



## WATSKY ASSOCIATES, INC.

20 Madison Avenue, Valhalla, New York 10595 / 914 948-3450 Fax 914 948-9493

Yonkers Public Schools  
One Larkin Center  
Yonkers, NY 10701

April 02, 2019  
via email only

Att: Lee Pavone, P.E. and John Becker  
Re: Roosevelt High School - Roof Blow Off  
631 Tuckahoe Road, Yonkers, NY 10710

Gentlemen:

On Wednesday morning, February 26, 2109, we inspected the High School roof where a portion "blew off" late in the day on Tuesday, February 25, 2019.

Reduced size prints of the photos we took, and a schematic roof plan with the blow off area identified are attached. (Some of the photos illustrate work being performed under a current masonry restoration project, and have nothing to do with the blow off. We included them, to avoid any confusion that missing photos in the numbering sequence might cause.)

In summary, we observed that the modified bitumen roof membrane, as well as the cover board substrate, blew off from an irregular shaped area of approximately 1,400 square feet - along the western edge of Roof Area R. (The individual sections of roof on this school were identified on the attached schematic roof plan when the mandatory NYS 2015 Building Condition Inspections occurred.)

We specifically observed that the underlying isocyanurate roof insulation remained intact and secured to the tongue and groove wood deck; despite the incorrect and irregular positions of the screws & discs used to secure the insulation - and we observed that the perimeter wood blocking along the eave remained intact. Refer to Photos 2276, 2280, 2281, 2282 and 2283.

We also observed that the foam adhesive used to install the cover board was applied in a haphazard pattern, that the cover board and roof covering were completely "gone" from the blow off area, and that there were essentially no remnants of cover board embedded in the foam adhesive. We understand you had the masonry restoration contractor remove loose roofing and cover board debris from the adjoining flat roof and grounds during the evening on February 25, to make the school safe for Teacher & Student occupancy on the 26th.

We discussed our observations with you following our inspection. We recommended that you immediately have the exposed blow off area temporarily covered, especially with snow in the forecast for February 27, 2019. Work to install a temporary patch began later that day; the patch was finished before snow began to fall on February 27, 2019.

You said that the roof in question was installed in 2010, by VMG Group, using Soprema products, and that Soprema provided a 20 Year Premium NDL Roof Warranty # 101-003862, with 73 mph wind speed coverage. (Copy attached.) I explained that "unofficial" weather data from the internet showed February 26 was a typical late winter "windy day"- albeit the winds were not anything like 73 mph; and I advised you to make a warranty claim for the permanent roof repairs needed.

We also discussed damage to an HVAC unit on the roof adjoining the blow off, which was probably struck by flying roof debris - and the likelihood that other sections of roofing installed by VMG Group (using the same techniques and Soprema products) were vulnerable to blow off. You said the District would repair the HVAC unit; we did not decide how to address the possibility of future blow offs.

continued

Att: Lee Pavone, PE and John Becker

Re: Roosevelt High School - Roof Blow Off

I understand Soprema denied the warranty claim you made to repair the blow off, that Soprema opined the roof experienced "microburst wind damage", and that Soprema recommended you retain a professional experienced in the forensic evaluation of roof systems. Refer to Soprema's letter of March 8, 2019 letter, copy also attached.

My firm and I have over 40 years of experience evaluating roof systems, including damage to roof systems from wind storms. I have been qualified as an "expert" in this field by numerous courts in NY and NJ, and I routinely provide expert opinions about roof damage to attorneys and insurance companies.

A "microburst" is defined by the National Weather Service as "a localized column of sinking air (downdraft) within a thunderstorm". There was no thunder storm or microburst at the Roosevelt High School on February 25, 2019.

Peak wind gusts at the Roosevelt High School on February 25, 2019 ranged from 52 to 59 mph - well under the 73 mph warranty limit. Refer to the attached report from CompuWeather Forensic Weather Experts.

I recommend you share this report with Soprema and ask them to reconsider the claim.

Very truly yours,  
WATSKY ASSOCIATES INC



Thomas Olam, President

Yonkers Public Schools: Roosevelt HS Roof Blow Off 2/25/2019 Photos taken 2/26/2019 by Watsky Associates Inc



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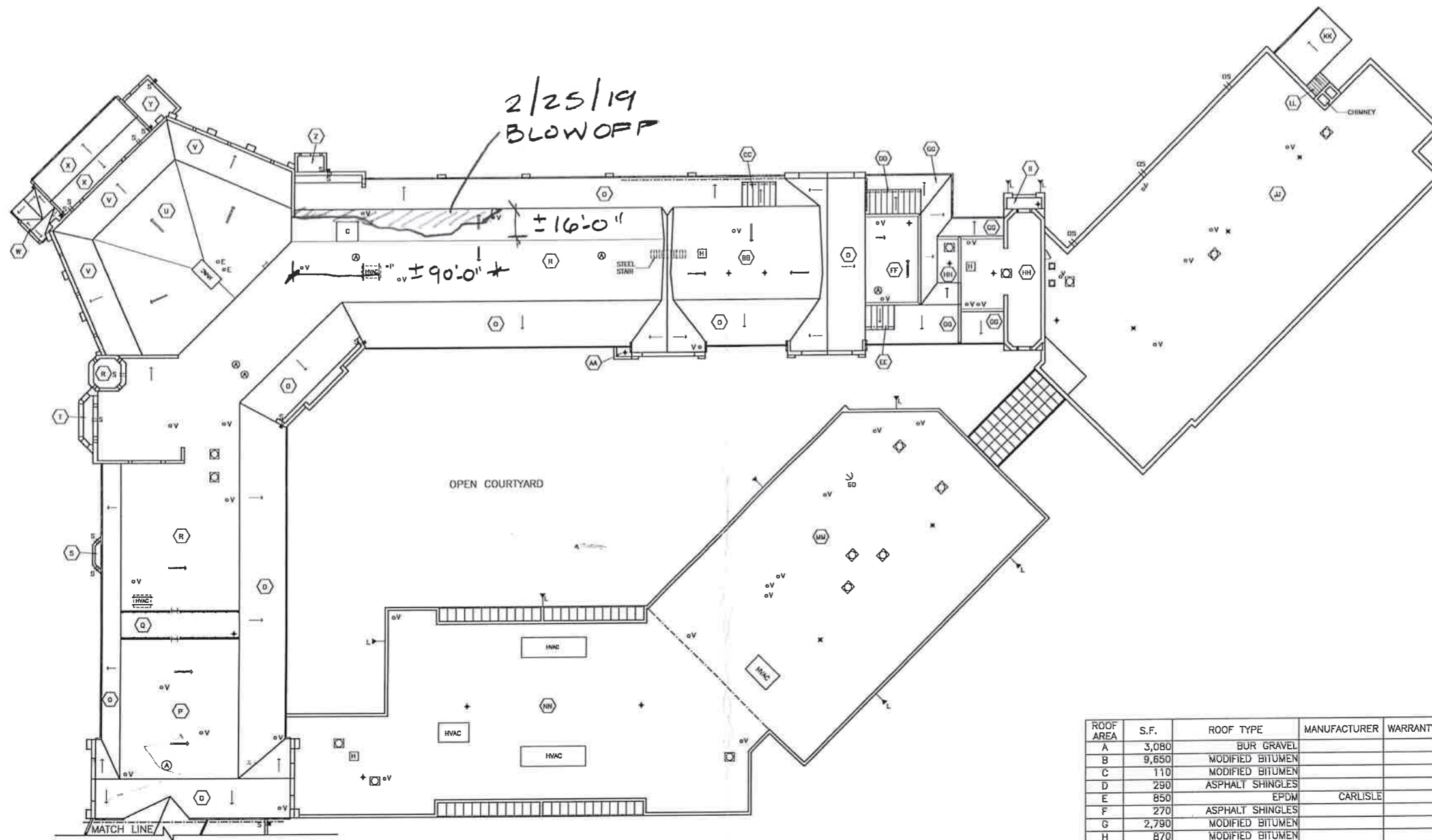
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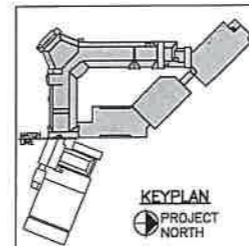
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**LEGEND**

