NEMO EVALUATION REPORT

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SUBJECT:	**COLPHENE® LM BARR and COLPHENE® LM BARR Spray in Protected Membrane Waterproofing Applications**
SCOPE:	This NEMO Evaluation Report (henceforth 'NER') is issued under F.A.C. Rule 61G20-3 and the applicable rules and regulations governing Product Approval of construction materials in the State of Florida and ISO/IEC 17065 via NEMO|cert. Nemo Evaluations has evaluated the product described herein for compliance with the Code sections noted herein.
CODE:	2024 International Building Code 2018 International Building Code — TDI Third-Party Evaluation Report acceptance 2023 Florida Building Code, 8th Edition 2022 California Building Code 2023 City of Los Angeles Building Code — Section 98.0501, Product Approval, Alternate Materials, Systems, Devices and Methods of Construction
FBC JURISDICTION:	Non-HVHZ and HVHZ
NEMO CATEGORY:	Waterproofing
FBC CATEGORY:	Roofing
FBC SUB-CATEGORY:	Waterproofing
CSI DIVISION:	07 00 00 Thermal and Moisture Protection 07 56 00 Fluid-Applied Roofing
FBC METHOD:	Method 1, Option C – Codified Material, evaluation by Evaluation Entity
COMPLIANCE STATEMENT:	**COLPHENE® LM BARR and COLPHENE® LM BARR Spray Systems**, as produced by **SOPREMA, Inc.**, have demonstrated compliance with the Code sections noted herein through testing in accordance with the referenced Standards, rational analysis and an ongoing quality assurance program. Compliance is subject to the Installation Requirements and Limitations of Use set forth herein.
QUALITY ASSURANCE:	Evidence of current quality assurance shall be listing and labeling in accordance with the requirements of NEMO|cert.
CONTINUED COMPLIANCE:	This NER is valid until such time the named product(s) change, the referenced Quality Assurance changes, or the evaluated Code provisions change. NEMO Evaluations requires, at minimum, a complete review of this NER with each 3-year Code Cycle.
BUILDING PERMIT REQUIREMENTS:	As required by the Building Official or Authority Having Jurisdiction to evaluate the installation of this product.
ADVERTISEMENT:	"NEMO Evaluated" may be displayed in advertising literature. If any portion of the NER is displayed, it shall be displayed in its entirety.
CERTIFICATION OF INDEPENDENCE:	✓ NEMO CERT, LLC has not, nor does it intend to acquire or will they acquire, a financial interest in any company manufacturing or distributing products it evaluates. ✓ NEMO CERT, LLC is not owned, operated, or controlled by any company manufacturing or distributing products it evaluates. ✓ This is a building code evaluation. NEMO CERT, LLC is not, in any way, the Designer of Record for any project on which this NER, or previous versions thereof, is/was used for permitting or design guidance

1. CODES, PROPERTIES AND STANDARDS:

CODE	SECTION	PROPERTY	STANDARD
2018 International Building Code	1504.3.1	Wind resistance	FM 4474 or UL1897
	1504.6	Physical properties	ASTM G155
	1504.7	Impact resistance	FM 4470
	1505.1	Fire classification	UL 790
	1507.11.2	Material standard	ASTM D6163, D6164
	1507.15.2	Material standard	ASTM C836
2024 International Building Code	104.2.3.6.1	Evaluation Reports	ISO/IEC 17065
	1504.4.1	Wind resistance	FM 4474 or UL1897
	1504.7	Impact resistance	FM 4470
	1505.1	Fire Classification	UL 790
	1507.11.2	Material standard	ASTM D6163, D6164
	1507.14.2	Material standard	ASTM C836
2023 Florida Building Code, 8th Edition	1504.3.1	Wind resistance	FM 4474 or UL1897
	1504.6	Physical properties	ASTM G155
	1504.7	Impact resistance	FM 4470
	1505.1, 1516.1	Fire Classification	UL 790
	1507.11.2, TAS 110	Material standard	ASTM D6163, D6164
	1507.15.2	Material standard	ASTM C836
	1523.6.2, TAS 110	Wind resistance	TAS 114, Appendix C, D or J
	TAS 110	Resistance to Foot Traffic	TAS 114, Section 8.9
	TAS 110	Susceptibility to Hail Damage	TAS 114, Appendix F
	TAS 110	Susceptibility to Leakage	TAS 114, Appendix G
2022 California Building Code and	Div. 5, Section 98.0501	Evaluation Reports	
2023 City of Los Angeles Building Code	1504.4.1	Wind resistance	FM 4474 or UL1897
	1504.7	Physical properties	ASTM G155
	1504.8	Impact resistance	FM 4470
	1505.1	Fire Classification	UL 790
	1507.11.2	Material standard	ASTM D6163, D6164
	1507.14.2	Material standard	ASTM C836

