2025 SPRAYFOAM Convention & Expo
Daytona Beach, FL February 9-12

BEYOND HIGH PRESSURE SPRAY FOAM

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Dan Schroer
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Dan, a mechanical engineer by education, has been an R&D scientist within Dow/DuPont Performance Building Solutions for the past 25 years. He is currently focused on developing innovative dispensing technologies for our spray polyurethane business.

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Who am I? What can I help with?

Dispensing Technology
Foam Technology

+

Building Science

Dan Schroer

Research Scientist

DUPONT™

SPFA SPRAY POLYURETHANE FOAM ALLIANCE

SPFA Antitrust Policy

"Our policy is to comply with all federal, state and local laws, including the antitrust laws. It is expected that all company member representatives involved in SPFA activities and SPFA staff will be sensitive to the unique legal issues involving trade associations and, accordingly, will take all measures necessary to comply with U.S. antitrust laws and similar foreign competition laws."

It is a per se violation of the federal antitrust laws for competitors to agree on prices, limitation of supplies, allocation of customers or territory, or boycotts. "Per se" means that no legal defense can be used to mitigate this automatic violation.

Even an agreement by competitors that is for the good of society and our industry may be a violation of the antitrust laws if it could affect competition.

If a topic of antitrust concern is raised at any time during a meeting, note your objection for the record. If the topic continues to be discussed, you should leave the room immediately and contact SPFA's general counsel and your company's attorney for further guidance.

Ensure that every SPFA meeting, where members are present, has an agenda, the agenda is followed, and minutes are kept by SPFA staff of the proceedings.

Understanding and acting on the requirements of U.S. and foreign antitrust and competition laws sometimes can be difficult. If you have a question about the propriety of activities or discussions in SPFA, you are encouraged immediately to contact your company's legal counsel and SPFA management.

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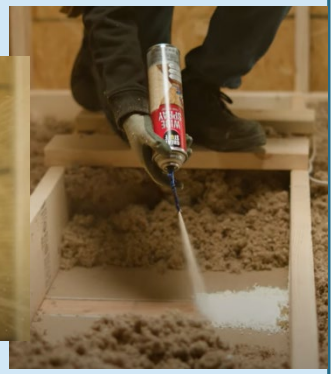
What we'll cover today…

Will discuss!!

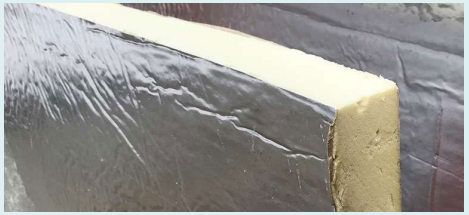
Low Pressure Spray Polyurethane Foam (SPF / 2K)

Aerosol Spray Foam (sOCF, 1kLP)



Won't discuss

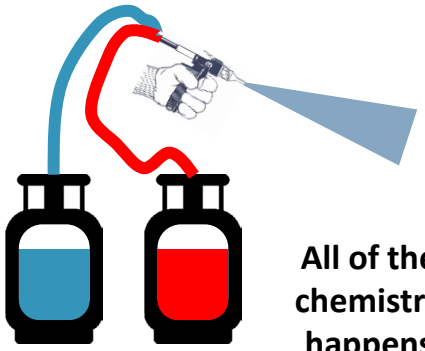
Isocyanurate Foam
(foil-faced or paper-faced
"iso")



High Pressure SPF

Chemistry

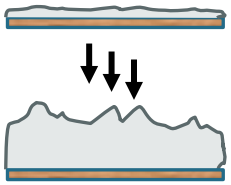
Two Component Foam



All of the chemistry happens on site!

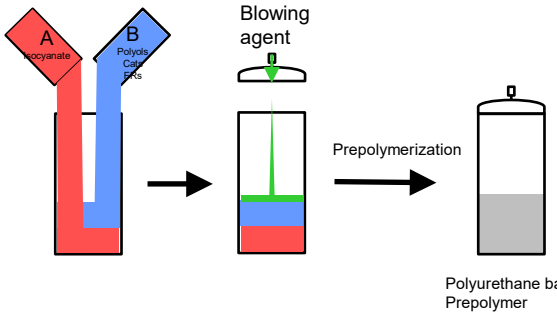
Differences to High Pressure Foam

- Slower reactivity
- Needs Frothing blowing agent
- Less equipment

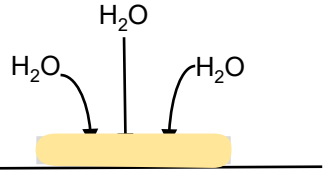


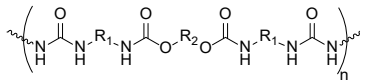
Foam w/ GBA, then LBA, solidify by **reaction**

