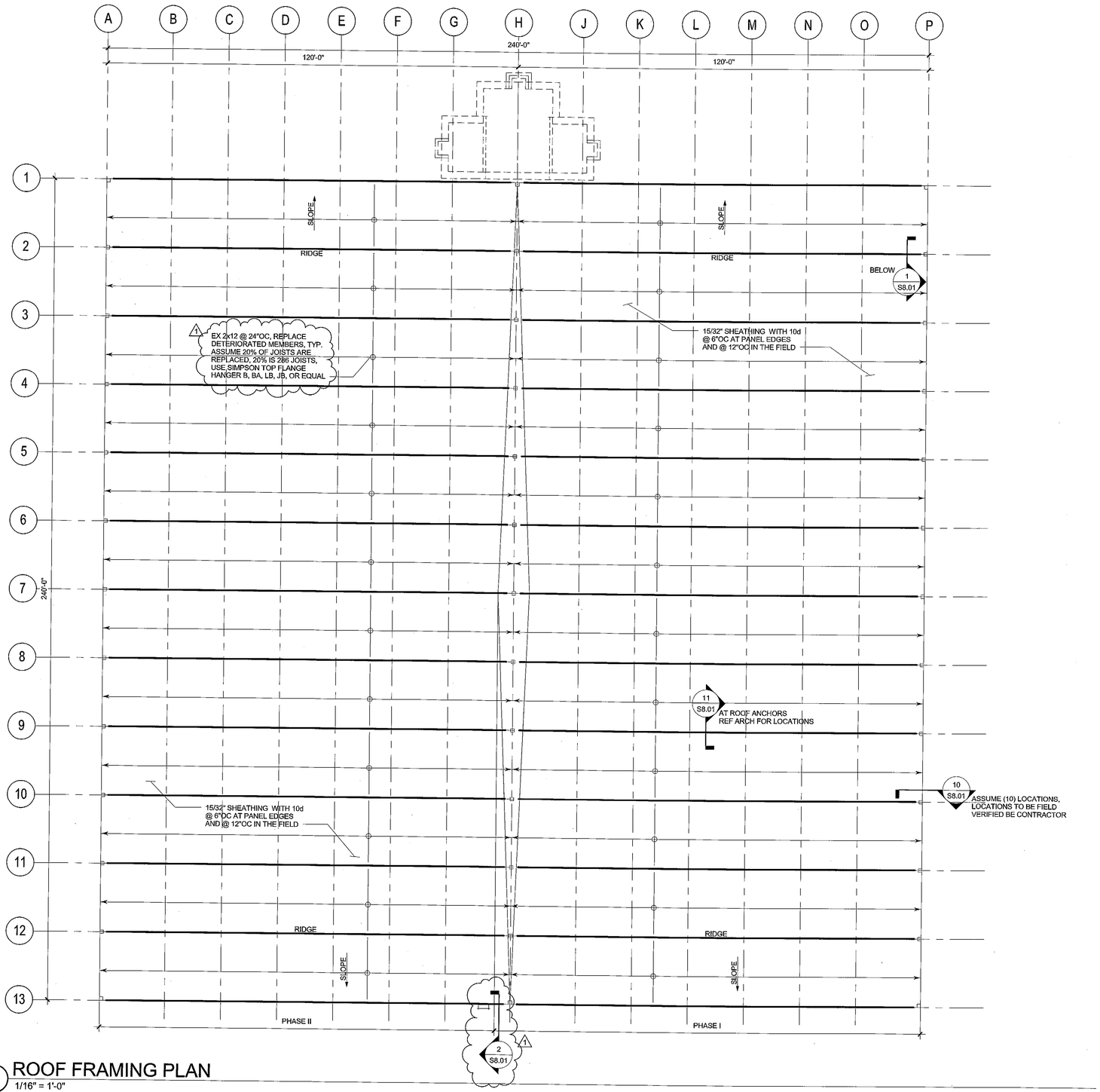
PRINTED BY:	RTV	08.20.15	SECTION: 36
PORT ADDRESS:	ONE SITCUM PLAZA		
	TACOMA, WA 98421		

ROOF REPLACEMENT AT 3701 TAYLOR WAY

DETAILS

A6.51
5 OF 8

BINDING EDGE



NORTH

1 ROOF FRAMING PLAN
1/16" = 1'-0"

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MARK:	REVISION:	BY:	APPR.	DATE:
1	ADDENDUM 1	-	-	08.09.15