2. PRODUCTS:

TABLE 1A: EVALUATED SOPREMA COMPONENTS
(NEMO Certified. Consult Directory of Certified Products for production location(s))

TYPE	PRODUCT NAME	MATERIAL STANDARD REFERENCE	MATERIAL STANDARD TYPE	MATERIAL STANDARD GRADE
LIQUID APPLIED:	COLPHENE LM BARR	ASTM C836	N/A	N/A
	COLPHENE LM BARR Spray	ASTM C836	N/A	N/A
REINFORCEMENT:	POLYFLEECE	N/A	N/A	N/A
	SOPRAFLASH-R	N/A	N/A	N/A
MODIFIED BITUMEN, SMOOTH:	COLPHENE Sanded	ASTM D6163	I	S
	COLPHENE SP 3.0	ASTM D6163	I	S
	COLPHENE 180 Sanded	ASTM D6164	I	S
	COLPHENE Flam 180	ASTM D6164	I	S
MODIFIED BITUMEN, GRANULE:	COLPHENE 180 FR GR	ASTM D6164	I	G

TABLE 1B: EVALUATED SOPREMA ACCESSORIES *(Contact contact@nemocert.com for production location(s) of non-Certified products)*				
TYPE	PRODUCT NAME	MATERIAL STANDARD REFERENCE	MATERIAL STANDARD TYPE	MATERIAL STANDARD GRADE
ADHESIVES:	COLPLY EF Adhesive	N/A	N/A	N/A
	DUOTACK 365	N/A	N/A	N/A
INSULATION:	SOPRA-XPS	ASTM C578	VII	N/A
MODIFIED BITUMEN, SMOOTH	COLPHENE 180 PS	ASTM D6164	I	S
	COLPHENE 180 SP 3.5	ASTM D6164	I	S
DRAINAGE MEDIA:	SOPRADRAIN ECO-2	N/A	N/A	N/A

TABLE 2: COMPONENTS BY OTHERS (4.1.4)				
TYPE	SOPREMA	ACCEPTABLE ALTERNATE	FBC	NOA[1]
INSULATION:	N/A	Styrofoam Brand Highload 60	FL38732	23-1121.01
	N/A	Styrofoam Brand Plazamate		
OVERBURDEN:	N/A	GRT Pedestal / Paver Systems	FL41859 FL46910	N/A
	N/A	Wausau Pedestal / Paver Systems	FL47030 FL47053 FL47054	23-0201.04

3. INSTALLATION:

3.1 **COLPHENE® LM BARR and COLPHENE® LM BARR Spray Systems** shall be installed in accordance with **SOPREMA, Inc.** published installation instructions, subject to the Limitations of Use noted herein.

3.1.1 Insulation Adhesives:

(a) Unless otherwise noted, insulation adhesive application rate is continuous ribbons, maximum 12-inch o.c. Ribbons shall be applied and insulation boards shall be set in accordance with the manufacturer's published instructions. When multiple layers(s) of insulation and/or coverboard are installed in ribbon-applied adhesive, boards shall be staggered from layer-to-layer. The maximum edge distance from the adhesive ribbon to the edge of the insulation board shall be not less than one-half the specified ribbons spacing. When applied to profiled steel roof deck, ribbons shall be applied to the top-flange so as to establish positive-contact with the overlying insulation board.

(b) Unless otherwise noted, all adhered insulations are flat-stock or taper board of the minimum thickness noted. Tapered polyisocyanurate at the following thickness limitations may be substituted with the following Maximum Design Pressure (MDP) limitations. In no case shall these values be used to 'increase' the MDP listings for the selected systems; the lesser MDP applies.