One Component Foam



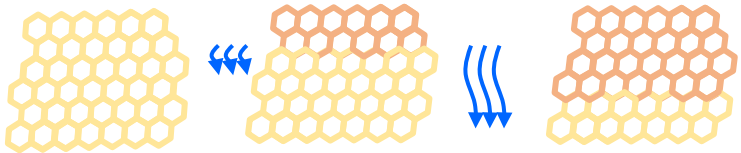
Part of the 'chemistry' happens in a factory, **Part** happens after dispense on site





Fully crosslinked polymer network

Foam w/ GBA, solidify by **reaction**

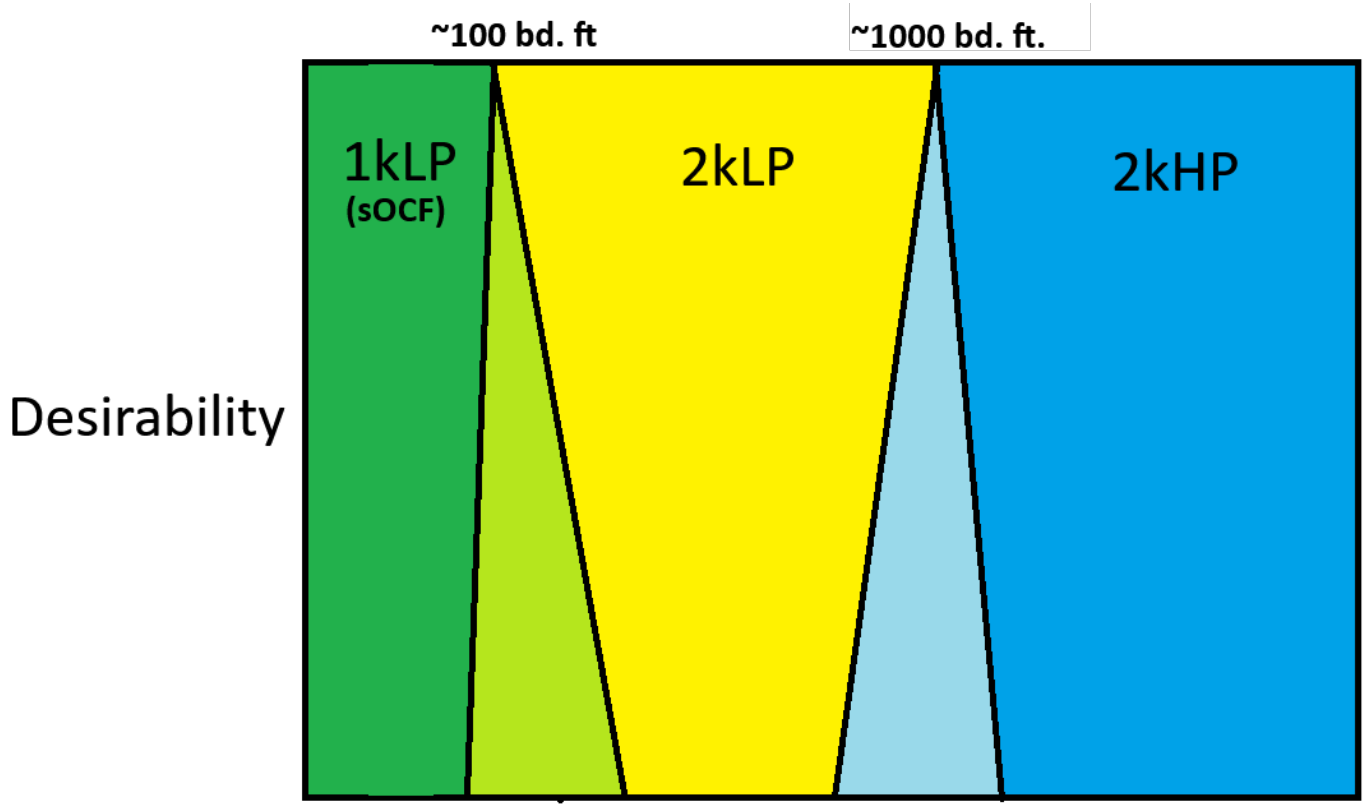


SPRAY POLYURETHANE FOAM ALLIANCE

Summary table: Pros and Cons

Product	Safety	Mobility	Skill required	Job time	Large Area Coverage
2K High Pressure	Respirator and skin covering, and ventilation required	Difficult in crawls and attics	Ratio control Foam comes out FAST!	Setup time = slow Spray time = fast	
2K Low Pressure	Respirator and skin covering, and ventilation required 1 hour reentry	Difficult in crawls and attics	Ratio control Foam comes out FAST!	Setup time = Med. Spray time = fast	
1K Bead Foam	Eyes + skin			Setup time = fast Spray time = slow	Just don't…
1K Spray Foam	Eyes + skin				

Job size - When 2kLP and 1kLP may be advantaged over High Pressure Foam



1kLP = One Component Low Pressure
2kLP = Two Component Low Pressure
2kHP = Two Component High Pressure

More examples of when Low Pressure advantaged over High Pressure Foam

- Call backs
- Commercial jobs and spraying at height (hoses aren't long enough or too cumbersome)
- Need to maneuver across large spaces (cold storage buildings…)
- Tight gaps/spaces difficult for larger high pressure guns

2K Low Pressure SPF

HandiFoam
Completely Professional.

