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NEMO EVALUATION REPORT (NER)

SOPREMA, Inc.
310 Quadral Drive
Wadsworth, OH 44281
(800) 356-3521

SUBJECT:	**SOPREMA Roof Systems for use on Hurricane and Tornado Shelters**
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:	2018, 2021, 2024 International Building Code® TDI Third Party Evaluation Report Acceptance 2023 Florida Building Code
NEMO CATEGORY:	Modified Bitumen Liquid Applied Roof System
CSI DIVISION:	07 00 00 Thermal and Moisture Protection 07 00 00 Thermal and Moisture Protection 07 52 00 Modified Bitumen Sheet Roofing 07 56 00 Fluid-Applied Roofing
EVALUATED PROPERTIES:	Physical properties Impact resistance (hurricane shelter and tornado shelter)
COMPLIANCE STATEMENT:	**SOPREMA Roof Systems**, as produced by **SOPREMA, Inc.**, have demonstrated compliance with **2020 ICC 500** and **2023 ANSI/ICC 500** ICC/NSSA Standard for the Design and Construction of Storm Shelters requirements for use on hurricane and tornado shelters. 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/or 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 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:	1. NEMO CERT, LLC has not, nor do they intend to acquire or will they acquire, a financial interest in any company manufacturing or distributing products it evaluates. 2. NEMO CERT, LLC is not owned, operated or controlled by any company manufacturing or distributing products it evaluates. 3. 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.

LINK TO TOP OF ATTACHMENT REQUIREMENTS

ISO/IEC 17065 PCA-145

ISO/IEC 17020 AA-779

1. CODES, PROPERTIES AND STANDARDS:

Code	Section	Property	Standard
2021 International Building Code®	202, 423.2	Impact resistance	ICC 500
	1507.11.2	Material Standard	ASTM D6164
2024 International Building Code®	202, 423.2	Impact resistance	ICC/NSSA 500
	1507.11.2	Material Standard	ASTM D6164
2023 Florida Building Code	202, 423.1, 453.25.4	Impact resistance	ICC 500
	1507.11.2	Material Standard	ASTM D6164

2. PRODUCTS:

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

TYPE	PRODUCT	MATERIAL STANDARD		
		REFERENCE	TYPE	GRADE
MECHANICALLY ATTACHED SBS MEMBRANES	SOPRAFIX Base 612	ASTM D6164	I	S
	SOPRAFIX Base 613	ASTM D6164	I	S
	SOPRAFIX Base 622	ASTM D6164	I	S
	SOPRAFIX Base 614	ASTM D6164	II	S
BASE PLY AND PLY MEMBRANES	SOPRALENE 180 PS 2.2	ASTM D6164	I	S
	SOPRALENE 180 PS 3.0	ASTM D6164	I	S
	SOPRALENE 180 Sanded	ASTM D6164	I	S
	SOPRALENE 180 Sanded 2.2	ASTM D6164	I	S
	SOPRALENE 180 SP 3.0	ASTM D6164	I	S
	SOPRALENE 180 SP 3.5	ASTM D6164	I	S
	SOPRALENE Flam 180	ASTM D6164	I	S
	SOPRALENE 250 Sanded	ASTM D6164	II	S
	SOPRALENE 250 SP	ASTM D6164	II	S
	SOPRALENE Flam 250	ASTM D6164	II	S
CAP PLY MEMBRANES	SOPRALENE 180 FR GR	ASTM D6164	I	G
	SOPRALENE Flam 180 FR GR	ASTM D6164	I	G
	SOPRALENE Flam 180 GR	ASTM D6164	I	G
LIQUID APPLIED ROOF COMPONENTS	ALSAN RS 230 Field or Flash	M-D 13-1362		
	ALSAN TRAFIK RS 730 Field or Flash			
	ALSAN RS Fleece			
SURFACING	ALSAN Trafik RS 733 Self-Leveling Mortar, mixture of:	NEMO-VPA 25-0001		
	ALSAN Trafik RS 733, Part A			
	ALSAN Trafik RS 733, Part B			

TABLE 1B: EVALUATED SOPREMA COMPONENTS
(Contact contact@nemocert.com for production location(s) of non-Certified products)

TYPE	PRODUCT	MATERIAL STANDARD		
		REFERENCE	TYPE	GRADE
CAP PLY MEMBRANES	SOPRALENE 250 FR GR	ASTM D6164	II	G
	SOPRALENE Flam 250 FR GR	ASTM D6164	II	G
PRIMERS	ALSAN RS 222 Primer	N/A		
	ALSAN RS 276 Primer	N/A		

3. INSTALLATION:

3.1 **SOPREMA Roof Systems for use on Hurricane and Tornado Shelters** shall be installed in accordance with **SOPREMA** published installation instructions, subject to the Limitations of Use herein.