(c) Adhered Insulation, Board Size:

- IBC, CBC and FBC Non-HVHZ: Unless otherwise noted, refer to Section 2.2.10.6.2 of FM Loss Prevention Data Sheet 1-29.
- FBC HVHZ: Bonded polyisocyanurate insulation boards shall be maximum 4 x 4 ft.

3.1.2 Waterproofing Components:

Unless otherwise noted, refer to the following for bonded and liquid applied waterproofing application rates.

TABLE 3: WATERPROOFING APPLICATIONS			
LAYER	REFERENCE	MATERIALS	APPLICATION
SYSTEM:	COLPHENE LM BARR System	Base coat of COLPHENE LM BARR applied at 60-90 wet mils followed by POLYFLEECE or SOPRAFLASH-R into the wet base coat, and top coat of COLPHENE LM BARR applied at 30-60 wet mils.	
	COLPHENE LM BARR Spray System	Base coat of COLPHENE LM BARR Spray applied at 60-90 wet mils followed by POLYFLEECE or SOPRAFLASH-R into the wet base coat, and top coat of COLPHENE LM BARR Spray applied at 30-60 wet mils.	

[1] *Refer to NOA if listed version was superseded to ensure use of latest version.*

TABLE 3: WATERPROOFING APPLICATIONS			
LAYER	REFERENCE	MATERIALS	APPLICATION
BASE PLY OR PLY (OPTIONAL):	SBS-CA2	COLPHENE Sanded, COLPHENE 180 Sanded, COLPHENE 180 PS✧	0.5 to 1-inch wide ribbons COLPLY EF spaced as noted
	SBS-CA3	COLPHENE Sanded, COLPHENE 180 Sanded, COLPHENE 180 PS✧	COLPLY EF Adhesive at 1.5-2.5 gal./sq.
	SBS-TAF	COLPHENE SP 3.0, COLPHENE Flam 180✧, COLPHENE 180 SP 3.5	Torch-Applied, Full Bond
NOTE:	*Base Ply membranes marked with an asterisk (✧) have a poly-film top surface, and require installation of a torch-applied membrane overtop. COLPHENE LM BARR or COLPHENE LM BARR Spray shall not be applied to a poly-film surface.*		
PROTECTION COURSE:	PTC-1	COLPHENE Sanded, COLPHENE 180 Sanded or COLPHENE 180 FR GR	COLPHENE LM BARR at 1.5-2.0 gal./sq.
	PTC-2	COLPHENE Sanded, COLPHENE 180 Sanded or COLPHENE 180 FR GR	COLPHENE LM BARR Spray at 1.5-2.0 gal./sq.

3.1.3 Overburden:

(a) Overburden of soil and plantings (for 'garden roofs', root barriers, filter fabric, drainage components, EPS / XPS insulation, etc.) or concrete topping slabs, that are specified by the Designer of Record, acceptable to the Authority Having Jurisdiction and do not form part of the load path to the waterproofing system, are permissible over the assemblies noted herein with no adverse effect on the wind uplift performance of the waterproofing system.

(b) The Authority Having Jurisdiction may require integrity flood testing (ASTM D5957) or Electric Field Vector Mapping tests of all waterproofing systems prior to placement of overburden materials. Testing, if required by the Authority Having Jurisdiction, should be conducted by a qualified testing agency or professional.

(c) For proprietary overburden components referenced herein, produced by a Product Manufacturer other than the report holder on Page 1 of this NER:

- NEMO CERT, LLC does not purport to have evaluated said components for Code compliance. The scope of evaluation is limited to the as-tested interface of said components with the waterproofing systems.
- Refer to the Approval documentation held by the component manufacturer to confirm Quality Assurance in accordance with **F.A.C. Rule 61G20-3**.
- Florida Specific: Proprietary exterior elevated flooring systems shall demonstrate compliance with **FBC 3115** to the satisfaction of the Authority Having Jurisdiction.