Versi-Foam® systems

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Common Applications

Air Sealing





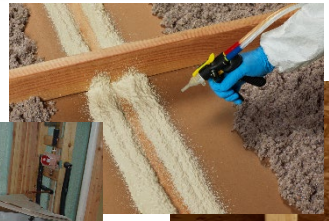

Insulation




Residential Crawl Spaces

Cantilever Floors

Misc. air sealing



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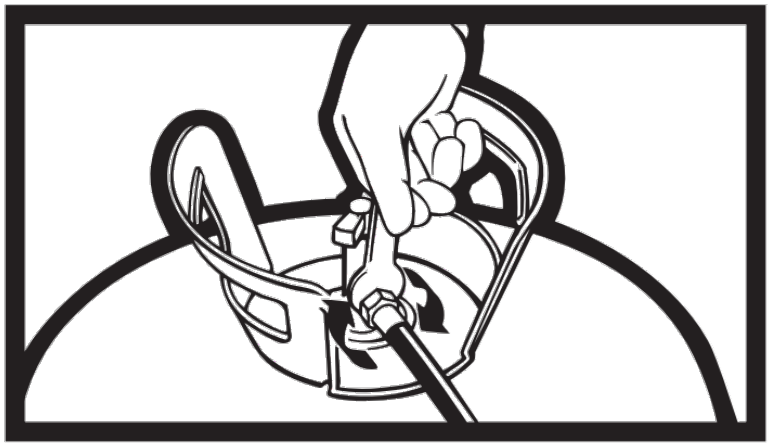
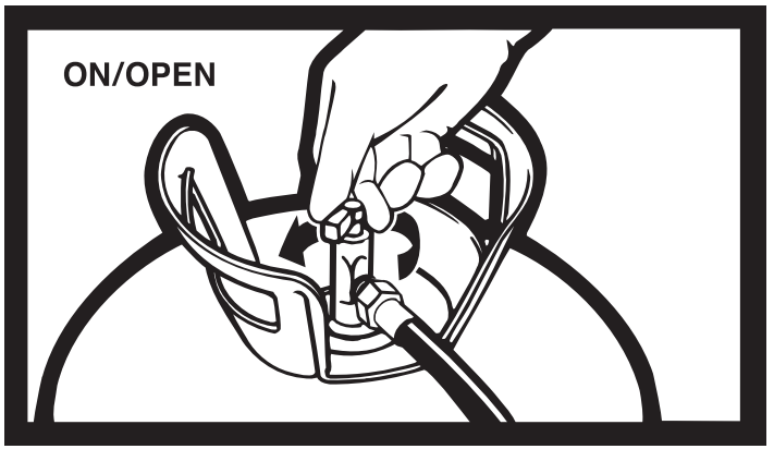
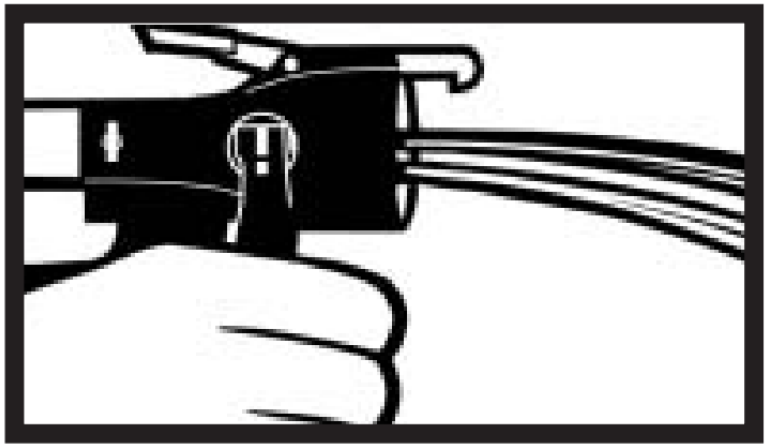
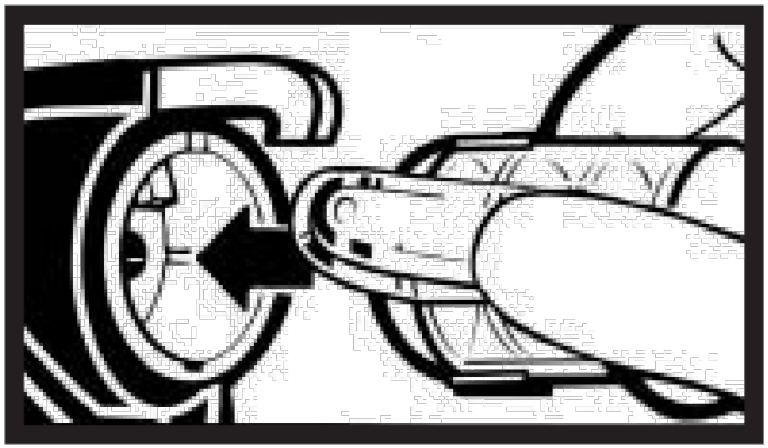
Basic Instructions









Tips on getting the most out of 2K LP

Top 3 mistakes:

- **Temperature**
- Ratio
- Overfill

Surface is too cold!

Spraying in low temperature- it can be done! (but not recommended)

No flash coat

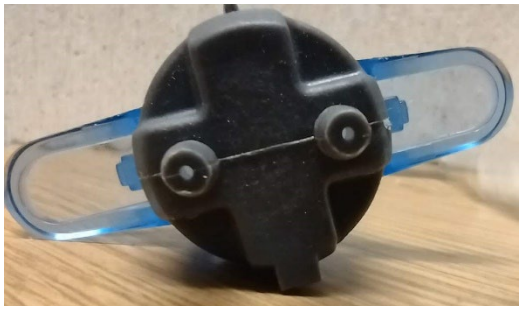
Thick flash coat

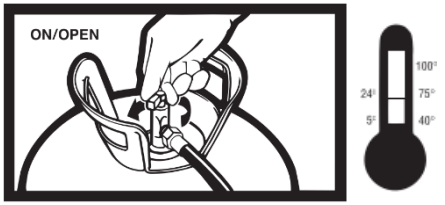
Thin flash coat

Tips on getting the most out of 2K LP

Top 3 mistakes:

- Temperature
- **Ratio**
- Overfill
- **#1 reason for off ratio foam is clogged nozzles** (waited too long after stopping spraying)
- #2 reason is cold temperature
- **Reminder: Kits can be reused if stored properly**