3.1.1 Unless otherwise noted, sub-assembly components may be adhered or mechanically attached.

TABLE 2A: MODIFIED BITUMEN MEMBRANE / ADHESIVE COMBINATIONS

REFERENCE	LAYER	MATERIALS	APPLICATION
SBS-CA2	Base Ply:	SOPRALENE 180 Sanded 2.2, SOPRALENE 180 Sanded, SOPRALENE 180 PS 2.2✧, SOPRALENE 180 PS 3.0✧ or SOPRALENE 250 Sanded	**COLPLY EF Adhesive** ribbons
SBS-CA3	Base Ply or Ply:	SOPRALENE 180 Sanded 2.2, SOPRALENE 180 Sanded, SOPRALENE 180 PS 2.2✧, SOPRALENE 180 PS 3.0✧ or SOPRALENE 250 Sanded	**COLPLY EF Adhesive** at 1.5-2.5 gal / square
	Cap Ply:	SOPRALENE 180 FR GR or SOPRALENE 250 FR GR	
SBS-CA4	Base Ply or Ply:	SOPRALENE 180 Sanded 2.2, SOPRALENE 180 Sanded, SOPRALENE 180 PS 2.2✧, SOPRALENE 180 PS 3.0✧ or SOPRALENE 250 Sanded	**COLPLY Adhesive** at 1.5-2.0 gal / square
	Cap Ply:	SOPRALENE 180 FR GR or SOPRALENE 250 FR GR	
SBS-AA	Base Ply or Ply:	SOPRALENE 180 Sanded 2.2, SOPRALENE 180 Sanded, SOPRALENE 180 PS 2.2✧, SOPRALENE 180 PS 3.0✧ or SOPRALENE 250 Sanded	**Hot asphalt** at 20-40 lbs/square
	Cap Ply:	SOPRALENE 180 FR GR or SOPRALENE 250 FR GR	
SBS-AA2	Base Ply or Ply:	SOPRALENE 180 Sanded 2.2, SOPRALENE 180 Sanded, SOPRALENE 180 PS 2.2✧, SOPRALENE 180 PS 3.0✧ or SOPRALENE 250 Sanded	**SOPRASPHALT M** at 25 lbs/square
	Cap Ply:	SOPRALENE 180 FR GR or SOPRALENE 250 FR GR	
SBS-TAF	Base Ply or Ply:	SOPRALENE Flam 180✧, SOPRALENE 180 SP 3.0, SOPRALENE 180 SP 3.5, SOPRALENE Flam 250✧ or SOPRALENE 250 SP	**Torch-Applied**, Full Bond
	Cap Ply:	SOPRALENE Flam 180 GR, SOPRALENE Flam 180 FR GR or SOPRALENE Flam 250 FR GR	
Notes:	Base / Ply membranes marked with an asterisk (✧) have a poly-film top surface, and require installation of a torch-applied membrane overtop.		

TABLE 2B: ALSAN RS COMPONENTS AND APPLICATION RATES:

PRODUCT	RATE
ALSAN RS 222 Primer (“RS 222”)	1 gal/square
ALSAN RS 276 Primer (“RS 276”)	1 gal/square
AQUAFIN VAPORTIGHT COAT-SG3 (“AVC-SG3”)	Refer to AQUAFIN, Inc. published requirements.
ALSAN RS 230 system	Base coat of ALSAN RS 230 applied at 3.9 gal/sq. followed by ALSAN RS Fleece into the wet base coat, and top coat of ALSAN RS 230 at 1.9 gal/sq.
ALSAN Trafik RS 730 system	Base coat of ALSAN Trafik RS 730 applied at 3.9 gal/sq. followed by ALSAN RS Fleece into the wet base coat, and top coat of ALSAN Trafik RS 730 at 1.9 gal/sq.
ALSAN Trafik RS 733 Self-Leveling Mortar	1.8 gal/square (85-95 wet mils)

4. LIMITATIONS OF USE:

4.1 This is a building code evaluation. NEMO CERT, LLC are 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 NER, or as to any product covered by the NER.