4. LIMITATIONS OF USE:

4.1 General:

4.1.1 This is a building code evaluation. NEMO CERT, LLC is not, in any way, the Designer of Record for any project on which this NER, or previous versions thereof, is/was used for permitting or design guidance. NERs are not to be construed as representing any attributes not specifically listed, nor are NERs to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by NEMO CERT, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

4.1.2 Decks:

(a) This NER pertains to above-deck waterproofing components. Decks and structural members shall be in accordance with applicable Code requirements to the satisfaction of the Authority Having Jurisdiction.

(b) Unless otherwise noted, reference to 'structural concrete' pertains to min. 2,500 psi structural concrete, and excludes 'structural lightweight concrete'.

4.1.3 Fire Classification:

(a) Refer to **IBC, CBC, FBC 1505, FBC HVHZ 1516, UL TGFU.R11436** and the fire classification certificate for the roof cover manufacturer for requirements and limitations regarding roof assembly fire classification.

(b) Refer to **FBC 2603** for requirements and limitations concerning the use of foam plastic insulation.

4.1.4 Quality Assurance:

All components in the roof assembly shall have quality assurance surveillance. Florida Product Approval, this shall be in accordance with **F.A.C. Rule 61G20-3**. For components listed herein that are produced by a manufacturer other than the report holder on Page 1 of this NER, refer to the supporting evidence held by the component manufacturer.

4.2 **Jurisdiction Specific:**

	IBC, CBC, FBC Non-HVHZ	FBC HVHZ
4.2.1	This NER does not include evaluation of roof edge termination. Refer to **IBC 1504.6 or FBC 1504.5** for requirements and limitations regarding edge securement for low-slope roofs.	This NER does not include evaluation of roof edge termination. Refer to **RAS 111** for requirements and limitations regarding edge securement for low-slope roofs.
4.2.2	Refer to **IBC 1512 or FBC 1511** for requirements and limitations regarding recover installations.	Refer to **FBC HVHZ 1521** for requirements and limitations regarding recover installations.
(a)	For mechanical attachment to existing roof decks, fasteners shall be tested for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing shall be in accordance with **ANSI/SPRI FX-1** or **TAS 105**.	For mechanical attachment to existing roof decks, fasteners shall be tested for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing shall be in accordance with **TAS 105**.
(b)	For adhered re-roof (tear off) installation, the existing substrate shall be examined for compatibility with the adhesive. If any surface conditions exist that bring system performance into question, field uplift testing in accordance with **ANSI/SPRI IA-1**, **FM Loss Prevention Data Sheet 1-52** or **TAS 124** shall be conducted on mock-ups of the proposed interface.	For adhered re-roof (tear off) installation, the existing substrate shall be examined for compatibility with the adhesive to be installed. If any surface conditions exist that bring system performance into question, field uplift testing in accordance with **TAS 124** shall be conducted on mock-ups of the proposed interface.
(c)	For adhered recover installation, the existing roof system shall meet project design pressure requirements on its own merit to the satisfaction of the Authority Having Jurisdiction, as documented through field uplift testing in accordance with **FM Loss Prevention Data Sheet 1-52** or **TAS 124**.	For adhered recover installation, the existing roof system shall meet project design pressure requirements on its own merit to the satisfaction of the Authority Having Jurisdiction, as documented through field uplift testing in accordance with **TAS 124**.

4.2.3 Wind Load Resistance:

(a) Refer to Section 4.3 for a tabulated summary of assembly listings and maximum allowable design pressures.