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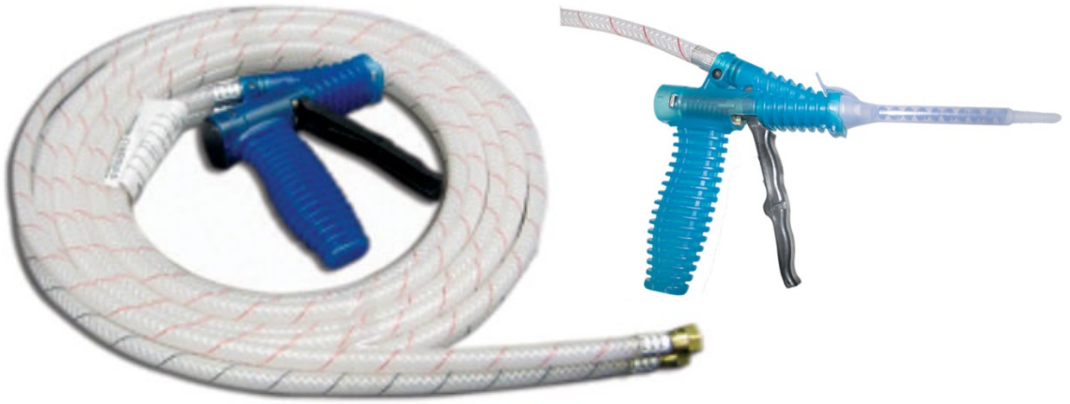
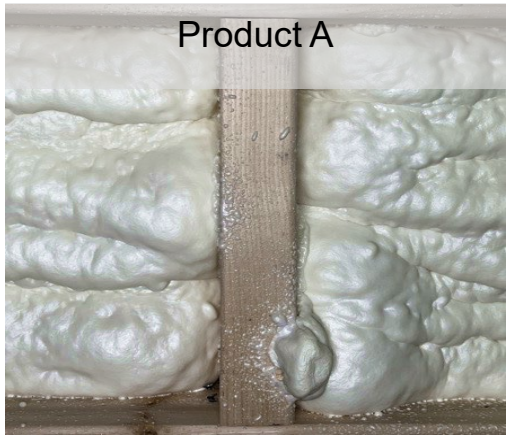
Not all 2K LP is created equal

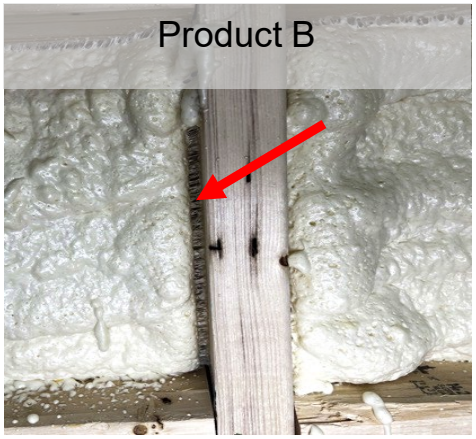
Non metered, flexible hoses

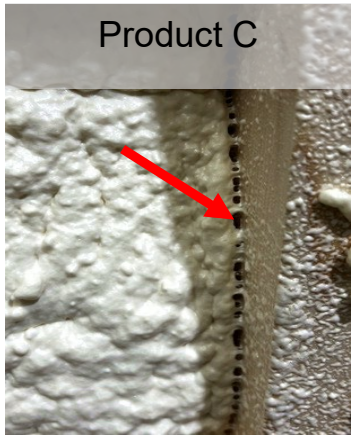
Metered guns, stiff hoses



- Flow, ratio, yield
- Nozzle spray pattern
- Hose stiffness
- Stud line cracking







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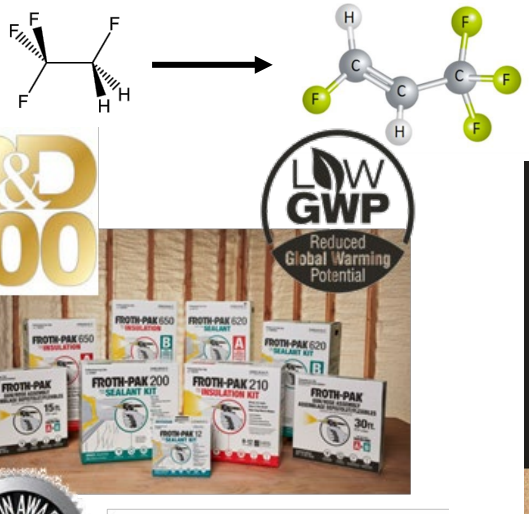
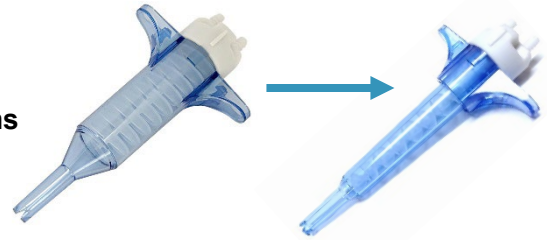
Recent Tech Advancements