- |  |                       |  |                      |
|--|-----------------------|--|----------------------|
|  | ROOF AREA DESIGNATION |  | GOOSENECK VENTILATOR |
|  | STEEP ROOF SLOPE      |  | LOUVERED PENTHOUSE   |
|  | FLAT ROOF SLOPE       |  | HVAC UNIT            |
|  | CRICKET               |  | SATELLITE DISH       |
|  | GUTTER AND LEADER     |  | ANTENNA              |
|  | ROOF DRAIN            |  | LIGHT FIXTURE        |
|  | SCUPPER & LEADER HEAD |  | SNOW GUARD           |
|  | OVERFLOW SCUPPER      |  | ROOF LADDER          |
|  | VENT PIPE             |  | SKYLIGHT             |
|  | PITCH POCKET          |  | CHIMNEY              |
|  | ROOF HATCH            |  | CAPPED CURB          |
|  | EXHAUST FAN           |  | EXPANSION JOINT      |
|  | GRAVITY VENT          |  | ELECTRICAL CONDUIT   |
|  | RAILING               |  | EVECTO VENTILATOR    |
|  | STEEL DRAINAGE        |  | ATTIC VENT           |
|  | TURBINE VENTILATOR    |  | FLUE                 |
|  | DUCT CURB             |  | LEAK LOCATION        |
|  | AC CONDENSER          |  |                      |

**PARTIAL ROOF PLAN**



ROOF AREA	S.F.	ROOF TYPE	MANUFACTURER	WARRANTY	INSTALLED	COND
A	3,080	BUR GRAVEL				POOR
B	9,650	MODIFIED BITUMEN				POOR
C	110	MODIFIED BITUMEN				POOR
D	290	ASPHALT SHINGLES			2009	GOOD
E	850	EPDM	CARLISLE		2008	GOOD
F	270	ASPHALT SHINGLES			2009	GOOD
G	2,790	MODIFIED BITUMEN				POOR
H	870	MODIFIED BITUMEN				POOR
I	160	MODIFIED BITUMEN				POOR
J	1,930	ASPHALT SHINGLES			2009	GOOD
K	1,930	MODIFIED BITUMEN			2009	GOOD
L	1,960	MODIFIED BITUMEN			2009	GOOD
M	590	MODIFIED BITUMEN			2009	GOOD
N	4,300	ASPHALT SHINGLES			2009	GOOD
O	14,460	ASPHALT SHINGLES			2009	GOOD
P	2,010	MODIFIED BITUMEN			2009	GOOD
Q	410	MODIFIED BITUMEN			2009	GOOD
R	9,370	MODIFIED BITUMEN			2009	GOOD
S	40	FLAT SEAM COPPER			2009	GOOD
T	100	MODIFIED BITUMEN			2009	GOOD
U	2,870	MODIFIED BITUMEN			2009	GOOD
V	2,620	ASPHALT SHINGLES			2009	GOOD
W	280	ASPHALT SHINGLES			2009	GOOD
X	1,050	ASPHALT SHINGLES			2009	GOOD
Y	180	MODIFIED BITUMEN			2009	GOOD
Z	220	MODIFIED BITUMEN			2009	GOOD
AA	30	MODIFIED BITUMEN			2009	GOOD
BB	1,660	MODIFIED BITUMEN			2009	GOOD
CC	100	STANDING SEAM METAL			2009	GOOD
DD	160	STANDING SEAM METAL			2009	GOOD
EE	90	STANDING SEAM METAL			2009	GOOD
FF	610	MODIFIED BITUMEN			2009	GOOD
GG	1,750	ASPHALT SHINGLES			2009	GOOD
HH	1,100	MODIFIED BITUMEN			2009	GOOD
II	80	MODIFIED BITUMEN			2009	GOOD
JJ	11,070	EPDM	FIRESTONE	YES	2010	GOOD
KK	370	MODIFIED BITUMEN			2009	GOOD
LL	40	STANDING SEAM METAL				GOOD
MM	9,210	EPDM	FIRESTONE	YES	2010	GOOD
NN	9,350	EPDM	FIRESTONE	YES	2010	GOOD
TOTAL	96,630					



**SOPREMA**

Warranty No.: 101-003862

**Premium NDL Roof Warranty**


Building Address: Roosevelt High School(Main Bldg. Roof), 631 Tuckahoe Rd., Yonkers, NY 10710  
 Owner: Yonkers Public Schools, 1 Larkin Center, Yonkers, NY 10710  
 Area in Squares: 257                      Membrane: 2144                      Membrane Flashing: 2144  
 Substantial Completion Date: 04.15.2010                      Length of Warranty: Twenty (20) Years  
 Authorized Roofer: VMG Group, 27 East 33<sup>rd</sup> Street, Paterson, NJ 07514

Soprema, Inc., an Ohio corporation, warrants to you that the membrane sold to you will not leak due to defects in factory workmanship or materials nor due to defective workmanship by the installing contractor. If Soprema determines that a valid warranty claim has been made, then Soprema will provide you, at Soprema's expense and as your sole and exclusive remedy, with the labor and material necessary to return the defective area to a watertight condition. This warranty is made subject to the terms, conditions and limitations set forth in this document.

**THE WARRANTY EXPRESSED IN THIS DOCUMENT SUPERSEDES AND IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**


In addition to the above, this warranty document includes all of the terms, conditions and limitations contained on the reverse side of this page and in the following documents: (1) Form 900 – Warranty Claim Procedure, (2) Form 901 – Roof Care and Maintenance Guide, and (3) any rider now or subsequently issued by Soprema. The riders issued at the time of issuance of this warranty, if any, are listed below. This warranty is not effective or binding against either party unless, within six months after the substantial completion date, it is signed by both parties. The only agents of Soprema authorized to sign this warranty, or any riders hereto, are its President, Vice President, General Manager, Secretary, and Treasurer.

Soprema, Inc.

By:   
 Name: Steven P. Goetz  
 Title: Treasurer  
 Date: 04.15.2010

AGREED TO BY:

Owner's Name: YONKERS PUBLIC SCHOOLS

By:   
 Name: LEE PAVONE  
 Title: SENIOR ENGINEER  
 Date:



Riders issued at time of this warranty: None. xxx

#### Terms, Conditions and Limitations

1. The only components of your roof that are covered by this warranty are the membrane and membrane flashing products specifically identified on the face of this warranty. Accordingly, any reference in this warranty to the "roof" means only these components.
2. All roof work must be performed by a roofing contractor who is authorized to offer a Soprema warranty (sometimes referred to in this warranty as an "authorized roofer" or some similar term). The authorized roofer who originally installed your roof is sometimes referred to in this warranty as the "installing contractor."
3. Warranty coverage starts on the substantial completion date set out on the face of this warranty and, subject to earlier termination, will continue for the specified length of time.
4. For purposes of this warranty, a "leak" means the admission of water into your building through an opening, separation or other similar defect in the roof and the term "warranted leak" means a leak through the roof caused by defects in factory workmanship or materials or defective workmanship by the installing contractor. A warranted leak is not, for example, a leak caused by or resulting from: (a) the direct or indirect effect of lightning, explosion, flood, hail, windstorm having a 3-second gust speed greater than 73 m.p.h. (as recorded by the data collection point that reports to the National Weather Service (whether official or unofficial) located nearest to your building), earthquake, hurricane, tornado, microburst, or other similar event; (b) a defect, settlement, movement, displacement, or structural failure in or of the surface over which the roof is applied or in or of the structure of your building; (c) moisture entering the roof through or around walls, copings, pipelines or conduit, skylights, vents, or other structures or fixtures; (d) defects in or faulty or improper design, specification, construction or engineering of your building or the surface or material over which the roof is applied; (e) faulty or improper design, specification or engineering of the roof assembly in relation to the physical characteristics of your building or the climate where your building is located; (f) damage from lack of positive drainage; (g) damage from exposure to corrosive substances, for example, animal guano, chlorofluorocarbons, solvents, gasoline, kerosene, turpentine, or other hydrocarbons, acids, alkalis, salt, oil, fat, grease, damaging exhausts, or residue from any of the foregoing; (h) damage from internal pressure conditions or condensation beneath the roof; (i) damage from fire or other source of excessive heat; (j) damage from deliberate or negligent acts such as vandalism, terrorism, misuse, abuse, or acts of civil disobedience or war; (k) damage caused by birds, animals, insects or vegetation; (l) damage from falling, flying, dropped or blown objects; (m) damage from excessive traffic over or storage of materials on the roof; (n) damage attributable to a change or changes in the usage of your building; (o) damage caused by or during installation of equipment, fixtures, utilities, or structures on, through, or near the roof; (p) installations on or through the roof; (q) damage attributable to repairs or modifications performed or materials supplied by others; (r) failure of the installing contractor to install all of the components of the roof identified on the project registration form; (s) damage attributable to your negligence or your failure to properly clean, care for and maintain the roof, or (t) the existence of any as-built condition that is not equal to or better than the requirements of Soprema's published details and general requirements. Soprema does not warrant that the roof will remain free of ridges, cracks, blisters, wrinkles, fishmouths or other similar conditions. Soprema does not warrant that the color of the membrane will not fade nor that the color of any replacement membrane will match the color of the original membrane.
5. This warranty does not become effective unless and until: (a) Soprema and any distributor from whom the installing contractor purchased products have been paid in full for all labor, materials, and supplies provided for or in connection with your roof; (b) the installing contractor has been paid in full by you for the installation of the roof, and (c) Soprema has been paid the warranty charge relating to this warranty.
6. Soprema does not have any obligation to repair any leak unless and until: (a) all of the conditions to the warranty becoming effective have been satisfied, (b) Soprema determines that the leak is a warranted leak, (c) Soprema receives the written notice of claim referred to in the claim procedure (Form 901) in a timely fashion; and (d) you properly care for and maintain the roof.
7. This warranty shall become null and void in the event of any of the following: any as-built condition exists on the roof that is not in compliance with Soprema's standard details and installation instructions (or other details accepted in writing by Soprema's Technical Department); any material change in the use (as described in the project registration form) of your roof or building after the substantial completion date; any subsequent work on or through the roof without Soprema's written approval of the methods and materials to be used; repairs or modifications to the roof made by someone other than an authorized roofer; or as otherwise provided herein. Emergency repairs to stop a leak will not void the warranty as long as they are reported to Soprema in writing within ten days.
8. This warranty is transferable to any subsequent owner of your building once you satisfy all of the transfer requirements set out at <[www.soprema.us](http://www.soprema.us)>.
9. Soprema's failure at any time or from time to time to enforce any of the terms, conditions, or limitations of this warranty shall not be construed to be a waiver of such provision(s) or any other term, condition or limitation hereof.
10. No suit or action whatsoever shall be brought against Soprema for the recovery of damages arising out of any claimed failure of the roof or for any breach of warranty unless, as a condition precedent thereto: (a) you have complied with all of the terms and conditions of this warranty applicable to you, and (b) the suit, action or proceeding is commenced within one (1) year after the cause of action accrues. The failure to satisfy either of these conditions precedent shall result in such claims being forever barred.
11. This warranty is governed by and shall be construed and enforced in accordance with the internal laws of Ohio, without giving effect to any choice of law rules that may require the application of the laws of another jurisdiction.
12. The terms of this warranty are severable so that any illegal, invalid or unenforceable provision, if feasible, shall be modified so that it becomes legal, valid and enforceable, or if not feasible, stricken, in either case without affecting the validity or enforceability of the remaining provisions.
13. The employees, agents, sales representatives, and distributors of Soprema are not authorized to make any modifications or additions to this warranty, except through a validly executed rider. Any proposed changes made by you or anyone else that is not documented in a validly issued rider is rejected by Soprema and is null and void. This warranty, together with any riders expressly made a part hereof, sets forth the entire agreement between the parties with respect to your roof assembly. Soprema disclaims, and you waive, any affirmation of fact or promise that may have been made by Soprema or any of its employees, agents, representatives, or distributors that is not expressly stated in this warranty.
14. The remedy set forth in this warranty is your **SOLE AND EXCLUSIVE REMEDY** against Soprema and Soprema's sole liability and obligation to you in the event the roof falls in whole or in part, regardless of whether you might otherwise be entitled to pursue a legal claim against Soprema, and regardless of the theory on which a claim might be based, including, without limitation, contract, tort, breach of warranty, strict and/or product liability, or misrepresentation.
15. **IN NO EVENT SHALL SOPREMA BE LIABLE TO YOU FOR ANY INDIRECT, CONSEQUENTIAL, SPECIAL, INCIDENTAL, PUNITIVE OR OTHER SIMILAR DAMAGES**, including, but not limited to, loss or reduction of profits, interruption of business, injury to or illness or death of persons, damage or loss caused by or attributable to indoor air quality (including, but not limited to, the presence or growth of mold, mildew or other similar substance in, on or about the roof assembly, walls, ceilings or other surfaces in your building), or damage or destruction of property, including your building or any of its contents, even if Soprema has been advised of the possibility, or even the likelihood, of any of these types of damages.
16. Since Soprema does not practice the professions of architecture or engineering, you agree that the review, inspection or approval, express or implied, by Soprema or its agents or representatives of the construction or condition of your existing roof, roof deck or building, or the drawings, plans or specifications for your new or replacement roof, did not in any way create a warranty by Soprema of such items and was not a substitute for the professional judgment of an architect or engineer. Any such action or activity by Soprema was gratuitous, solely for the benefit of Soprema in determining whether or not to issue this warranty, and did not and does not subject Soprema or any of its agents or representatives to any responsibility or liability, whether in contract, indemnity, warranty, tort (including negligence), strict liability or otherwise.
17. Any involvement by Soprema with respect to your roof, including any visits to the roof, whether prior to, during or after installation of the roof assembly, and any interaction with personnel involved in the installation of your roof, was or will be gratuitous and was or will be undertaken solely for the benefit of Soprema in determining whether or not to issue this warranty, whether or not a leak is a warranted leak, or what actions are necessary to repair a warranted leak. Accordingly, no such involvement expands the terms of this warranty nor subjects Soprema or any of its agents or representatives to any liability, whether in contract, indemnity, warranty, tort (including negligence), strict liability or otherwise. You are hereby advised that any roof inspections made prior to the date of this warranty were visual inspections only and that conditions might exist on the roof that are not in compliance with Soprema's standard details and installation instructions that were not noticed by the inspector, even if open and obvious. Noncompliant conditions, if they exist, have not been accepted by Soprema.
18. Any document on Soprema's website that is referred to in this warranty is incorporated herein by this reference, the same as if fully rewritten herein.



## WARRANTY CLAIM PROCEDURE

Warranty claims are required to be submitted within 30 days after a leak or other related issue is discovered, unless a different notice period is expressed in a rider. Time is of the essence. Claims are to be submitted to SOPREMA's Warranty Claim Administrator. Contact information is provided below.

SOPREMA will initiate the claim process when all of the following items have been received:

1. Completed Warranty Claim Form (available here: [https://www.sopraconnect.com/Warranty/Warranty\\_ClaimRequest.aspx](https://www.sopraconnect.com/Warranty/Warranty_ClaimRequest.aspx)).
2. Photos or other documentation of the conditions you believe give rise to the claim (preferably submitted with warranty claim).
3. A copy of your Care and Maintenance log (preferably submitted with warranty claim).
4. Your Warranty Number as indicated on your warranty.

For wind-related claims, the following additional items are to be submitted: (1) a signed and sealed report by a licensed professional engineer documenting findings that identify and support the cause(s) of the damage resulting in the leak, and (2) wind speed data from a rooftop anemometer or other wind speed data collection point for the period of time from the effective date of the Warranty to the date of the claim (or, if such data was submitted in connection with a prior claim, from the end date of the prior data to the date of the claim).