BLAKE J JOHNSON
STATE OF WASHINGTON
23823
REGISTERED PROFESSIONAL ENGINEER
8/20/15

APPROVED:
DIRECTOR:
9-11-15

RTV 08.20.15
CHECKED BY: DATE:

PROJ. ENGR:
PRINTED BY: RTV 08.20.15
PORT ADDRESS: ONE SITCUM PLAZA
TACOMA, WA 98421

DRAWING SCALE: AS NOTED

ROOF REPLACEMENT AT 3701 TAYLOR WAY

ROOF FRAMING PLAN

CONT/CONS: 070141	TOWNSHIP: 21	RANGE: 03	SECTION: 36
M. ID. 091357	DAT-HRZ:	VERT:	
PHASE: 100% SET	PARCEL: 0321364024		

S2.01
7 OF 8

BINDING EDGE

11 ROOF ANCHOR DETAIL
1 1/2" = 1'-0"

10 COLUMN BRACE REPLACEMENT
3/8" = 1'-0"

9 TRUSS REPAIR DETAIL
1 1/2" = 1'-0"

7 JOIST CONNECTION AT TRUSS REPAIR
1 1/2" = 1'-0"

2 LADDER ATTACHMENT
1" = 1'-0"

1 COLUMN REPAIR
3/4" = 1'-0"

SECTION A-A

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Port of Tacoma
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2106 PACIFIC AVENUE, SUITE 200, TACOMA, WA. 98402

MARK:	REVISION:	BY:	APPR.	DATE:
1	ADDENDUM 1	-	-	09.09.15

BLAKE J JOHNSON — STATE OF WASHINGTON — 20812 — REGISTERED PROFESSIONAL ENGINEER — 8/20/15

RTV	08.20.15		
CHECKED BY:	DATE:		
PROJ. ENGR:	DATE:		
08.20.15			
RTV			
08.20.15			
ONE SITCUM PLAZA			
TACOMA, WA 98421			

APPROVED: 9-11-15

DIRECTOR:

PRINTED BY: RTV

PORT ADDRESS:

DRAWING SCALE: AS NOTED

ROOF REPLACEMENT AT 3701 TAYLOR WAY
FRAMING DETAILS

S8.01
8 OF 8

CONT/CONS:	070141	TOWNSHIP: 21	RANGE: 03
M. ID.	091357	DAT-HRZ:	VERT:
PHASE:	100% SET	PARCEL: 0321364024	SECTION: 36

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS
SECTION 00 43 25 – SUBSTITUTION REQUEST FORM – DURING BIDDING

Project Title Roof Replacement at 3701 Taylor Way **Project No.** 091357

Submitted By: Ken Stilwell

Contract No. 070141

Prime/Sub/Supplier: Siplast

Date: 9/10/15

Specification Title: Modified Bitumen Roofing Section No. 075200

Description: 2-ply Modified Bitumen Roofing System Paragraph: 2.01A

Page No. 5

Proposed Substitution: Siplast

Trade Name: Parabiene/Parfor 20/30 Model No.:

Manufacturer: Siplast

Address: 2212 Queen Anne Ave N #289 Seattle WA 98109 Phone No.: 206-409-2421

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.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted By: Ken Stilwell, Owner

Signed By: Ken Stilwell Firm: D-Seven, LLC

Address: 2212 Queen Anne Ave N, #289 Seattle WA 98109

Telephone: 206-409-2421 Email: kenny@d-sevennw.com

Supporting Data Attached:

☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ Other

ENGINEER'S REVIEW AND ACTION

☒ Substitution approved

☐ Substitution approved as noted

☐ Substitution rejected - Use specified materials.

☐ Substitution Request received too late - Use specified materials.

Signed by: Jim Wolch Date: 9-10-15

PARADIENE 20 HV TG

Commercial Product Data Sheet

Product Description

Paradiene 20 HV TG is a high performance torch grade modified bitumen base ply designed for use in homogeneous multi-layer modified bitumen roof membrane systems. Paradiene 20 HV TG consists of a lightweight random fibrous glass mat impregnated and coated with high quality styrene-butadiene-styrene (SBS) modified bitumen. The top surface is covered with a perforated plastic burnoff film, and the back surface is uniquely designed for torch applications. The Paradiene 20 HV TG sheet is manufactured using a special process that embosses the back surface with a grooved pattern to provide optimum burnoff of the plastic film and maximize application rates.