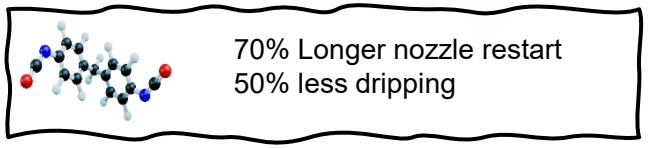
- Low GWP Blowing Agents



Nozzle technology

Froth Pak ™
Extended use nozzle
Superior Spray Patterns





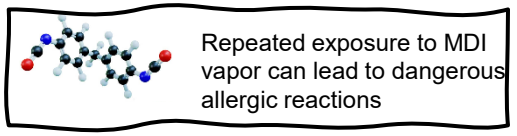
Handi Foam®
Temperature-indicating nozzle

All-in-one snap tip: cone or fan

Safety basics (not a substitute for training and certification)

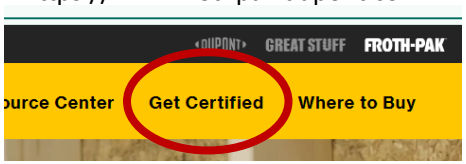
PU Rule #1: Cover <u>everything</u> you don't want ruined

Just do it…

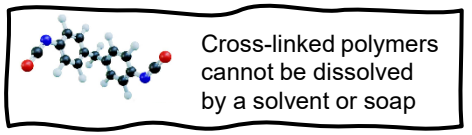


See PU Rule #1

https://www.frothpak.dupont.com



See PU Rule #1



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1K Spray Foam

Safety Check- anything wrong with this picture?

Why 1K Spray Foam?

Compared to 2k high and low pressure…

- **Fast** set-up
- **Less PPE**, Lower health risk
- **Right-sized for small jobs (both volume and cost)**
- **Lighter, Portable**- carry in attic, crawl space, etc.
- Always on ratio
- Lower skilled labor
- No need for big rig and cleaning maintaining guns, etc.
  - Or work in parallel with big rig