(b)	"MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads, and reflects the ultimate passing pressure divided by 2 (the 2 to 1 margin of safety per **FBC 1504.9** has already been applied). Refer to **IBC / FBC 1609** for determination of design wind loads.	"MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads, and reflects the ultimate passing pressure divided by 2 (the 2 to 1 margin of safety per **TAS 114** has already been applied). Refer to **FBC HVHZ 1620** or **RAS 128** for determination of design wind loads.
(c)	The MDP for the selected assembly shall meet or exceed at least the Zone 1 PRIME design pressure determined in accordance with **IBC / FBC Chapter 16**. Elevated pressure zones shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria. Commonly used methods are **ANSI/SPRI WD1**, **FM Loss Prevention Data Sheet 1-29**, **RAS 117** and **RAS 137**. Assemblies marked with an asterisk* carry the limitations set forth in **Section 2.2.10.1 of FM Loss Prevention Data Sheet 1-29** for Zone 2/3 enhancements.	Assemblies having a MDP < 45.0 psf are not permitted in FBC HVHZ jurisdictions. The MDP for the selected assembly shall meet or exceed at least the Zone 1 PRIME design pressure determined in accordance with **FBC HVHZ 1620** or **RAS 128**. Elevated pressure zones shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria. Analysis shall be in accordance with **RAS 117** or **RAS 137**.
(d)	For fully-adhered installations, the maximum design pressure for the selected assembly shall meet or exceed the critical design pressure. Rational analysis is not permitted.	For assemblies marked with an asterisk*, the maximum design pressure (MDP) limitation shall be applicable to all roof pressure zones. Rational analysis is not permitted.

4.3 System Listings and Allowable Design Pressures: See Section 4.2.3

ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE

TABLE	DECK	APPLICATION	TYPE	DESCRIPTION		PAGE
				SYSTEM	INSTALLATION	
4A	Structural concrete	New, Reroof (Tear-Off)	A-2	COLPHENE LM BARR or LM BARR SPRAY	Bonded Waterproofing, Insulation	7
4B	Structural concrete	New, Reroof (Tear Off)	F	COLPHENE LM BARR	Non-Insulated, Bonded Waterproofing	8
4C	Structural concrete	New, Reroof (Tear Off)	F	COLPHENE LM BARR SPRAY	Non-Insulated, Bonded Waterproofing	10

TABLE 4A: STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-2: COLPHENE LM BARR OR COLPHENE LM BARR SPRAY: BONDED ROOF, BONDED INSULATION									
SYS NO.	DECK (4.1.2, 4.2.2)	WATERPROOFING (3.1.2)				INSULATION		OVERBURDEN (3.1.3)	MDP (PSF)
		BASE PLY	PLY	SYSTEM	PROTECTION COURSE	TYPE	ATTACH (3.1.1)		
C-1.	Structural concrete	(Optional) SBS-CA2, 6-inch o.c. or SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR System	PTC-1	Min. 1.5-inch SOPRA-XPS or Dupont Styrofoam Brand Highload 60 or Styrofoam Brand Plazamate	DUOTACK 365	Drainage board and structural concrete topping slab	N/A
C-2.	Structural concrete	(Optional) SBS-CA2, 6-inch o.c. or SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR Spray system	PTC-2	Min. 1.5-inch SOPRA-XPS or Dupont Styrofoam Brand Highload 60 or Styrofoam Brand Plazamate	DUOTACK 365	Drainage board and structural concrete topping slab	N/A
C-3.	Structural concrete	SBS-CA2, 6-inch o.c.	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR Spray system	PTC-2	Min. 1.5-inch SOPRA-XPS (min. 60-psi) or Dupont Styrofoam Brand Highload 60 or Styrofoam Brand Plazamate	DUOTACK 365	As specified by the Designer of Record and acceptable to the AHJ or Min. 12x12-inch ceramic plaza deck tiles or min. 12x12-inch concrete pavers embedded into dry-set Portland cement mortar (ANSI A118.1) in accordance with ANSI A108.5.	-180.0
C-4.	Structural concrete	SBS-CA2, 6-inch o.c.	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR Spray system	PTC-2	Min. 1.5-inch SOPRA-XPS (min. 60-psi)	DUOTACK 365	Wausau Hidden Lok-Down System: ✓ Installed in accordance with Wausau Tile requirements. ✓ The Terra-Stand base is fully adhered using 3M™ Scotch-Weld™ Pedestal Adhesive DP6330NS applied at ~50 mL (1.7 fluid oz) per base.	-180.0
C-5.	Structural concrete	SBS-CA2, 6-inch o.c.	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR Spray system	PTC-2	Min. 1.5-inch Dupont Styrofoam Brand Highload 60 or Styrofoam Brand Plazamate	DUOTACK 365	Wausau Hidden Lok-Down System: ✓ Installed in accordance with Wausau Tile requirements. ✓ The Terra-Stand base is fully adhered using 3M™ Scotch-Weld™ Pedestal Adhesive DP6330NS applied at 2.25 fl. oz. per base.	-180.0
C-6.	Structural concrete	SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR Spray system	PTC-2	Min. 1.5-inch SOPRA-XPS (min. 60-psi) or Dupont Styrofoam Brand Highload 60 or Styrofoam Brand Plazamate	DUOTACK 365	As specified by the Designer of Record and acceptable to the AHJ or Min. 12x12-inch ceramic plaza deck tiles or min. 12x12-inch concrete pavers embedded into dry-set Portland cement mortar (ANSI A118.1) in accordance with ANSI A108.5.	-185.0
C-7.	Structural concrete	SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR Spray system	PTC-2	Min. 1.5-inch SOPRA-XPS (min. 60-psi)	DUOTACK 365	Wausau Hidden Lok-Down System: ✓ Installed in accordance with Wausau Tile requirements. ✓ The Terra-Stand base is fully adhered using 3M™ Scotch-Weld™ Pedestal Adhesive DP6330NS applied at ~50 mL (1.7 fluid oz) per base.	-185.0