4.2 This NER covers use of the subject product on Hurricane and Tornado Storm Shelters, and does not purport to evaluate for use on Emergency Shelters.

4.3 This NER does not include evaluation of wind resistance. Refer to research reports or certification listings from approved sources, such as Florida Product Approval, Miami-Dade NOAs, FM RoofNav Listings or UL TGIK Listings.

4.3.1 Roof assemblies shall be designed using design wind speeds set forth in ICC-500, and be tested to minimum 1.2 times design pressure.

4.4 This NER does not include evaluation of fire classification. Refer to UL TGFU.R11436 certification listings for external fire classifications.

4.5 Refer to Table 3A and Table 3B for systems having met ICC 500 impact resistance requirements for use on Hurricane Storm Shelters and Tornado Storm Shelters, respectively.

4.6 The products in Tables 1A and 1B are produced under an in-house quality control program which is under surveillance by NEMO|cert. in accordance with IBC Section 104.4 and 110.4. For components listed in Table 3A and Table 3B produced by a Manufacturer other than the report holder, refer to the approvals held by the component manufacturer.

TABLE 3A: IMPACT RESISTANT ASSEMBLIES PER ICC-500
HURRICANE STORM SHELTERS

SHELTER TYPE:	Hurricane
SURFACE TYPE:	Horizontal (roof)
Missile size:	9 lb 2x4
Design Wind Speed:	220 mph
Missile speed:	0.10 x design wind speed = 22 mph
Criteria 1:	No missile penetration through deck, per ICC-500
Criteria 2:	No missile penetration through roof cover

SYSTEM NO.	DECK	INSULATION (NOTE 3.1.1)	COVERBOARD (NOTE 3.1.1)	BASE SHEET	ROOF COVER (TABLE 2A)		
					BASE PLY	PLY	CAP PLY
H-1.	Min. 22 ga., Type B, Grade 40 steel at min. 6 ft span or structural concrete	Min. 1.5-inch SOPRA ISO	Min. 0.25-inch SOPRABOARD or SOPRABOARD HS	None	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	(Optional) SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF
H-2.	Min. 22 ga., Type B, Grade 40 steel at min. 6 ft span or structural concrete	Min. 1.5-inch SOPRA ISO	Min. 0.5-inch G-P Gypsum "DensDeck Prime", National Gypsum "DEXcell FA Glass Mat Roof Board or USG "SECUROCK Gypsum-Fiber Roof Board"	None	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	(Optional) SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF
H-3.	Min. 22 ga., Type B, Grade 40 steel at min. 6 ft span or structural concrete	Min. 1.5-inch SOPRA ISO	Min. 7/16-inch National Gypsum "DEXcell Cement Roof Board	None	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	(Optional) SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF
H-4.	Min. 22 ga., Type B, Grade 40 steel at min. 6 ft span or structural concrete	Min. 300 psi, min. 2-inch thick cellular lightweight concrete	None	None	SBS-CA2	(Optional) SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF

TABLE 3A: IMPACT RESISTANT ASSEMBLIES PER ICC-500
HURRICANE STORM SHELTERS

SHELTER TYPE:	Hurricane
SURFACE TYPE:	Horizontal (roof)
Missile size:	9 lb 2x4
Design Wind Speed:	220 mph
Missile speed:	0.10 x design wind speed = 22 mph
Criteria 1:	No missile penetration through deck, per ICC-500
Criteria 2:	No missile penetration through roof cover