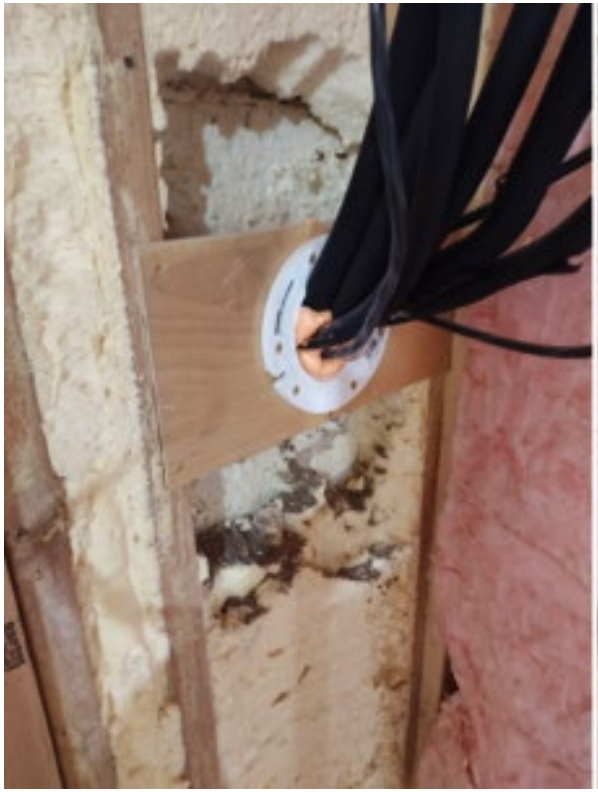
Attics

No navigating hoses
No worries of damaging hoses
Highly portable
Less PPE*

Sprays like 2kLP i.e. Froth-Pak

* Follow Manufacturer Guidelines

Spray foam job repairs



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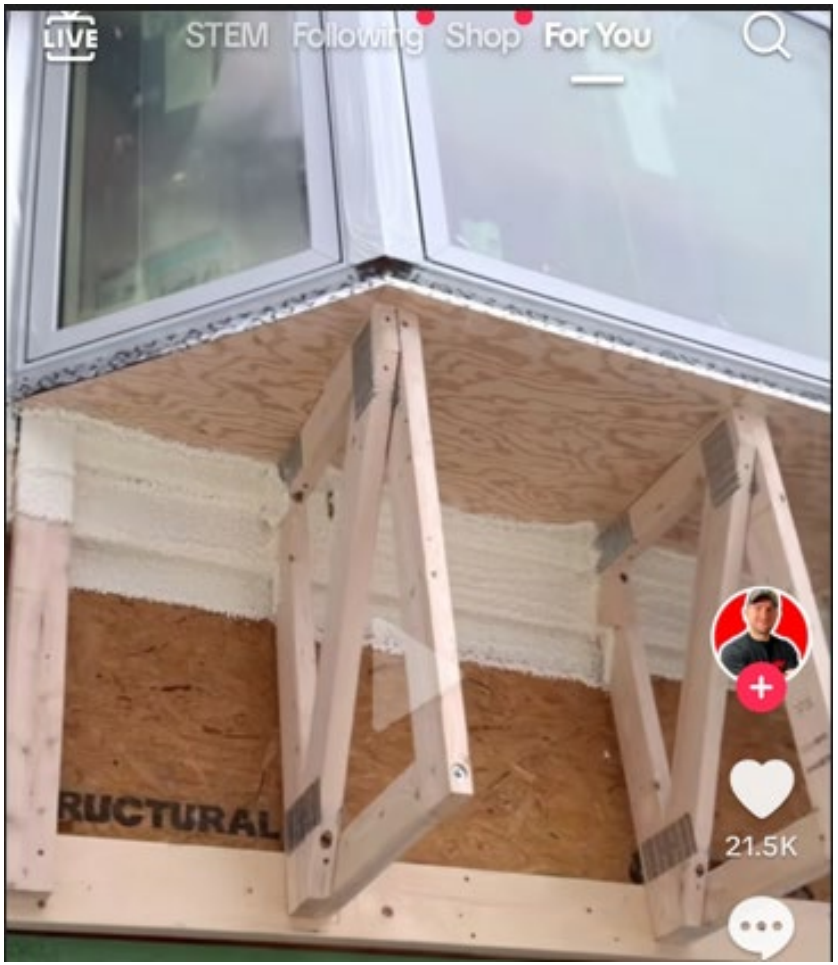
When to reach for 1K sOCF?



When to reach for 1K sOCF?

Early market – Many “cookie cutter” options

Cylinder size

STANLEY Supercoat Spray Foam Insulation Kit - Closed Cell Spray Foam Covers Up to 240 Sq.Ft. - Including Gun, Cleaner, Safety Items - 27.1 oz, 12 Pack

Visit the Stanley Store

4.3 ★★★★½ 61 ratings