Upon receipt of a properly documented warranty claim, SOPREMA will determine if a site visit is desired. If so, you will be contacted in order to coordinate arrangements. You agree to provide SOPREMA and its designees with prompt, free, safe and ready access through a roof hatch or door to roofing or waterproofing surfaces that are free of snow, ice, and any other obstructions. If there is not a roof hatch or door available, then you agree to provide a suitable ladder. You agree to provide access during normal business hours or, if requested, other times. SOPREMA agrees to follow any safety and security protocols you have in place for visitors.

When SOPREMA determines the claim is valid, SOPREMA will remedy the leak in an expeditious manner. Conditions may vary, thus the remedy and timetable may vary as well. The decisions of SOPREMA with respect to the validity of claims and the scope, manner, and timetable of repairs are final and binding.

In making warranty repairs, SOPREMA will attempt to closely match materials and colors, as inventories allow. Authorized warranty repairs shall become subject to the warranty, but do not extend its term.

Should an investigation reveal that a claim is not covered by the warranty, you will be promptly notified as to why. Should you abuse the claims process, you may be invoiced for the investigation expenses incurred by SOPREMA. If invoiced, then it is your responsibility to pay within 30 days.

It is your responsibility to remedy any condition, not covered by the warranty, that has an adverse effect on the roofing or waterproofing. If you remedy the condition within a reasonable time, then the warranty will remain in effect for the unexpired portion of its term. Failure to address repairs or related issues in a timely and reasonable fashion could result in conditions not covered by the warranty. It is your responsibility to remedy conditions not covered by the warranty that may have an effect on the building or its occupancy, including other damages, safety, codes, laws and regulations.

**For additional information contact:**      **SOPREMA, Inc.**  
   **Warranty Claim Administrator**  
   **201 Quadral Drive**  
   **Wadsworth, Ohio 44281-9571**  
   **Phone: (330) 334-0066**  
   **Fax: (330) 334-7903**  
   **Email: [warrantyclaims@soprema.us](mailto:warrantyclaims@soprema.us)**



## WARRANTY CLAIM PROCEDURE

Should you experience a leak that you believe is related to your roof, check for the obvious causes first – gouges in the roof membrane, open side or end laps, clogged roof drains, loose counter flashings, broken skylights, open grills or vents, or broken water or drainage pipes, just to name a few. Pay attention to and note the conditions that exist when a leak occurs. Heavy or light rain, wind direction, temperature and the time of day when the leak occurs could be important clues to tracing the origin of the leak. Note whether the leak stops shortly after each rain or continues to drip until the roof is dry. If you are prepared with the facts, the diagnosis and repair of the leak can be expected to proceed more rapidly.

If you are still reasonably sure that you have a valid warranty claim after having investigated a leak, then submit a warranty claim to Soprema. To make a valid claim, you must give Soprema written notice of that claim within thirty (30) days after the condition you are complaining of is discovered or in the exercise of reasonable care should have been discovered. Time is of the essence. The notice must include pictures (preferably electronic) of the conditions you believe give rise to the claim. The notice must include a brief description of the physical circumstances and basis for your claim. A notice is effective only once received by Soprema. You are urged to send your notice by certified mail, return receipt requested, or by reliable overnight carrier, so you and Soprema both have proof of date of delivery.

After receipt of a warranty claim, if Soprema wishes to observe the condition of your roof, you must provide Soprema and its designees with free and ready access to your roof, during weekday, daylight hours. If a leak should occur, the location of which is suspected by Soprema to be in an area over which any traffic surfaces or other overburden are located, then you must remove the traffic surfaces or other overburden. After the inspection and any necessary roof repairs are completed, it is your responsibility to replace the removed items. Damage caused by the removal or replacement of these items is your responsibility.

All warranty claims must be sent to: Soprema, Inc., Attention: Warranty Department, 310 Quadral Drive, Wadsworth, OH 44281-9571. It is not sufficient to give notice to the contractor who installed your roof and/or to any other department or office of Soprema. Verbal notices will not be honored.

If it is determined that a warranty claim relates to a condition or occurrence not covered by your warranty, you will be promptly notified, in writing, of non-coverage. If you are notified that the claimed condition is not covered by the warranty, prompt follow up might be required by you in order to maintain warranty coverage. If you are notified of repairs required in order to maintain warranty coverage, then, within thirty (30) days after that notice is given, you will need to hire, at your expense, a contractor to make those repairs. In addition, if the repair of the non-covered condition will involve work on or through the roof, then the work must be performed by a roofing contractor who is authorized to install and service Soprema roof assemblies (sometimes referred to in this warranty as an "authorized contractor" or some similar term) using only methods and materials approved in writing by Soprema's Technical Department. When work is being performed on or around your roof, it may be necessary for your contractors to take affirmative action to protect your roof from being damaged during the performance of the repairs. If you fail to repair the non-covered condition within thirty (30) days after notification (or such longer time expressly agreed to in writing by Soprema's Technical Department), then your warranty will terminate, immediately and automatically, without further notice. If Soprema later determines that your roof has been irreparably damaged during the repairs, then your warranty will be cancelled retroactively to the date the repairs that resulted in the irreparable damage were started.

**For additional information contact:**

**Soprema, Inc.  
310 Quadral Drive  
Wadsworth, Ohio 44281-9571  
Phone: (800) 356-3521**





**SOPREMA**

## ROOF CARE AND MAINTENANCE GUIDE

A regular roof repair and maintenance program is fundamental to the satisfactory long-term performance of your roof. Through such a program, potential problems can be found in their early stages, hopefully resulting in the problem being prevented altogether.

**Roof Access.** Limit access to your roof to authorized personnel only, meaning those with a real need to be there. We suggest you maintain a log of all persons granted access to your roof. We also suggest that a sign similar to the following be posted at all roof hatches and other points of access to the roof: "All persons seeking access to this roof must first register in the log at our front desk."

**Inspection.** Inspect your roof at least semi-annually, in the spring and fall. Also inspect the roof after any severe winds or storms and after any event that could be reasonably expected to cause damage to your roof or to your building envelope. Any discovered damage to your roof must be promptly reported by you to Soprema and then corrected by an authorized contractor. Corrections or modifications to your roof made by anyone who is not an authorized contractor may, at the option of Soprema, void your warranty.

**Cleaning the Roof.** A Soprema warranted roof must be cleaned on a regular basis and kept free of debris such as branches, leaves, bottles, rocks, cans, soil or anything else that could plug drains or cause a puncture to the roofing membrane. All drains and scuppers, even though not covered by your warranty, should be checked on a regular basis to ensure they are not plugged and are free-flowing.

**Roof Membrane and Base Flashing.** During each semi-annual inspection, all roofing and flashing surfaces must be carefully checked for any abnormal conditions such as, for example: (1) any signs of stress, such as diagonal wrinkles or blisters; (2) evidence of mechanical abuse, such as punctures, slits or cuts; (3) evidence of damage caused by chemicals, cleaning agents or other harmful substances dripped, spilled, discharged or blown onto the roof; or (4) wear due to foot traffic or other types of abuse.

**Walls.** Walls (particularly those constructed of masonry and stucco) can be susceptible to wind blown water intrusion. Periodically determine if additional water repellent or sealant is needed to maintain the water tightness of your building's walls. Water entering your building or your roof through walls will damage the roof and will not be covered by your warranty.

**Metal Components and Roofing Accessories.** During each semi-annual inspection:

**Gravel Stops.** Inspect the condition of all metal for evidence of rusting, loose metal, wind deformation and joint integrity. Document any areas where membrane appears to be stressed. Inspect the metal/membrane bond for voids or other possible conditions that could permit water infiltration.

**Vent Pipes.** Check all metal parts for deterioration, all clamping rings to ensure they are tight, all sealant beads to ensure they shed water and are sealed tight to the pipe, and any membrane flashing wrap for evidence of stresses, voids, or other possible conditions that could permit water infiltration.

**Counter Flashing.** Inspect the condition of any metal for evidence of rusting, loose metal, wind deformation and joint integrity. Check if the adhesion of surface mounted counter flashing, even though not covered by your warranty, is adequate so as to create a continuous compression seal for the caulking bead. Caulking is not covered by your warranty and may need to be periodically replaced by you. Check the attachment of the metal coping cap to the continuous clip for resistance to wind. Inspect any metal to membrane bond for voids or other possible conditions that could permit water infiltration.