TABLE 4A: STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-2: COLPHENE LM BARR OR COLPHENE LM BARR SPRAY: BONDED ROOF, BONDED INSULATION									
SYS NO.	DECK (4.1.2, 4.2.2)	WATERPROOFING (3.1.2)				INSULATION		OVERBURDEN (3.1.3)	MDP (PSF)
		BASE PLY	PLY	SYSTEM	PROTECTION COURSE	TYPE	ATTACH (3.1.1)		
C-8.	Structural concrete	SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR Spray system	PTC-2	Min. 1.5-inch Dupont Styrofoam Brand Highload 60 or Styrofoam Brand Plazamate	DUOTACK 365	Wausau Hidden Lok-Down System: ✓ Installed in accordance with Wausau Tile requirements. ✓ The Terra-Stand base is fully adhered using 3M™ Scotch-Weld™ Pedestal Adhesive DP6330NS applied at 2.25 fl. oz. per base.	-185.0
C-9.	Structural concrete	(Optional) SBS-CA3 or SBS-TAF	(Optional) SBS-CA3 or SBS-TAF	COLPHENE LM BARR Spray system	PTC-2	Min. 1.5-inch SOPRA-XPS (min. 60-psi)	DUOTACK 365	Wausau Hidden Lok-Down System: ✓ Installed in accordance with Wausau Tile requirements. ✓ The Terra-Stand base is fully adhered using 3M™ Scotch-Weld™ Pedestal Adhesive DP6330NS applied at ~50 mL (1.7 fluid oz) per base.	-230.0
C-10.	Structural concrete	(Optional) SBS-CA3 or SBS-TAF	(Optional) SBS-CA3 or SBS-TAF	COLPHENE LM BARR Spray system	PTC-2	Min. 1.5-inch SOPRA-XPS (min. 60-psi) or Dupont Styrofoam Brand Highload 60 or Styrofoam Brand Plazamate	DUOTACK 365	As specified by the Designer of Record and acceptable to the AHJ or Min. 12x12-inch ceramic plaza deck tiles or min. 12x12-inch concrete pavers embedded into dry-set Portland cement mortar (ANSI A118.1) in accordance with ANSI A108.5.	-255.0
C-11.	Structural concrete	(Optional) SBS-CA3 or SBS-TAF	(Optional) SBS-CA3 or SBS-TAF	COLPHENE LM BARR Spray system	PTC-2	Min. 1.5-inch Dupont Styrofoam Brand Highload 60 or Styrofoam Brand Plazamate	DUOTACK 365	Wausau Hidden Lok-Down System ✓ Installed in accordance with Wausau Tile requirements. ✓ The Terra-Stand base is fully adhered using 3M™ Scotch-Weld™ Pedestal Adhesive DP6330NS applied at 2.25 fl. oz. per base.	-255.0