Amazon's Choice in Urethane Adhesives by STANLEY

100+ bought in past month

$258.99

Or $18.83 /mo (18 mo). Select from 1 plan

Size: 12 Pack

1 Pack | 2 Pack | 3 Pack | 6 Pack | 12 Pack

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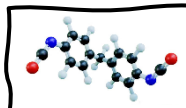
Current market – New options

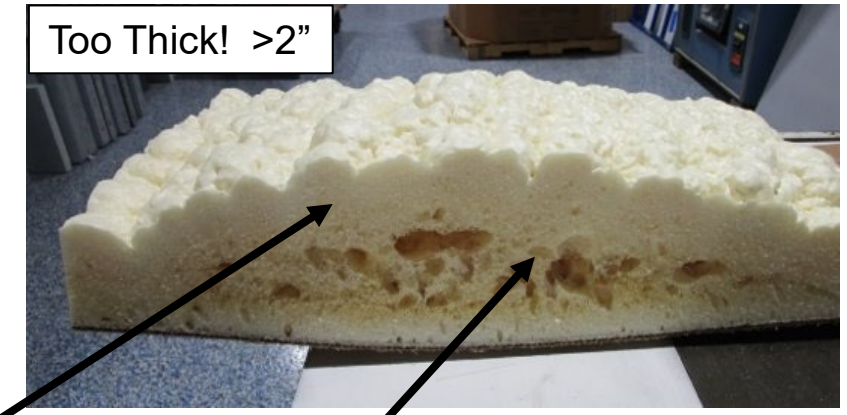
New straw based sOCF

What are the limits of Spray 1K

- Spraying too thick
  - Weight of foam causes sagging or delamination from wall
  - Difficult to get water cure completely through the foam
- Needs humidity (or water spritz)
- ~R4 / inch
- Longer Cure time