SYSTEM NO.	DECK	INSULATION (NOTE 3.1.1)	COVERBOARD (NOTE 3.1.1)	BASE SHEET	ROOF COVER (TABLE 2A)		
					BASE PLY	PLY	CAP PLY
H-5.	Min. 22 ga., Type B, Grade 40 steel at min. 6 ft span or structural concrete	Min. 300 psi, min. 2-inch thick cellular lightweight concrete	None	SOPRAFIX Base 612, 613 or 614 mech. attached	(Optional) SBS-TAF	(Optional) SBS-TAF	SBS-TAF
H-6.	Min. 22 ga., Type B, Grade 40 steel at min. 6 ft span or structural concrete	Min. 300 psi, min. 2-inch thick cellular lightweight concrete	None	SOPRAFIX Base 622, mech. attached	(Optional) SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	(Optional) SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF
H-7.	Min. 22 ga., Type B, Grade 40 steel at min. 6 ft span or structural concrete	Min. 1.5-inch SOPRA ISO	Min. 0.25-inch SOPRABOARD or min. 0.125-inch SOPRABOARD HS, min. 0.5-inch G-P Gypsum "DensDeck Prime", National Gypsum "DEXcell FA Glass Mat Roof Board or USG "SECUROCK Gypsum-Fiber Roof Board" or min. 7/16-inch National Gypsum "DEXcell Cement Roof Board	SOPRAFIX Base 612, 613 or 614 mech. attached	(Optional) SBS-TAF	(Optional) SBS-TAF	SBS-TAF
H-8.	Min. 22 ga., Type B, Grade 40 steel at min. 6 ft span or structural concrete	Min. 1.5-inch SOPRA ISO	Min. 0.25-inch SOPRABOARD or min. 0.125-inch SOPRABOARD HS, min. 0.5-inch G-P Gypsum "DensDeck Prime", National Gypsum "DEXcell FA Glass Mat Roof Board or USG "SECUROCK Gypsum-Fiber Roof Board" or min. 7/16-inch National Gypsum "DEXcell Cement Roof Board	SOPRAFIX Base 622, mech. attached	(Optional) SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	(Optional) SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF

TABLE 3B: IMPACT RESISTANT ASSEMBLIES PER ICC-500
TORNADO STORM SHELTERS

SHELTER TYPE:	Tornado
SURFACE TYPE:	Horizontal (roof)
Missile size:	15 lb 2x4
Design Wind Speed:	250 mph
Missile speed:	67 mph
Criteria 1:	No missile penetration through deck, per ICC-500
Criteria 2:	No missile penetration through secondary roof cover

SYSTEM NO.	DECK*	SECONDARY MEMBRANE (TABLE 2A)		INSULATION	COVERBOARD	PRIMER	PRIMARY ROOF COVER (TABLE 2A)		
		BASE PLY	CAP PLY				BASE PLY	PLY	CAP PLY
T-1.	structural concrete	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	Min. 2-layers, min. 2-inch SOPRA ISO, fully or	Min. 0.625-inch G-P Gypsum "DensDeck Prime", National Gypsum "DEXcell FA Glass Mat Roof Board" or USG "SECUROCK Gypsum-Fiber	(Optional) ELASTOCOL 500	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	(Optional) SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF	SBS-CA3, SBS-CA4, SBS-AA or SBS-TAF

TABLE 3B: IMPACT RESISTANT ASSEMBLIES PER ICC-500 TORNADO STORM SHELTERS	
SHELTER TYPE:	Tornado
SURFACE TYPE:	Horizontal (roof)
Missile size:	15 lb 2x4
Design Wind Speed:	250 mph
Missile speed:	67 mph
Criteria 1:	No missile penetration through deck, per ICC-500
Criteria 2:	No missile penetration through secondary roof cover

SYSTEM NO.	DECK*	SECONDARY MEMBRANE (TABLE 2A)		INSULATION	COVERBOARD	PRIMER	PRIMARY ROOF COVER (TABLE 2A)		
		BASE PLY	CAP PLY				BASE PLY	PLY	CAP PLY
				partially adhered	Roof Board", fully or partially adhered				

SYSTEM NO.	DECK*	SECONDARY MEMBRANE (TABLE 2A)		INSULATION	COVERBOARD	PRIMER	PRIMARY ROOF COVER (TABLE 2B)
		BASE PLY	CAP PLY				
T-2.	structural concrete	None	None	None	None	RS 222, RS 276 or AVC-SG3	ALSAN RS 230 system or ALSAN Trafik RS 730 system surfaced with ALSAN Trafik RS 733 Self-Leveling Mortar

** The as-tested condition consisted of Min. 4-inch thick, min. 7,000-psi cast-in-place concrete with #3 reinforcing bars at 6-inch o.c. in both directions. The structural concrete deck shall be designed and installed such that it can withstand the impact energy requirements of ICC-500 to the satisfaction of the Authority Having Jurisdiction.*

- END OF NER -