**Pitch Pans.** Pitch pans are not covered by your warranty. Even so, water leaking through bad pitch pans could damage your roof. Therefore, inspect the condition of the metal for evidence of rusting, wind deformation and joint integrity. Inspect the bond of the filler onto the penetration being flashed and determine the water tightness. Make sure the pan is filled with filler so as to create a positive slope away from the penetration.

**Drains.** Make sure that all drains and scuppers are free from clogs. Check all drain bolts for tightness. Inspect any metal to membrane bond for voids or other possible conditions that could permit water infiltration. Regularly clean debris from around strainers and secure drain strainers.

**Roof Top Equipment.** Inspect HVAC units, ductwork or other curb types for evidence of rusting, wind deformation and joint integrity. Inspect any metal to membrane bond for voids or possible points of water infiltration. Piping secured to a base or metal flange (dunnage) should continue to have protection material under the blocking. Make sure that protection work pads are maintained in the work areas around the units.

**Roof Repair Procedure.** If leaks are discovered, and immediate attention is required, it is best to provide a temporary patch using Soprema SBS mastic, or other compatible patching material commonly used in your particular part of the country, until a permanent repair is made. Only an authorized roofer can make permanent service splices on Soprema warranted roofs.

For additional information contact:

Soprema, Inc.  
310 Quadral Drive  
Wadsworth, Ohio 44281-9571  
Phone: (800) 356-3521

**WARRANTY CLAIM FORM**

**Warranty Number**  
101-003862

**Date Submitted**  
02/26/2019

**BUILDING OWNER INFORMATION**

<b>Owner Name</b>	<b>Salutation</b>	<b>Owner Contact First Name</b>	<b>Owner Contact Last Name</b>	<b>Email</b>
Yonkers Public Schools	Mr.	Becker	John	jbecker@yonkerspublicschools.org
<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip</b>	<b>Phone</b>
One Larkin Center	Yonkers	New York	10701	(914) 376-8008

**BUILDING INFORMATION**

<b>Building Name</b>	<b>Building Contact</b>	<b>Email</b>	<b>Phone</b>
Roosevelt High School	John Becker	jbecker@yonkerspublicschools.org	(914) 618-0919
<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip</b>
631 Tuckahoe Road	Yonkers	New York	10710

**CLAIM INFORMATION**

Did you review the [Claim Procedure](#) before submitting this claim?  Yes  No

Is there a roofing or waterproofing system leak associated with the claim?  Yes  No

Has the roof been inspected since the leak was discovered?  Yes  No **By whom?** Lee Pavone **When?** 02/25/2019

Do you have a Care and Maintenance Log?  Yes  No

**LOCATION AND DESCRIPTION OF ISSUE**

A section of the Main roof blew off the school around 4:00 pm on 02-25-2019. The insulation is exposed and the metal trim was also torn off. The area is approximately 500-700 sf. We have brought in a roofer (Milcon Construction) to make the roof water tight until repairs can be made.

By submitting this Warranty Claim form, I have verified that all information is true and correct. I also verify that this claim is being filed in compliance with the warranty terms and conditions.

**Document/Photo Upload**

**Submitted by**  
John Becker

#### Terms, Conditions and Limitations

1. The only components of your roof that are covered by this warranty are the membrane and membrane flashing products specifically identified on the face of this warranty. Accordingly, any reference in this warranty to the "roof" means only these components.
2. All roof work must be performed by a roofing contractor who is authorized to offer a Soprema warranty (sometimes referred to in this warranty as an "authorized roofer" or some similar term). The authorized roofer who originally installed your roof is sometimes referred to in this warranty as the "installing contractor."
3. Warranty coverage starts on the substantial completion date set out on the face of this warranty and, subject to earlier termination, will continue for the specified length of time.
4. For purposes of this warranty, a "leak" means the admission of water into your building through an opening, separation or other similar defect in the roof and the term "warranted leak" means a leak through the roof caused by defects in factory workmanship or materials or defective workmanship by the installing contractor. A warranted leak is not, for example, a leak caused by or resulting from: (a) the direct or indirect effect of lightning, explosion, flood, hail, windstorm having a 3-second gust speed greater than 73 m.p.h. (as recorded by the data collection point that reports to the National Weather Service (whether official or unofficial) located nearest to your building), earthquake, hurricane, tornado, microburst, or other similar event; (b) a defect, settlement, movement, displacement, or structural failure in or of the surface over which the roof is applied or in or of the structure of your building; (c) moisture entering the roof through or around walls, copings, pipelines or conduit, skylights, vents, or other structures or fixtures; (d) defects in or faulty or improper design, specification, construction or engineering of your building or the surface or material over which the roof is applied; (e) faulty or improper design, specification or engineering of the roof assembly in relation to the physical characteristics of your building or the climate where your building is located; (f) damage from lack of positive drainage; (g) damage from exposure to corrosive substances, for example, animal guano, chlorofluorocarbons, solvents, gasoline, kerosene, turpentine, or other hydrocarbons, acids, alkalis, salt, oil, fat, grease, damaging exhausts, or residue from any of the foregoing; (h) damage from internal pressure condillions or condensation beneath the roof; (i) damage from fire or other source of excessive heat; (j) damage from deliberate or negligent acts such as vandalism, terrorism, misuse, abuse, or acts of civil disobedience or war; (k) damage caused by birds, animals, insects or vegetation; (l) damage from falling, flying, dropped or blown objects; (m) damage from excessive traffic over or storage of materials on the roof; (n) damage attributable to a change or changes in the usage of your building; (o) damage caused by or during installation of equipment, fixtures, utilities, or structures on, through, or near the roof; (p) installations on or through the roof; (q) damage attributable to repairs or modifications performed or materials supplied by others; (r) failure of the installing contractor to install all of the components of the roof identified on the project registration form; (s) damage attributable to your negligence or your failure to properly clean, care for and maintain the roof, or (t) the existence of any as-built condition that is not equal to or better than the requirements of Soprema's published details and general requirements. Soprema does not warrant that the roof will remain free of ridges, cracks, blisters, wrinkles, fishmouths or other similar conditions. Soprema does not warrant that the color of the membrane will not fade nor that the color of any replacement membrane will match the color of the original membrane.
5. This warranty does not become effective unless and until: (a) Soprema and any distributor from whom the installing contractor purchased products have been paid in full for all labor, materials, and supplies provided for or in connection with your roof; (b) the installing contractor has been paid in full by you for the installation of the roof, and (c) Soprema has been paid the warranty charge relating to this warranty.
6. Soprema does not have any obligation to repair any leak unless and until: (a) all of the conditions to the warranty becoming effective have been satisfied, (b) Soprema determines that the leak is a warranted leak, (c) Soprema receives the written notice of claim referred to in the claim procedure (Form 901) in a timely fashion; and (d) you properly care for and maintain the roof.
7. This warranty shall become null and void in the event of any of the following: any as-built condition exists on the roof that is not in compliance with Soprema's standard details and installation instructions (or other details accepted in writing by Soprema's Technical Department); any material change in the use (as described in the project registration form) of your roof or building after the substantial completion date; any subsequent work on or through the roof without Soprema's written approval of the methods and materials to be used; repairs or modifications to the roof made by someone other than an authorized roofer; or as otherwise provided herein. Emergency repairs to stop a leak will not void the warranty as long as they are reported to Soprema in writing within ten days.
8. This warranty is transferable to any subsequent owner of your building once you satisfy all of the transfer requirements set out at [www.soprema.us](http://www.soprema.us).
9. Soprema's failure at any time or from time to time to enforce any of the terms, conditions, or limitations of this warranty shall not be construed to be a waiver of such provision(s) or any other term, condition or limitation hereof.
10. No suit or action whatsoever shall be brought against Soprema for the recovery of damages arising out of any claimed failure of the roof or for any breach of warranty unless, as a condition precedent thereto: (a) you have complied with all of the terms and conditions of this warranty applicable to you, and (b) the suit, action or proceeding is commenced within one (1) year after the cause of action accrues. The failure to satisfy either of these conditions precedent shall result in such claims being forever barred.
11. This warranty is governed by and shall be construed and enforced in accordance with the internal laws of Ohio, without giving effect to any choice of law rules that may require the application of the laws of another jurisdiction.
12. The terms of this warranty are severable so that any illegal, invalid or unenforceable provision, if feasible, shall be modified so that it becomes legal, valid and enforceable, or if not feasible, stricken, in either case without affecting the validity or enforceability of the remaining provisions.
13. The employees, agents, sales representatives, and distributors of Soprema are not authorized to make any modifications or additions to this warranty, except through a validly executed rider. Any proposed changes made by you or anyone else that is not documented in a validly issued rider is rejected by Soprema and is null and void. This warranty, together with any riders expressly made a part hereof, sets forth the entire agreement between the parties with respect to your roof assembly. Soprema disclaims, and you waive, any affirmation of fact or promise that may have been made by Soprema or any of its employees, agents, representatives, or distributors that is not expressly stated in this warranty.
14. The remedy set forth in this warranty is your **SOLE AND EXCLUSIVE REMEDY** against Soprema and Soprema's sole liability and obligation to you in the event the roof fails in whole or in part, regardless of whether you might otherwise be entitled to pursue a legal claim against Soprema, and regardless of the theory on which a claim might be based, including, without limitation, contract, tort, breach of warranty, strict and/or product liability, or misrepresentation.
15. **IN NO EVENT SHALL SOPREMA BE LIABLE TO YOU FOR ANY INDIRECT, CONSEQUENTIAL, SPECIAL, INCIDENTAL, PUNITIVE OR OTHER SIMILAR DAMAGES**, including, but not limited to, loss or reduction of profits, interruption of business, injury to or illness or death of persons, damage or loss caused by or attributable to indoor air quality (including, but not limited to, the presence or growth of mold, mildew or other similar substance in, on or about the roof assembly, walls, ceilings or other surfaces in your building), or damage or destruction of property, including your building or any of its contents, even if Soprema has been advised of the possibility, or even the likelihood, of any of these types of damages.
16. Since Soprema does not practice the professions of architecture or engineering, you agree that the review, inspection or approval, express or implied, by Soprema or its agents or representatives of the construction or condition of your existing roof, roof deck or building, or the drawings, plans or specifications for your new or replacement roof, did not in any way create a warranty by Soprema of such items and was not a substitute for the professional judgment of an architect or engineer. Any such action or activity by Soprema was gratuitous, solely for the benefit of Soprema in determining whether or not to issue this warranty, and did not and does not subject Soprema or any of its agents or representatives to any responsibility or liability, whether in contract, indemnity, warranty, tort (including negligence), strict liability or otherwise.
17. Any involvement by Soprema with respect to your roof, including any visits to the roof, whether prior to, during or after installation of the roof assembly, and any interaction with personnel involved in the installation of your roof, was or will be gratuitous and was or will be undertaken solely for the benefit of Soprema in determining whether or not to issue this warranty, whether or not a leak is a warranted leak, or what actions are necessary to repair a warranted leak. Accordingly, no such involvement expands the terms of this warranty nor subjects Soprema or any of its agents or representatives to any liability, whether in contract, indemnity, warranty, tort (including negligence), strict liability or otherwise. You are hereby advised that any roof inspections made prior to the date of this warranty were visual inspections only and that conditions might exist on the roof that are not in compliance with Soprema's standard details and installation instructions that were not noticed by the inspector, even if open and obvious. Noncompliant conditions, if they exist, have not been accepted by Soprema.
18. Any document on Soprema's website that is referred to in this warranty is incorporated herein by this reference, the same as if fully rewritten herein.