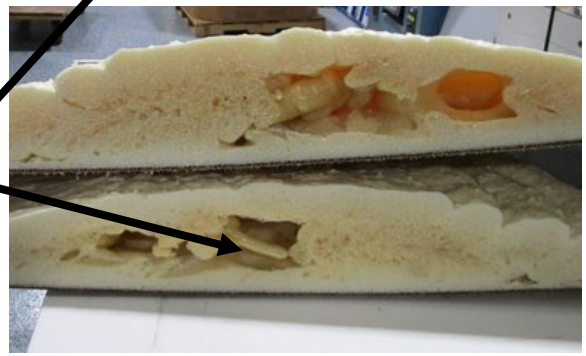


Diffusion of water drops with thickness; apply in layers if thicker application is needed



Cured nicely

Not enough water



Why you will want a couple cans in your truck at all times

- Small quick jobs
- Touch ups / repairs
- Missed spots
- Call backs
- Virtually no maintenance/cleaning

Tips on getting the most out of Spray 1K

<u>Top mistakes:</u>

- **Moving too slowly**
- **Spraying over uncured foam**
  - Blows foam off surface
- **Spraying too thick. Aim for ½" maximum wet foam (will cure to ~1.5").**

Safety – simpler than 2K spray!*

*For short-term spray.
All-day spraying or spraying in unventilated spaces may warrant respirator use.
See manufacturer guidelines.

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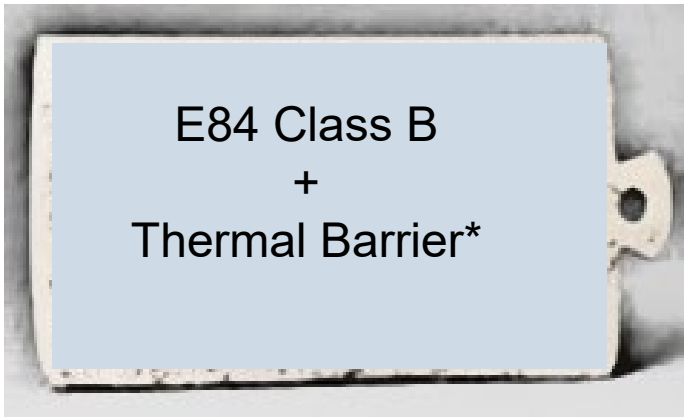
Fire Code requirements for PU (and other) foams

IRC Section R316.3

The Rule



*1/2" gypsum, 23/32 wood panel, 1" masonry or concrete, or NFPA 275-tested product

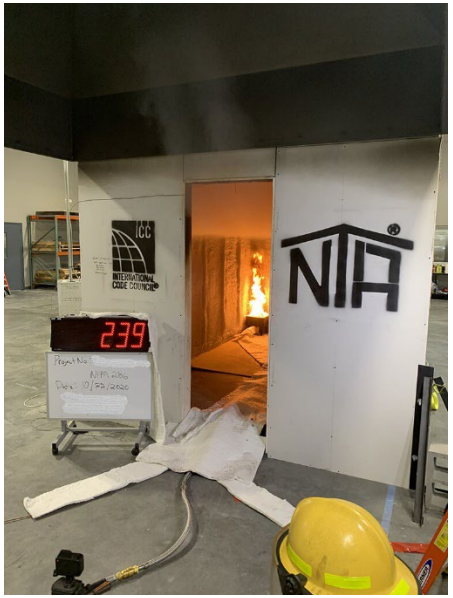
The Exceptions

Attics + Crawl Space
Not living space + covered by an ignition barrier (fiberglass batt/blown, blown cellulose, sheet metal, etc…)

Sill plates and rim joist
Must pass E84 Class A, max thickness of 3", 0.5 – 2 pcf density

The Outliers

Must pass NFPA-286 for specific applications



https://www.icc-nta.org/services/testing/nfpa-286/

Questions!

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