Paradiene 20 HV TG is available with Siplast RoofTag RFID roof asset technology on a Special-Made-To-Order basis. See RoofTag Commercial Product Data Sheet for more information.

Product Uses

Paradiene 20 HV TG is the first ply of Siplast Paradiene 20 HV TG/30 TG Systems, and is lapped 3 inches (7.6 cm) side and end. Paradiene 20 HV TG is specifically designed for use in conjunction with torchable Paradiene Roof Systems requiring extended warranties. Paradiene 20 HV TG is torch applied to approved substrates. Contact Siplast for specific approval on product uses.

Product Approvals

Paradiene 20 HV TG is approved by FM Approvals (FM Standard 4470) for use in Siplast Paradiene 20 HV TG/30 TG and Paradiene 20 HV TG/30 FR TG Class 1 insulated steel roof deck constructions and insulated and non-insulated concrete roof deck constructions, subject to FM conditions and limitations.

Contact Siplast for specific information regarding FM Class 1 windstorm resistance classifications.

Paradiene 20 HV TG is classified by Underwriters Laboratories for use in $_{c}UL_{us}$ Classified Siplast Paradiene 20 HV TG/30 TG and Paradiene 20 HV TG/30 FR TG Roof Systems. Siplast Paradiene 20 HV TG/30 FR TG Roof Systems have been classified by Underwriters Laboratories as Class A roofing systems over non-combustible, insulated non-combustible, and insulated combustible decks, and as Class B roofing systems over combustible decks. Siplast Paradiene 20 HV TG/30 TG Roof Systems have been classified as Class C roofing systems over combustible, non-combustible, and insulated combustible decks.

Paradiene 20 HV TG meets or exceeds the requirements of ASTM D 6163 Type I, Grade S, for SBS-modified bituminous sheet materials using glass fiber reinforcements.

Siplast Roof Systems have also received the approval of many regional and local code authorities. Contact Siplast for more information.

COMMERCIAL PRODUCT INFORMATION

Unit:	Roll		
Coverage:	1.0 Square		(9.3 m²)
Coverage Weight Per Square:	Min:	96 lb	(4.7 kg/m²)
Roll Length:	Min:	33.5 ft	(10.21 m)
Roll Width:	Avg:	3.28 ft	(1.00 m)
Thickness:	Avg:	138 mils	(3.5 mm)
	Min:	134 mils	(3.4 mm)
Selvage Width:	N/A		
Selvage Surfacing:	N/A		
Top Surfacing:	Silica Parting Agent		
Back Surfacing:	Polyolefin Film		

Lines: Two laying lines are placed 3 in (7.6 cm) and 4 in (10.2 cm) from each edge of the material. The line color for this material is violet.

Packaging: Rolls are wound onto a compressed paper tube. The rolls are placed upright on pallets cushioned with corrugated cardboard and are adhered with adhesive at the labels. The top of the palleted rolls is covered with foilized Kraft paper. The palleted material is protected by a heat shrink polyethylene shroud.

Pallet: 41 in X 48 in (104 cm X 122 cm) wooden pallet
Number Rolls Per Pallet: 23
Number Pallets Per Truckload: 18
Minimum Roll Weight: 96 lb (43.5 kg)

Storage and Handling: All Siplast roll roofing products should be stored on end on a clean flat surface. Care should be taken that rolls are not dropped on ends or edges and are not stored in a leaning position. Deformation resulting from these actions will make proper installation difficult. All roofing should be stored in a dry place, out of direct exposure to the elements, and should not be double stacked. Material should be handled in such a manner as to ensure that it remains dry prior to and during installation.

Current copies of all Siplast Commercial Product Data Sheets are posted on the Siplast Web site at www.Siplast.com.

Rev 3/2014

Siplast 1000 E. Rochelle Blvd. • Irving, Texas 75062-3940 • 469-995-2200 • www.siplast.com
In Canada: 201 Bewicke Ave., Suite 210 • North Vancouver, BC V7M 3M7 • Toll Free 1-877-233-2338
Customer Service in North America: Toll Free 1-800-922-8800