March 8, 2019

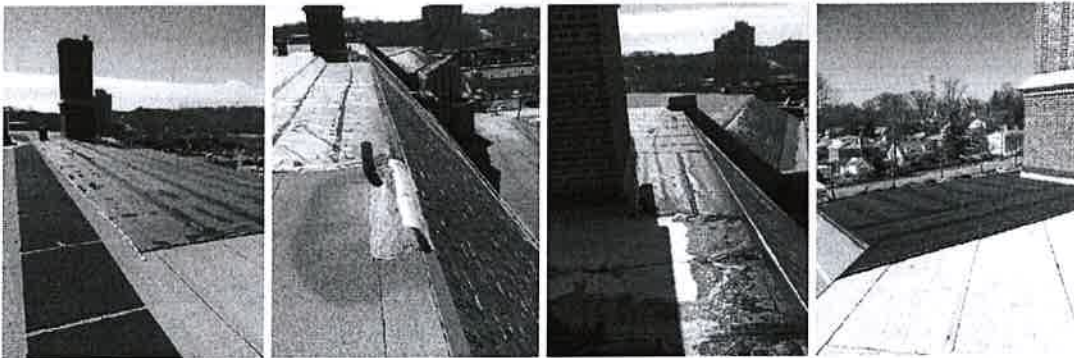
Mr. John Becker  
Yonkers Public Schools  
One Larkin Center  
Yonkers, NY 10701

Sent via email to [jbecker@yonkerspublicschools.org](mailto:jbecker@yonkerspublicschools.org), no hard copy to follow

RE: Roosevelt High School  
631 Tuckahoe Road  
Yonkers, NY  
Warranty Claim No.: 101-003862-1

Dear Mr. Becker:

It has been reported to SOPREMA that on or about February 25, 2019 the above referenced and warranted SOPREMA roof experienced microburst wind damage. It appears that the wind caused displacement of the edge metal that in turn peeled off the roof membrane. We recommend the District retain a professional A/E/C experienced in the forensic evaluation of a roofing system to ascertain the appropriate remedial requirements. Please reference the below photographs:



Damage to the warranted roof and flashing membrane caused by the displacement of the edge metal is beyond the scope of warranty coverage; however it should be an insurance claim.

All SOPREMA roofing and waterproofing system repairs and modifications must be performed by an authorized contractor. Please contact your local SOPREMA Sales Representative if you have any questions.

In conclusion, it will be our pleasure to assist you in any way we are able. If you have any questions about the results of our investigation, please contact me at 330.334.0066 or at [warrantyclaims@soprema.us](mailto:warrantyclaims@soprema.us).

Sincerely,



Benjamin Runyan  
Warranty Claims Administrator

cc: Amato DiLauro, Regional Technical Manager  
Peter Wloszczynski, SOPREMA Field Technical Representative  
Maciej Tobolewski, SOPREMA Sales Representative  
Tim Loftus, SOPREMA Regional Sales Manager  
Project File





# CompuWeather

Forensic Weather Experts

## **SITE SPECIFIC WEATHER ANALYSIS REPORT**



***PREPARED FOR:***

**Watsky Associates**

**Tom Olam**

**March 19, 2019**

***REFERENCE:***

**Roosevelt High School**

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# CompuWeather

Forensic Weather Experts

## PROJECT INFORMATION

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Report Completion Date: March 19, 2019  
Prepared for: Watsky Associates  
20 Madison Avenue  
Valhalla, NY 10595  
Attn: Tom Olam  
Case Reference: Roosevelt High School  
Date of Incident: February 25, 2019  
Time of Incident: N/A  
Location of Incident: 631 Tuckahoe Road, Yonkers, NY 10710  
Type of Incident: Property Damage  
Scope: Determination of wind and general weather conditions for February 25, 2019.

## ABSTRACT

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Watsky Associates has requested a site specific analysis of the weather conditions that occurred on February 25, 2019 for the location of 631 Tuckahoe Road, Yonkers, NY 10710. All available weather data from approved sources for the surrounding area was reviewed and analyzed to determine the conditions that took place for the requested location during the period requested.

It has been determined that peak wind gusts to approximately 52-59 mph occurred on February 25, 2019 (date of the incident), at 631 Tuckahoe Road, Yonkers, NY 10710 (site of the incident).



