WALLTITE®

BASF
We create chemistry

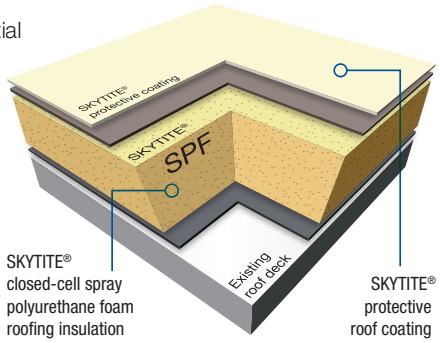
High-Performance Sustainable Building Solutions in Education Facilities

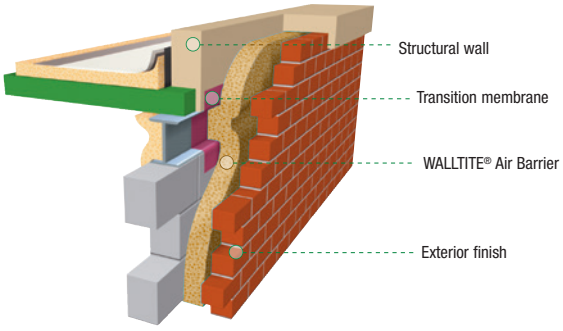
SKYTITE® Spray Polyurethane Foam Roofing System
WALLTITE® Insulation and Air Barrier

Division 7 Thermal and Moisture Protection Products

BASF Spray Polyurethane Foam (SPF) Performance Characteristics

- Highest Insulating R-value per inch (R 6.3-7.1)
- ABAA-certified Insulating Air Barrier System
- ABAA-certified Weather Resistant Barrier
- Eco Efficiency Studies detail sustainability (EEA)
- Roof durability provides wind uplift and impact resistance
- Environmental Product Declarations (EPDs) detail sustainability vs. traditional insulation
- LEED® maximum potential for points
- Quick ROI





SPF Documented Performance

Texas A&M University – Energy Savings
Construction Project Manager, Engineering Design Services, *"We sprayed over the failing BUR for a number of years, mainly due to budgetary constraints, that's one of the advantages to SPF. It means all that material doesn't end up in the landfill."* The results of monitored energy savings on 27 different buildings on the campus that received an SPF roof showed the university was able to cover the complete cost of the roof application through energy savings in an average of 4.5 years.

Amherst College – Efficient Installation & Performance
Amherst College Project Manager, *"… medium density spray polyurethane foam insulating air barrier and one part urethane foam sealant provided a tight, efficient, high-performance building envelope."* Shepley Bulfinch Architects, *"We will be using a spray polyurethane system on Amherst projects. Not only is it an efficient installation process, it allows us to perform our field inspections with greater confidence."*

Dallas Independent School District (DISD) – Cost Effective
DISD Roofing Department, *"I may never have to worry about roofs again. We decided on SPF because of its affordability. It usually doesn't require a tear-off of the existing roof and that saves a lot of money. It's also sustainable. A simple recoat restores the system to its original performance levels at very low cost. And at DISD, we already have personnel trained to maintain SPF roofing systems."*

Towson University - Multi-Attribute Functionality
Architect & Quality Control Team, *"The WALLTITE insulating air barrier system delivered an ease of constructability to the project benefiting all trades involved on the wall assembly. The self-flashing nature of the product eliminates the potential for water intrusion at wall assembly penetrations, while providing for insulation, air and moisture barrier performance throughout the building envelope wall."*

Examples of Schools with SPF Applied Insulation

Universities

- Texas A&M (TX)
- University of Kansas (KS)
- Amherst College (MA)
- Johns Hopkins University (MD)
- University of Kentucky (KY)
- Georgia Tech (GA)
- University of Minnesota (MN)
- Temple University (PA)

Schools (K-12)

- Dallas Independent School District (TX)
- Evanston School District (IL)
- Ichabod Crane Central Schools (NY)
- Lansing School District (MI)
- Dickson County Board of Education (TN)
- Cleveland Municipal School District (OH)
- Campbell County Schools (VA)
- Vernon Parish School Board (LA)

Educational Building Design Considerations Addressed With Spray Foam Specifications

- Thermal efficiency
- Envelope penetrations
- Indoor air quality (IAQ)
- Roof Reflectivity
- Material efficiency
- Energy efficiency
- Air and vapor transmission
- Climate – Hot/Dry, Hot/Moist, Temperate, Cold
- Moisture buildup within the envelope
- Codes and Standards insulation requirements
- Thermal bridging
- Life Cycle Analysis (LCA)

Government and Professional Organizations and Publications Referencing the Performance of SPF

- U.S. Department of Energy
  - Rebuild America EnergySmart Schools
  - Best Practices Manual for Building High Performance Schools
- U.S. Environmental Protection Agency
  - Envisioning Excellence: Lessons from Effective School Indoor Air Quality (IAQ) Programs
  - Green Buildings and High Performance Schools
- The Collaborative for High Performance Schools (CHPS) Best Practices Manual
- The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) 30% Advanced Energy Design Guide for K-12 School Buildings
- The American Institute of Architects Committee on Architecture for Education Implementing Recommendations from the Advanced Energy Design Guide (AEDG) for K-12 School Buildings
- Council of Educational Facility Planners International (CEFPI) Healthy Schools
- Sustainable Building Industry Council (SBIC) High-Performance School Buildings

Government and Academia Reports on Spray Polyurethane Foam Products

Oak Ridge National Laboratories (ORNL) – Durability
ORNL reports: *"The principal causes of premature roof failure are moisture intrusion and lack of wind resistance. SPF roofing limits moisture intrusion because of its 90% closed-cell properties. Damage to the system typically does not cause leaks into the building, and moisture intrusion is isolated to areas of damaged foam cells."*

"SPF roofing systems have exceptional wind uplift resistance. Field observations of SPF performance during hurricanes Allen, Hugo, and Andrew led the industry to conduct laboratory testing of SPF systems at Underwriters Laboratories (UL) and FM Global. Imagine UL's surprise when SPF's wind uplift resistance actually exceeded the capacity of their equipment. UL also observed SPF roofs applied over a built-up roof (BUR) and metal increased the wind uplift resistance of those roof coverings."

Arizona State University Del E. Web School of Construction and National Roofing Foundation – Long-Term Performance
In the most comprehensive roof survey ever performed by the National Roofing Foundation, 160 SPF roofing systems in California, Texas, Wisconsin, Illinois, New Jersey, and New York were evaluated. The findings concluded that SPF roofing systems appear to have a very high degree of sustainability with an indefinite life expectancy when properly maintained with periodic recoating. The physical properties of SPF did not diminish over time, and more than 70% of the roofs were applied over existing roofing systems.

Learn More

On-Line Continuing Education Programs
Learning opportunities provided for a variety of design professional organizations, code compliance groups and more at AECDaily.

On-Site AIA/CES Programs

- Air Barrier Basics
- Disaster Durable Solutions for Wind and Water
- Spray Polyurethane Insulation and Membrane Roofing Systems
- Spray Polyurethane Foam (SPF): Continuous Insulation and High Performance Envelopes
- SPF 101: Taking Construction to the Next Level
- Spray Polyurethane Closed-cell Foam - Understanding the Fundamentals

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