An Icopal Group Company

PARADIENE 20 HV TG

Physical and Mechanical Properties

Property (as Manufactured)	Values/Units	Test Method
Thickness (minimum)	134 mils (3.4 mm)	ASTM D 5147 section 6
Thickness (average)	138 mils (3.5 mm)	ASTM D 5147 section 6
[1]Peak Load @ 73°F (average)	30 lbf/inch (5.3 kN/m)	ASTM D 5147 section 7
[1]Peak Load @ 0°F (average)	75 lbf/inch (13.2 kN/m)	ASTM D 5147 section 7
[1]Elongation @ Peak Load, 73°F (average)	3%	ASTM D 5147 section 7
[1]Elongation @ Peak Load, 0°F (average)	3%	ASTM D 5147 section 7
[1]Ultimate Elongation @ 73°F (average)	100%	ASTM D 5147 section 7
[1]Tear Strength (average)	40 lbf (0.18 kN)	ASTM D 5147 section 8
Water Absorption (maximum)	1%	ASTM D 5147 section 10
Dimensional Stability (maximum)	0.1%	ASTM D 5147 section 11
Low Temperature Flexibility (maximum)	-15°F (-26°C)	ASTM D 5147 section 12
Compound Stability (minimum)	250°F (121°C)	ASTM D 5147 section 16
Coating Thickness - Back Surface	≥ 40 mils (1 mm)	ASTM D 5147 section 17
Cyclic Fatigue	Paradiene 20 HV TG, bonded to an acceptable Paradiene 30, Paradiene 40 FR, or Parafor 50 LT cap sheet with an approved method of attachment, passes ASTM D 5849 both as-manufactured and after heat conditioning according to ASTM D 5147.	

1. The value reported is the lower of either MD or XD.

PARADIENE 20 SA

Commercial Product Data Sheet

Product Description

Paradiene 20 SA is a high performance, self-adhesive, modified bitumen base ply designed for use in homogeneous multi-layer modified bitumen roof membrane systems. Paradiene 20 SA consists of a lightweight random fibrous glass mat impregnated and coated with high quality styrene-butadiene-styrene (SBS) modified bitumen. The back surface is coated with a self-adhesive bitumen layer specifically formulated for optimum adhesion in low-slope membrane applications, and it is lined with a high strength polyolefin release film.

Paradiene 20 SA is available with Siplast RoofTag RFID roof asset technology on a Special-Made-To-Order basis. See RoofTag Commercial Product Data Sheet for more information.

Product Uses

Paradiene 20 SA is designed to be used as a base ply for direct application to DensDeck Prime® and DuraGuard roof board products, and other approved substrates. Paradiene 20 SA is also used as a stripping ply for reinforcing details at metal flanges, walls, and curbed penetrations. Extending Paradiene 20 SA stripping ply onto the top surface of any Paradiene 20 layer requires either removal of the top film surfacing from a film-surfaced Paradiene 20, or priming a sand-surfaced Paradiene 20 using an approved primer.

Paradiene 20 SA is the first ply of all fully adhered Siplast Paradiene 20 SA/Paradiene 30 TG Systems. It is lapped 3 inches (7.6 cm) on sides and ends. End laps require heat welding. An alternative to the standard end lap method is seaming end joints using a 12-inch (30.4 cm) wide strip of Paradiene 20 TG. Paradiene 20 SA is designed for direct application to approved insulations, DensDeck Prime®, primed structural concrete decks, and other approved substrates. Paradiene 20 SA is used as a base ply in multi-layer roof systems with a torch applied finish layer of Paradiene TG, Veral, or Parafor. Prior approval from the Siplast Technical Department is required for SA membrane systems installed without a torch applied finish layer. All laps of the Paradiene 20 SA must be heat welded when the Paradiene TG or Parafor TG over-layer is not installed during the same day's application.

Product Approvals

Paradiene 20 SA is approved by FM Approvals (FM Standard 4470) for use in Siplast Paradiene 20/30, Paradiene 20/30 FR, and Paradiene 20/20 PR Class 1 insulated steel roof deck constructions and insulated and non-insulated concrete roof deck constructions, subject to FM conditions and limitations.

Paradiene 20 SA is classified by Underwriters Laboratories as an acceptable substitute for Paradiene 20 TG in all $_{c}UL_{us}$ classification listings and assemblies.

Paradiene 20 SA meets or exceeds the requirements of ASTM D 6163 Type I, Grade S, for SBS-modified bituminous sheet materials using glass fiber reinforcements.