## **INTRODUCTION**

---

This report is based on a review of weather data recorded in the vicinity of 631 Tuckahoe Road, Yonkers, NY 10710 (site of the incident; see map in the Incident Location & Data Sources section) on February 25, 2019. In order to determine the weather conditions during the period in question, copies of National Oceanic and Atmospheric Administration (NOAA) data were reviewed.

The process employed to produce this weather analysis begins with verifying the location of incident and performing a search of all available and relevant weather data from the local geographical area that the incident site falls within. Once this data has been analyzed, the data is interpreted to make the determination of the weather that occurred at the incident site.

In addition, all meteorological data used to prepare this report is reviewed for quality and can be certified. Data and meteorological reports taken by individuals or organizations not affiliated with the National Oceanic and Atmospheric Administration were not used in this report.

All opinions in this report are rendered to within a reasonable degree of meteorological certainty and are based on my knowledge, experience and education in the field of meteorology. In addition, all opinions are supported by weather records generally accepted by the professional meteorological community. I reserve the right to change my conclusions should additional data become available to me after the preparation of this report.

## **RESULTS / ANALYSIS**

---

### **ANALYSIS OF GENERAL WEATHER CONDITIONS**

**631 Tuckahoe Road, Yonkers, NY 10710:**

#### **FEBRUARY 25, 2019:**

The sky was partly cloudy to cloudy prior to approximately 3:00-3:30 PM EST and clear thereafter. Precipitation in the form of light rain and light snow occurred intermittently from around 1:40 AM EST to 1:50 AM EST, from 4:45 AM EST to 5:30 AM EST, and from 6:40 AM EST to 8:00 AM EST. A trace (less than 0.01 inch) of liquid precipitation fell on this day, which included a trace (less than 0.1 inch) of snow.

Prior to 10:00-10:40 PM EST, the wind was from the west to northwest at speeds mainly between 15-30 mph with frequent gusts to approximately 32-45 mph and occasionally to 47-59 mph. After 10:00-10:40 PM EST, the wind was from the west-northwest to northwest at speeds mainly between 14-25 mph with frequent gusts to 26-32 mph and occasionally to 39-43 mph. Peak wind gusts between 52-59 mph from the west to northwest occurred occasionally between approximately 1:20 AM EST and 4:09 PM EST.

The high temperature was near 43 F and the low temperature was near 27 F.

Wind direction is defined as the direction from which the wind is blowing in reference to true north (see Wind Direction Compass included in this report).

All wind speeds represent the surface level wind speeds at 10 meters (33 feet) above ground level.

## CONCLUSION

**DATE IN QUESTION: February 25, 2019**

**LOCATION: 631 Tuckahoe Road, Yonkers, NY 10710**

**CASE REFERENCE: Roosevelt High School**

In conclusion, it can be stated with a reasonable degree of meteorological certainty that on February 25, 2019 (date of the incident), peak wind gusts between approximately 52-59 mph from the west to northwest occurred occasionally between approximately 1:20 AM EST and 4:09 PM EST at 631 Tuckahoe Road, Yonkers, NY 10710 (site of the incident). In addition, a trace (less than 0.01 inch) of liquid precipitation fell on this day, which included a trace (less than 0.1 inch) of snow

<b>DATE OF INCIDENT SUMMARY TABLE:</b>	<b>February 25, 2019</b>
<b>Precipitation Amount:</b>	Trace (less than 0.01 inch) of liquid precipitation and a trace (less than 0.1 inch) of snow
<b>High / Low Temps:</b>	43 F / 27 F
<b>Peak Wind Dir &amp; Speed:</b>	W-NW 52-59 mph

All opinions in this report are rendered to within a reasonable degree of meteorological certainty and are based on my knowledge, experience and education in the field of meteorology. In addition, all opinions are supported by weather records generally accepted by the professional meteorological community. I reserve the right to change my conclusions should additional data become available to me after the preparation of this report.

Prepared by: Steven Roberts, Certified Consulting Meteorologist

Title: CompuWeather Senior Forensic Meteorologist

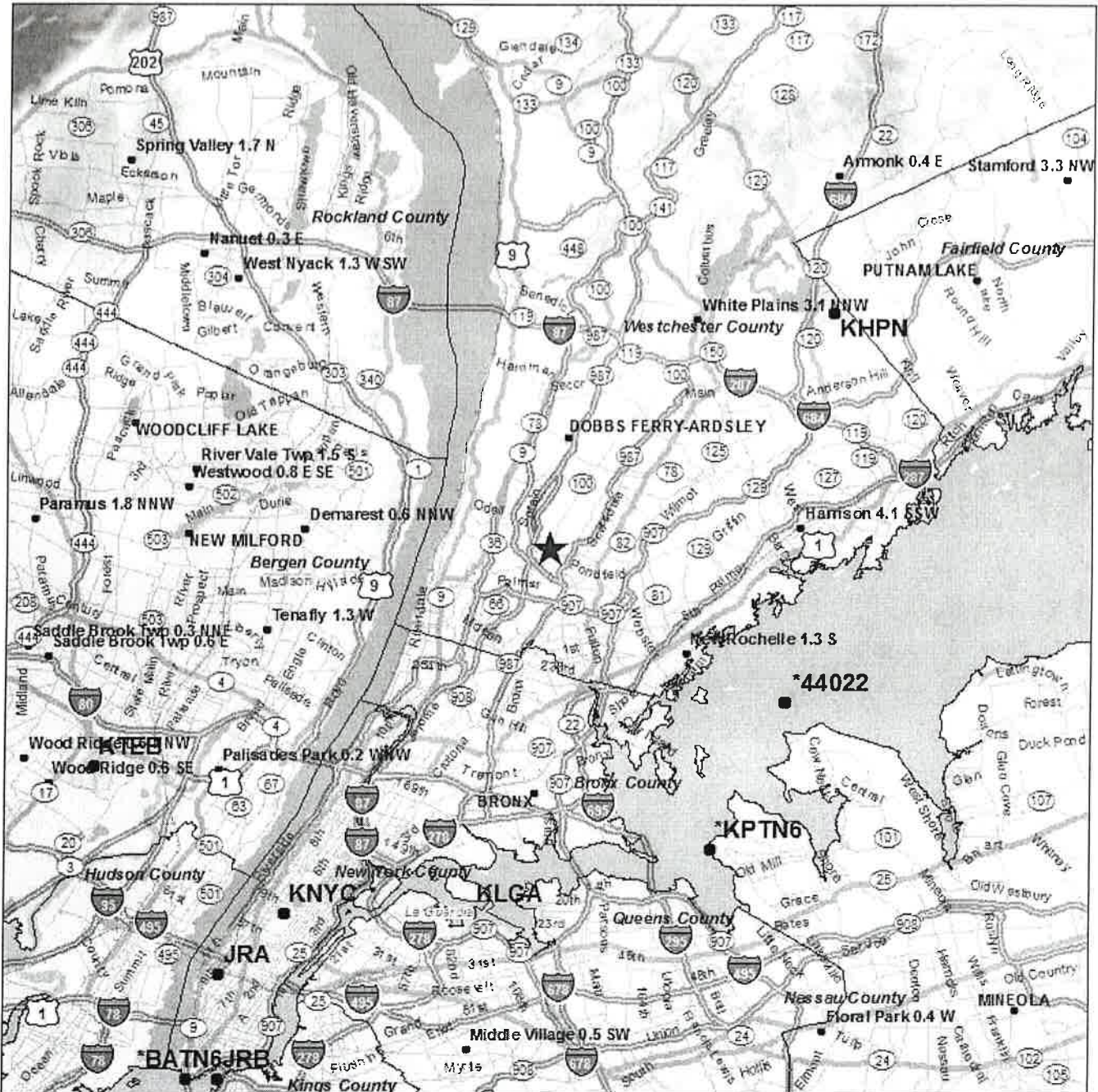
Signature: 

Date: March 19, 2019

## INCIDENT LOCATION & DATA SOURCES - MAP

The incident location for this analysis is indicated by a star on the map below. Additionally shown on the map are the surrounding weather data sites.

A listing of data sites reviewed for this analysis is indicated on the following page.