TABLE 4B: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE F: COLPHENE LM BARR: NON-INSULATED, BONDED ROOF COVER								
SYS. NO.	DECK (4.1.2, 4.2.2)	WATERPROOFING (3.1.2)				DRAINAGE	OVERBURDEN (3.1.3)	MDP (PSF)
		BASE PLY	PLY	SYSTEM	PROTECTION COURSE			
C-12.	Structural concrete	(Optional) SBS-CA2, 6-inch o.c. or SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR system	PTC-1	None	Drainage board and structural concrete topping slab	N/A

TABLE 4B: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE F: COLPHENE LM BARR: NON-INSULATED, BONDED ROOF COVER								
SYS. NO.	DECK (4.1.2, 4.2.2)	WATERPROOFING (3.1.2)				DRAINAGE	OVERBURDEN (3.1.3)	MDP (PSF)
		BASE PLY	PLY	SYSTEM	PROTECTION COURSE			
C-13.	Structural concrete	(Optional) SBS-CA2, 6-inch o.c. or SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR system	PTC-1	None	Wausau Lok-Down System or Hidden Lok-Down System: ✓ Installed in accordance with Wausau Tile requirements. ✓ Lok-Down base or Terra-Stand base set in DUOTACK 365 (full-coverage). ✓ Terra-Stand core and top components (if used) set in DUOTACK 365 (full-coverage).	-97.5
C-14.	Structural concrete	None	None	COLPHENE LM BARR system	PTC-1	None	Greenrise Technologies 24x24-inch GRT Pedestal / Paver System: ✓ installed in accordance with Greenrise Technologies requirements with 2-inch GRT Concrete Pavers fastened using GRT Fastening Kit. ✓ GRT Pedestal base is fully adhered using 3M™ Scotch-Weld™ Pedestal Adhesive DP6330NS.	-137.5
C-15.	Structural concrete	SBS-CA2, 6-inch o.c.	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR system	PTC-1	(Optional) SOPRADRAIN ECO-2 bonded with DUOTACK 365, 6-inch spots in 12 x 12-inch grid (1 per 1 ft^2)	As specified by the Designer of Record and acceptable to the AHJ or Minimum nominal 12 x 12 x 1-inch concrete pavers in ANSI A118.1 dry set mortar, ¼-inch notched trowel per ANSI A108.5	-180.0
C-16.	Structural concrete	(Optional) SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR system	PTC-1	(Optional) SOPRADRAIN ECO-2 bonded with DUOTACK 365, 6-inch spots in 12 x 12-inch grid (1 per 1 ft^2)	As specified by the Designer of Record and acceptable to the AHJ or Minimum nominal 12 x 12 x 1-inch concrete pavers in ANSI A118.1 dry set mortar, ¼-inch notched trowel per ANSI A108.5	-252.5
C-17.	Structural concrete	SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR system	PTC-1	None	As specified by the Designer of Record and acceptable to the AHJ or Minimum nominal 12 x 12 x 1-inch concrete pavers in ANSI A118.1 dry set mortar, ¼-inch notched trowel per ANSI A108.5	-270.0
C-18.	Structural concrete	None	None	COLPHENE LM BARR system	PTC-1	None	As specified by the Designer of Record and acceptable to the AHJ or Minimum nominal 12 x 12 x 1-inch concrete pavers in ANSI A118.1 dry set mortar, ¼-inch notched trowel per ANSI A108.5	-342.5
C-19.	Structural concrete	None	None	COLPHENE LM BARR system	PTC-1	None	As specified by the Designer of Record and acceptable to the AHJ or Minimum nominal 12 x 12 x 1-inch concrete pavers in ANSI A118.1 dry set mortar, ¼-inch notched trowel per ANSI A108.5	-515.0