COMMERCIAL PRODUCT INFORMATION

Unit:	Roll		
Coverage:	1.0 Square		(9.3 m²)
Coverage Weight Per Square:	Min:	72 lb	(3.5 kg/m²)
Roll Length:	Min:	33.5 ft	(10.21 m)
Roll Width:	Avg:	3.28 ft	(1.00 m)
Thickness:	Min:	98 mils	(2.5 mm)
	Avg:	102 mils	(2.6 mm)
Selvage Width:	Avg:	3.0 in	(76 mm)
Selvage Surfacing:	Polyolefin Release Tape		
Top Surfacing:	Sand		
Back Surfacing:	Polyolefin Release Film		

Packaging: Rolls are wound onto a compressed paper tube. The rolls are placed upright on pallets cushioned with corrugated cardboard and are adhered with adhesive at the labels. The top of the palleted rolls is covered with foilized Kraft paper. The palleted material is protected by a heat shrink polyethylene shroud.

Pallet: 41 in X 48 in (104 cm X 122 cm) wooden pallet
Number Rolls Per Pallet: 25
Number Pallets Per Truckload: 18
Minimum Roll Weight: 72 lb (32.7 kg)

Storage and Handling: All Siplast roll roofing products should be stored on end on a clean flat surface. Care should be taken that rolls are not dropped on ends or edges and are not stored in a leaning position. Deformation resulting from these actions will make proper installation difficult. All roofing should be stored in a dry place, out of direct exposure to the elements, and should not be double stacked. Material should be handled in such a manner as to ensure that it remains dry prior to and during installation.

Current copies of all Siplast Commercial Product Data Sheets are posted on the Siplast Web site at www.Siplast.com.

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PARADIENE 20 SA

Physical and Mechanical Properties

Property (as Manufactured)	Values/Units	Test Method
Thickness (minimum)	98 mils (2.5 mm)	ASTM D 5147 section 6
Thickness (average)	102 mils (2.6 mm)	ASTM D 5147 section 6
[1]Peak Load @ 73°F (average)	30 lbf/inch (5.3 kN/m)	ASTM D 5147 section 7
[1]Peak Load @ 0°F (average)	75 lbf/inch (13.2 kN/m)	ASTM D 5147 section 7
[1]Elongation @ Peak Load, 73°F (average)	3%	ASTM D 5147 section 7
[1]Elongation @ Peak Load, 0°F (average)	3%	ASTM D 5147 section 7
[1]Ultimate Elongation @ 73°F (average)	50%	ASTM D 5147 section 7
[1]Tear Strength (average)	40 lbf (0.18 kN)	ASTM D 5147 section 8
Water Absorption (maximum)	1%	ASTM D 5147 section 10
Dimensional Stability (maximum)	0.1%	ASTM D 5147 section 11
Low Temperature Flexibility (maximum)	-15°F (-26°C)	ASTM D 5147 section 12
[2]Compound Stability (minimum)	250°F (121°C)	ASTM D 5147 section 16
Cyclic Fatigue	Paradiene 20 SA, bonded to an acceptable Paradiene 30, Paradiene 40 FR, or Parafor 50 LT cap sheet with an approved method of attachment, passes ASTM D 5849 both as-manufactured and after heat conditioning according to ASTM D 5147.	

1. The value reported is the lower of either MD or XD.
2. The High Temperature Stability of the self-adhesive bitumen coating is 212°F (100°C).

PARAFOR 30 TG

Commercial Product Data Sheet

Product Description

Parafor 30 TG is a high performance, modified bitumen finish ply designed for use in homogeneous multi-layer modified bitumen roof membrane systems. Parafor 30 TG consists of a fiberglass scrim/polyester mat composite impregnated and coated with high quality styrene-butadiene-styrene (SBS) modified bitumen, and surfaced with ceramic granules. The back surface is manufactured using a special process that embosses the surface with a grooved pattern to provide optimum burnoff of the plastic film and maximize application rates.

Parafor 30 TG is available with Siplast RoofTag RFID roof asset technology on a Special-Made-To-Order basis. See RoofTag Commercial Product Data Sheet for more information.

Product Uses

Parafor 30 TG is the finish ply of the Siplast Paradiene 20/Parafor 30 TG System and is used as a base flashing where granule-surfaced flashing sheets are required. Parafor 30 TG is lapped 3 inches (7.6 cm) at sides and 6 inches (15.2 cm) at ends. Parafor 30 TG is torch applied. Contact Siplast for specific approval on other product uses.

Product Approvals

Parafor 30 TG is approved by FM Approvals (FM Standard 4470) for use in Parafor Class 1 insulated steel roof deck constructions and insulated and non-insulated concrete roof deck constructions, subject to FM conditions and limitations.