## **INCIDENT LOCATION & DATA SOURCES - LIST**

Below is a list of data which were reviewed for this analysis. The names of each data site, their three letter identifier in parentheses, and their approximate distances to the incident location (in miles) are indicated.

### **National Weather Service hourly reporting sites:**

- Westchester County Airport, NY (KHPN) – 11 mi
- La Guardia Airport – New York, NY (KLGA) – 12 mi
- Teterboro Airport, NJ (KTEB) – 13 mi
- Central Park Observatory – New York, NY (KNYC) – 14 mi

Hourly weather data is provided by the Automated Surface Observing Systems (ASOS) and Automated Weather Observing System (AWOS). This program is a joint effort of the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). It serves as the nation's primary surface weather observing network, containing over 800 sites nationwide, and is designed to support weather forecasting and the meteorological, hydrological, and climatological research communities.

### **National Centers for Environmental Information global network:**

- Elmsford 0.8 SSW, NY – 6 mi
- Tenafly 1.3 W, NJ – 8 mi
- Palisades Park 0.2 WNW, NJ – 11 mi
- Port Washington 0.8 N, NY – 11 mi
- Saddle Rock 3.4 WSW, NY – 12 mi
- West Nyack 1.3 WSW, NY – 12 mi
- Armonk 0.3 SE, NY – 14 mi
- Armonk 0.4 E, NY – 14 mi

A National Centers for Environmental Information database of weather stations worldwide that record daily and/or hourly weather conditions such as temperature, precipitation, wind and/or snowfall. The data is reviewed by the National Centers for Environmental Information for a reasonable level of quality assurance.

### **National Weather Service NEXRAD radar:**

- Base Reflectivity from KOKX

The Next Generation Weather Radar system (NEXRAD) is comprised of over 150 land-based Weather Surveillance Radar-1988 Doppler (WSR-88D) and Terminal Doppler Weather Radar (TDWR) sites throughout the United States and select overseas locations. This system is a joint effort of the United States Departments of Commerce (DOC), Defense (DOD), and Transportation (DOT). The controlling agencies are the National Weather Service (NWS), Air Force Weather Agency (AFWA) and Federal Aviation Administration (FAA), respectively. Radar scans at radial distances typically greater than 100 miles, covering an area larger than 30,000 square miles around each radar site. It helps provide estimates of several weather elements which aid in weather forecasting and meteorological research – some of which include location and intensity of precipitation, storm track and speed, and precipitation amounts.

### **Public Information Statements issued by the National Weather Service in Upton, NY:**

Public Information Statements are released by the National Weather Service normally during significant weather events which contain information on how the event is impacting a region. Depending on the type of weather event(s), these statements typically include spotter weather reports of rainfall and/or snowfall totals during precipitation events or peak wind measurements when significant winds occurred.

### **Local Storm Reports from the National Weather Service / Storm Prediction Center:**

Local storm reports from the National Weather Service and Storm Prediction Center are from cooperating individuals and organizations, some of which include the following; storm spotters, emergency management, law enforcement, and public. These reports are normally submitted during significant weather events, such as winter storms, strong wind/wind damage, tornadoes, hail, flooding, and many other significant weather events.

## **COMPUWEATHER APPROVED INFORMATION RESOURCES**

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The following is general listing of data resources that are used by CompuWeather for forensics weather analysis but are not limited to:

- National Oceanic and Atmospheric Administration (NOAA)
  - National Centers for Environmental Information (NCEI)
  - National Weather Service (NWS)
  - Storm Prediction Center (SPC)
  - Hydrometeorological Design Studies Center (HDSC)
  - National Hurricane Center (NHC)
  - National Data Buoy Center (NDBC)
  - National Ocean Service (NOS)
  - National Operational Hydrologic Remote Sensing Center (NOHRSC)
  - National Environmental Satellite, Data, and Information Service (NESDIS)
  - Climate Reference Network (CRN)
  - Remote Automatic Weather Stations (RAWS)
  - National Centers for Environmental Prediction (NCEP)
- National Resources Conservation Service (NCRS)
- United States Geological Survey (USGS)
- United States Naval Observatory (USNO)

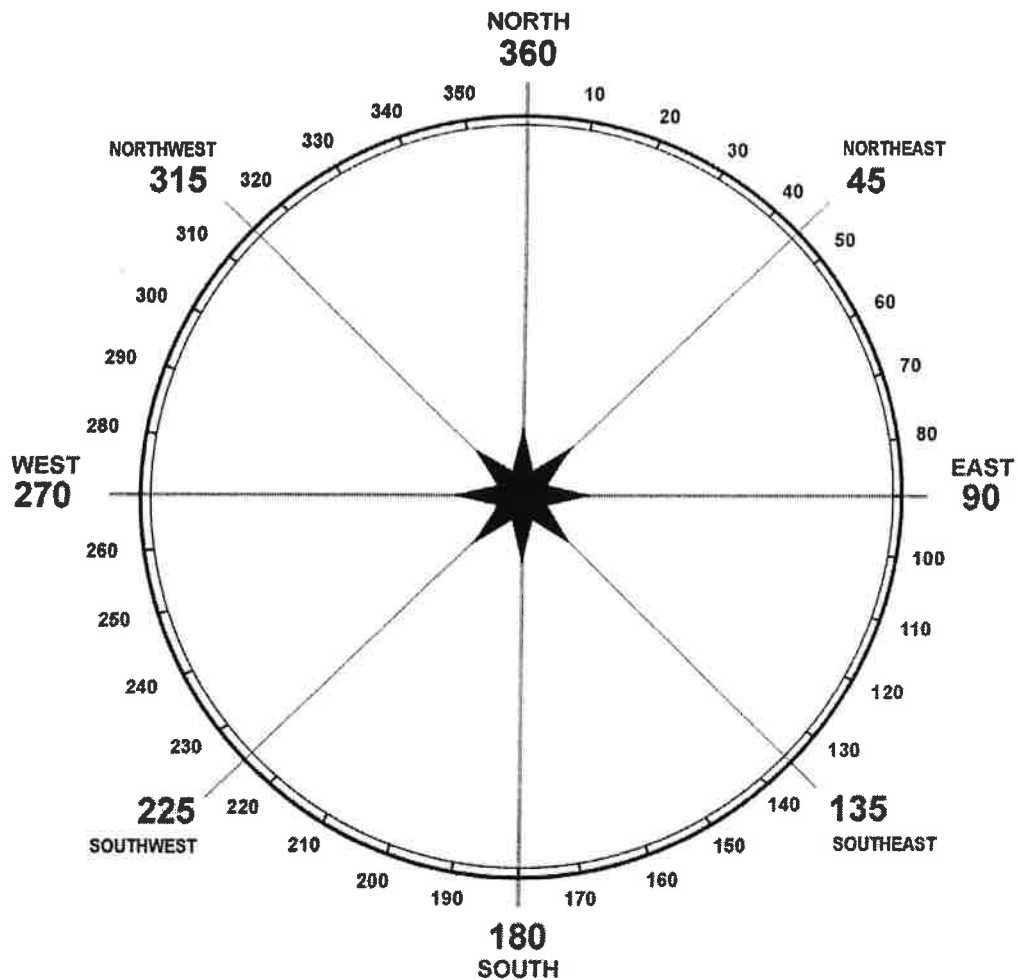
## WIND DIRECTION COMPASS

# WIND DIRECTION COMPASS

The wind direction on the compass diagram (below) indicates the direction and their approximate degree equivalents (degrees from true north (360°)). Wind Direction indicates the direction from which the wind is blowing. In other words, if the wind direction is "S (180°)", the wind is from the south (blowing towards the north).

### Approximate Wind Direction and Degrees° equivalents:

N...	350°/360°/10°	S...	170° - 190°
NNE...	20° - 30°	SSW...	200° - 210°
NE...	40° - 50°	SW...	220° - 230°
ENE...	60° - 70°	WSW...	240° - 250°
E...	80° - 100°	W...	260° - 280°
ESE...	110° - 120°	WNW...	290° - 300°
SE...	130° - 140°	NW...	310° - 320°
SSE...	150° - 160°	NNW...	330° - 340°



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