

Honeywell
THE POWER OF **CONNECTED**

Blowing Agents

Solstice® Liquid
Blowing Agent

**Get Severe Weather
Protection From Closed-Cell
Spray Foam Insulation**



The Leading Insulation Choice For Severe Weather Protection

Closed-cell spray polyurethane foam insulation (ccSPF) is the ideal insulation for hurricane and severe weather zones. It adds structural strength, wind uplift resistance, and water resistance to its outstanding insulation performance. It's also cost-effective, easy to install, durable, improves energy efficiency, and may qualify for rebates, tax credits, and reduced insurance premiums.

Simply put, ccSPF is the superior insulation choice for buildings and homes in severe weather areas.

SEVERE WEATHER PERFORMANCE COMPARISON

From top to bottom, ccSPF dramatically outperforms traditional insulation materials.

	CLOSED-CELL SPRAY FOAM	TRADITIONAL INSULATION MATERIALS
ROOFS	<p>✓ Excellent wind uplift resistance</p> <ul style="list-style-type: none"> • A smooth, continuous surface grips and protects the roof deck • No joints or edges for the wind to "lift up" • Resistant to windborne debris, projectiles, and hail¹ • Self-flashing; adheres without fasteners • Uplift resistance over concrete decks exceeded the capacity of both FM (Factory Mutual) and UL (Underwriters Laboratories) test equipment • Uplift resistance also improved when applied over built-up roofs (BUR) and metal roofs² 	<p>✗ Susceptible to roof lift-off</p> <ul style="list-style-type: none"> • Roofs are most susceptible to hurricane damage⁵ • Insufficient frequency of fastening devices can cause failure • Roof failures increase when sheet thicknesses are inadequate • Sheet layers blow off if weakened due to punctures from debris
WALLS	<p>✓ High structural (racking) strength</p> <ul style="list-style-type: none"> • Adheres and reinforces both exterior sheathing and/or interior studs • Increases racking strength in wall cavities by 300-400%³ • Superior rigidity allows walls to better withstand extreme winds • Fills cracks, preventing air and water infiltration 	<p>✗ Vulnerable to wall failure</p> <ul style="list-style-type: none"> • Extreme winds can cause walls to vibrate, bow inward, and fail • Air infiltration can cause interior pressure changes, blowing out windows and doors • Connection points in steel frames and studs are vulnerable⁵ • Batt insulation can slip down studs over time, increasing air infiltration risk
BASEMENTS	<p>✓ Outstanding water resistance </p> <ul style="list-style-type: none"> • Flood damage-resistant insulation material per the U.S. Federal Emergency Management Agency (FEMA) • FEMA's highest acceptability rating of 5⁴ • Inherently moisture resistant, enabling its use on both exteriors and interiors 	<p>✗ Absorbs water rather than repels it</p> <ul style="list-style-type: none"> • Fiberglass batt, cellulose, and open-cell spray foam insulations absorb moisture • Difficult to dry porous insulations once saturated with moisture • Traditional board insulations have seams that can allow water to penetrate



THE ENVIRONMENTAL CHOICE, TOO

Whether for new construction, storm repairs, or retrofitting an existing building, ccSPF makes a positive difference. For an even bigger impact, be sure to specify a system formulated with Honeywell's non-ozone-depleting, ultra-low global warming potential **Solstice Liquid Blowing Agent**. Not only does it produce better foam, but it's also better for the environment.

Severe Weather Wreaks Havoc

Category 5 hurricanes make the news, but that's just the beginning. Each year, thousands of homes and buildings are damaged or destroyed due to hurricanes, tornadoes, and typhoons. Even worse, these storms can lead to injuries and loss of life.

CATEGORY 5 HURRICANES

- Among nature's most powerful forces due to destructive winds of **157 mph or greater**
- Can unleash catastrophic storm surge and churn up waves higher than an eight-story building⁶

EXAMPLE: Hurricane Katrina (2005):

- One of the most devastating hurricanes in U.S. history (damage estimated at **\$75 billion**)
- **1,200 reported deaths**⁷

BELOW CATEGORY 5* STILL MATTERS

- Hurricane Sandy (Category 1, 2012): **\$50-60 billion** in damage, with only **1/3 covered by insurance**; most damage due to flooding⁸
- Hurricane Matthew (Category 1, 2016): **\$10 billion** in damage stretching from Florida to North Carolina, mostly flood-related and uninsured⁸
- In 2016, the Atlantic, eastern Pacific, and central Pacific all saw above-normal storm seasons⁹
- In 2017, combined damages from Hurricanes Harvey and Irma could cost the U.S. economy as much as **\$290 billion**¹⁰
 - **80% of Harvey victims do not have flood insurance**¹¹



CATEGORY 5
WINDS ARE
157 mph
or greater

* The categories listed refer to when the hurricanes reached the U.S. mainland.



Easy To Install,
Durable &
Improves Energy
Efficiency

Learn More

For more information about closed-cell spray foam insulation with **Solstice Liquid Blowing Agent** or **Enovate® 245fa**, visit honeywellblowingagents.com or contact your nearest spray foam supplier.

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¹SPF systems with Solstice LBA have earned the severe hail rating from FM Approvals, a member of FM Global Group, one of the world's largest business insurers

²Mason Knowles, former technical director of the Spray Polyurethane Foam Alliance: <http://sprayfoam.com/document-files/a18912fd1984e3b8b1b725fe9dede1d20deea6b7.pdf>

³NAHB research: <http://sprayfoam.com/document-files/a18912fd1984e3b8b1b725fe9dede1d20deea6b7.pdf>

⁴FEMA Technical Bulletin 2-08 (replaces 2-93): Flood Damage-Resistant Materials Requirements (August, 2008). https://www.fema.gov/media-library-data/20130726-1502-20490-4764/fema_tb_2_rev1.pdf

⁵Tony Gibbs, CEP International: Hurricanes and their Effects on Buildings and Structures in the Caribbean. Presented at the USAID/OAS PGDM building inspector workshop (January, 2001) www.oas.org/pgdm/document/bitc/papers/gibbs/gibbs_01.htm.

⁶The Weather Channel: <https://weather.com/storms/hurricane/news/atlantic-hurricane-category-five-history-0>

⁷National Oceanic and Atmospheric Admin. (NOAA): <http://www.nhc.noaa.gov/outreach/history/#katrina>

⁸NOAA: <https://www.ncdc.noaa.gov/billions/events/US/1980-2017>

⁹NOAA: <http://www.noaa.gov/media-release/first-above-normal-atlantic-hurricane-season-since-2012-produced-five-landfalling-us>

¹⁰AccuWeather forecast: <http://abcnews.go.com/US/hurricanes-harvey-irma-cost-us-economy-290-billion/story?id=49761970>

¹¹USA Today: <https://www.usatoday.com/story/money/2017/08/29/hurricane-harvey-houston-flood-insurance-damages-claims/611910001/>

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