Parafor 30 TG is classified by Underwriters Laboratories for use in $_{c}UL_{us}$ Classified Siplast Parafor Roof Systems. Parafor 30 TG has been classified as a Class C roofing system over combustible, non-combustible, and insulated combustible decks.

Parafor 30 TG meets or exceeds the requirements of ASTM D 6164 Type I, Grade G for SBS-modified bituminous sheet materials using a polyester reinforcement.

Siplast Roof Systems also have received the approval of many regional and local authorities. Please contact Siplast for specific information as required.

Current copies of all Siplast Commercial Product Data Sheets are posted on the Siplast Canada Web site at www.Siplast.com.

COMMERCIAL PRODUCT INFORMATION

Unit	Roll		
Coverage:	1.0 Square		(9.3 m²)
Coverage Weight Per Square:	Min:	114 lb	(5.5 kg/m²)
Roll Length:	Min:	32.8 ft	(10.0 m)
Roll Width:	Avg:	3.28 ft	(1.00 m)
Thickness:	Avg:	161 mils	(4.1 mm)
Thickness at Selvage:	Avg:	122 mils	(3.1 mm)
	Min:	118 mils	(3.0 mm)
Selvage Width:	Avg:	2.75 in	(70 mm)

Selvage Surfacing: Burn-off Polyolefin Film

Top Surfacing: No. 11 ceramic granules, standard color finishes are #93 Bone White and #65 Cinnamon Brown. Contact Siplast for other available colors.

Back Surfacing: Polyolefin burnoff film

Lines: A laying line is placed 3 inches (7.6 cm) from the selvage edge of the material. The line color for this material is blue.

Packaging: Rolls are wound onto a compressed paper tube. The rolls are placed upright on end opposite the selvage on pallets cushioned with corrugated cardboard and are adhered with adhesive at the labels. The top of the palleted rolls is covered with foilized Kraft paper. The palleted material is protected by a heat shrink polyethylene shroud.

Pallet: 41 in X 48 in (104 cm X 122 cm) wooden pallet.
Number Rolls Per Pallet: 20
Number Pallets Per Truckload: 18
Minimum Roll Weight: 114 lb (51.7 kg)

Storage and Handling: All Siplast roll roofing products should be stored on end on a clean flat surface. Care should be taken that rolls are not dropped on ends or edges and are not stored in a leaning position. Deformation resulting from these actions will make proper installation difficult. All roofing should be stored in a dry place, out of direct exposure to the elements, and should not be double stacked. Material should be handled in such a manner as to ensure that it remains dry prior to and during installation.

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PARAFOR 30 TG

Physical and Mechanical Properties

Property (as Manufactured)	Values/Units	Test Method
Thickness (average)	161 mils (4.1 mm)	ASTM D 5147 section 6
Thickness at selvage (minimum) (average)	118 mils (3.0 mm) 122 mils (3.1 mm)	ASTM D 5147 section 6
[1]Peak Load @ 73°F (average)	65 lbf/inch (10.5 kN/m)	ASTM D 5147 section 7
[1]Peak Load @ 0°F (average)	115 lbf/inch (20.1 kN/m)	ASTM D 5147 section 7
[1]Elongation @ Peak Load, 73° F (average)	40%	ASTM D 5147 section 7
[1]Elongation @ Peak Load, 0° F (average)	40%	ASTM D 5147 section 7
[1]Ultimate Elongation @ 73°F (average)	90%	ASTM D 5147 section 7
[1]Tear Strength (average)	100 lbf (0.45 kN)	ASTM D 5147 section 8
Water Absorption (maximum)	1%	ASTM D 5147 section 10
Dimensional Stability (maximum)	0.5%	ASTM D 5147 section 11
Low Temperature Flexibility (maximum)	-15°F (-26°C)	ASTM D 5147 section 12
Granule Embedment Max. avg. loss Max. individual loss	1.5 grams per sample 2.0 grams per sample	ASTM D 5147 section 15
Compound Stability (minimum)	250°F (121°C)	ASTM D 5147 section 16
Cyclic Fatigue	Parafor 30 TG utilized as a single-layer membrane, or bonded to an acceptable Paradiene 20 base ply with an approved method of attachment, passes ASTM D 5849 both as-manufactured and after heat conditioning according to ASTM D 5147.	

Test methods and tolerances: ASTM D 5147, and ASTM D 146 (product weight only)

1. The value reported is the lower of either MD or XD.