TABLE 4C: STRUCTURAL CONCRETE DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE F: COLPHENE LM BARR SPRAY: NON-INSULATED, BONDED ROOF COVER								
SYS. NO.	DECK (4.1.2, 4.2.2)	WATERPROOFING (3.1.2)				DRAINAGE	OVERBURDEN (3.1.3)	MDP (PSF)
		BASE PLY	PLY	SYSTEM	PROTECTION COURSE			
C-20.	Structural concrete	(Optional) SBS-CA2, 6-inch o.c. or SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR Spray system	PTC-2	None	Drainage board and structural concrete topping slab	N/A
C-21.	Structural concrete	(Optional) SBS-CA2, 6-inch o.c. or SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR Spray system	PTC-2	None	Wausau Lok-Down System or Hidden Lok-Down System: ✓ Installed in accordance with Wausau Tile requirements. ✓ Lok-Down base or Terra-Stand base set in DUOTACK 365 (full-coverage). ✓ Terra-Stand core and top components (if used) set in DUOTACK 365 (full-coverage).	-97.5
C-22.	Structural concrete	None	None	COLPHENE LM BARR Spray system	PTC-2	None	Greenrise Technologies 24x24-inch GRT Pedestal / Paver System: ✓ installed in accordance with Greenrise Technologies requirements with 2-inch GRT Concrete Pavers fastened using GRT Fastening Kit. ✓ GRT Pedestal base is fully adhered using 3M™ Scotch-Weld™ Pedestal Adhesive DP6330NS.	-137.5
C-23.	Structural concrete	None	None	COLPHENE LM BARR Spray system	PTC-2 (COLPHENE 180 FR GR only)	None	Wausau Hidden Lok-Down System: ✓ installed in accordance with Wausau Tile requirements. ✓ The Terra-Stand base is fully adhered using 3M™ Scotch-Weld™ Pedestal Adhesive DP6330NS applied at 2.25 fl. oz. per base.	-157.5
C-24.	Structural concrete	SBS-CA2, 6-inch o.c.	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR Spray system	PTC-2	(Optional) SOPRADRAIN ECO-2 bonded with DUOTACK 365, 6-inch spots in 12 x 12-inch grid (1 per 1 ft^2)	As specified by the Designer of Record and acceptable to the AHJ or Minimum nominal 12 x 12 x 1-inch concrete pavers in ANSI A118.1 dry set mortar, ¼-inch notched trowel per ANSI A108.5	-180.0
C-25.	Structural concrete	(Optional) SBS-CA3	(Optional) SBS-CA3 or SBS-TAF (sanded top)	COLPHENE LM BARR Spray system	PTC-2	(Optional) SOPRADRAIN ECO-2 bonded with DUOTACK 365, 6-inch spots in 12 x 12-inch grid (1 per 1 ft^2)	As specified by the Designer of Record and acceptable to the AHJ or Minimum nominal 12 x 12 x 1-inch concrete pavers in ANSI A118.1 dry set mortar, ¼-inch notched trowel per ANSI A108.5	-185.0
C-26.	Structural concrete	SBS-CA3 or SBS-TAF	(Optional) SBS-CA3 or SBS-TAF	COLPHENE LM BARR Spray system	PTC-2	(Optional) SOPRADRAIN ECO-2 bonded with DUOTACK 365, 6-inch spots in 12 x 12-inch grid (1 per 1 ft^2)	As specified by the Designer of Record and acceptable to the AHJ or Min. 12x12-inch ceramic plaza deck tiles or minimum nominal 12 x 12 x 1-inch concrete pavers embedded into dry-set Portland cement mortar (ANSI A118.1) in accordance with ANSI A108.5.	-270.0
C-27.	Structural concrete	(Optional) SBS-TAF	(Optional) SBS-TAF	COLPHENE LM BARR Spray system	PTC-2 (COLPHENE 180 FR GR only)	None	As specified by the Designer of Record and acceptable to the AHJ or Min. 12x12-inch ceramic plaza deck tiles or minimum nominal 12 x 12 x 1-inch concrete pavers embedded into dry-set Portland cement mortar (ANSI A118.1) in accordance with ANSI A108.5.	-457.5
C-28.	Structural concrete	(Optional) SBS-TAF	(Optional) SBS-TAF	COLPHENE LM BARR Spray system	PTC-2	SOPRADRAIN ECO-2 bonded with DUOTACK 365, 6-inch spots in 12 x 12-inch grid (1 per 1 ft^2)	As specified by the Designer of Record and acceptable to the AHJ or Minimum nominal 12 x 12 x 1.5-inch concrete pavers in ANSI A118.1 dry set mortar, ¼-inch notched trowel per ANSI A108.5	-472.5