



Foamfrax



for
Ground Flares

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cleaner
safer

*specialty products that
save energy, reduce pollution and improve fire safety*

Overview

- Technology
- Foamfrax Process
- Benefits
- Product Forms
- Case Studies

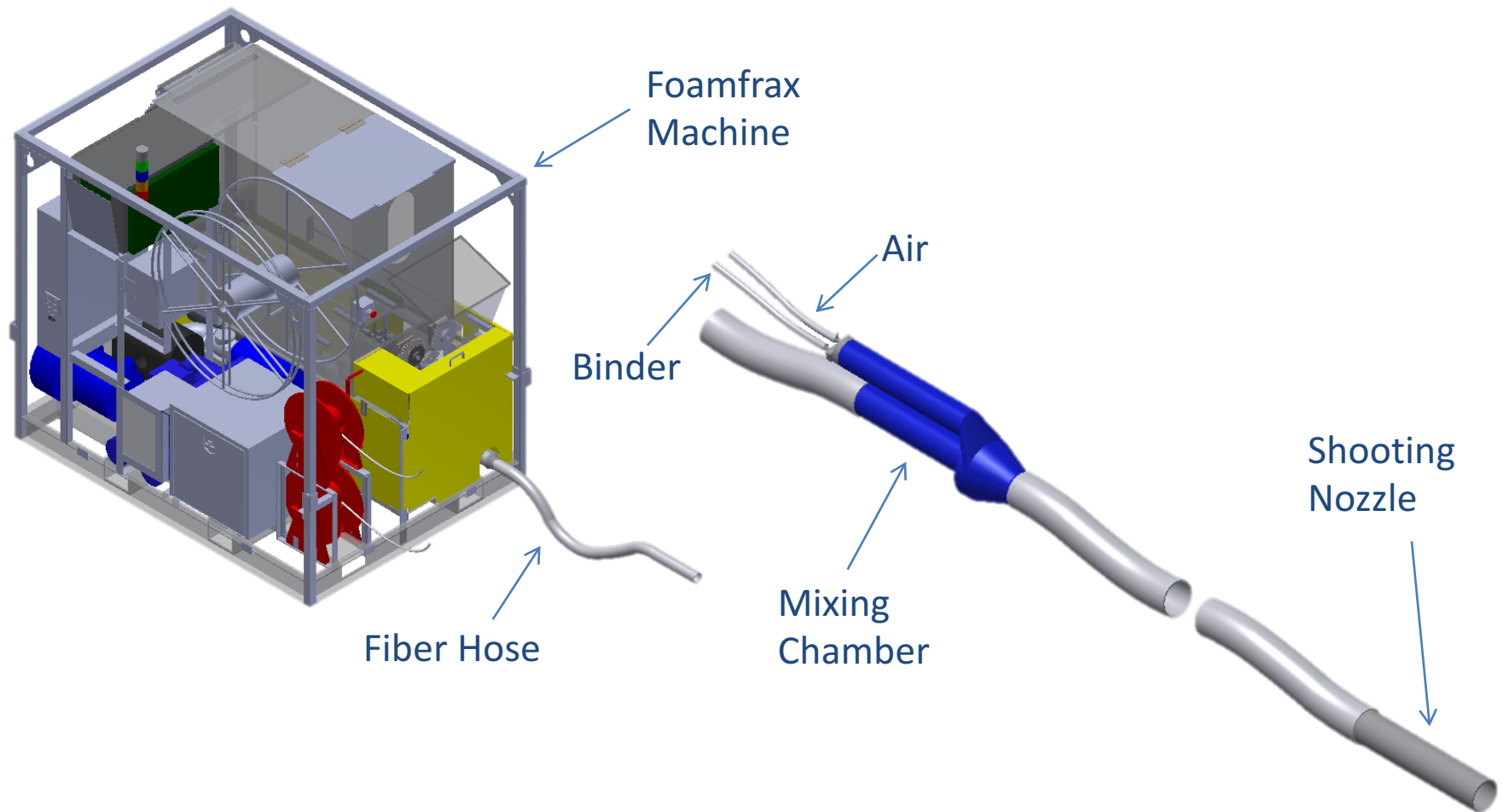




Technology

- **Proprietary Technology Encapsulates Fibers in Foam Binder Matrix**
- **Unifrax Holds the Technology License for the Refractory Market, Global Agreement**
- **Foamfrax Utilizes Proprietary Binders and Equipment.**
- **Installed by Unifrax Licensed Distributor/Contractors**

Foamfrax Process





Benefits

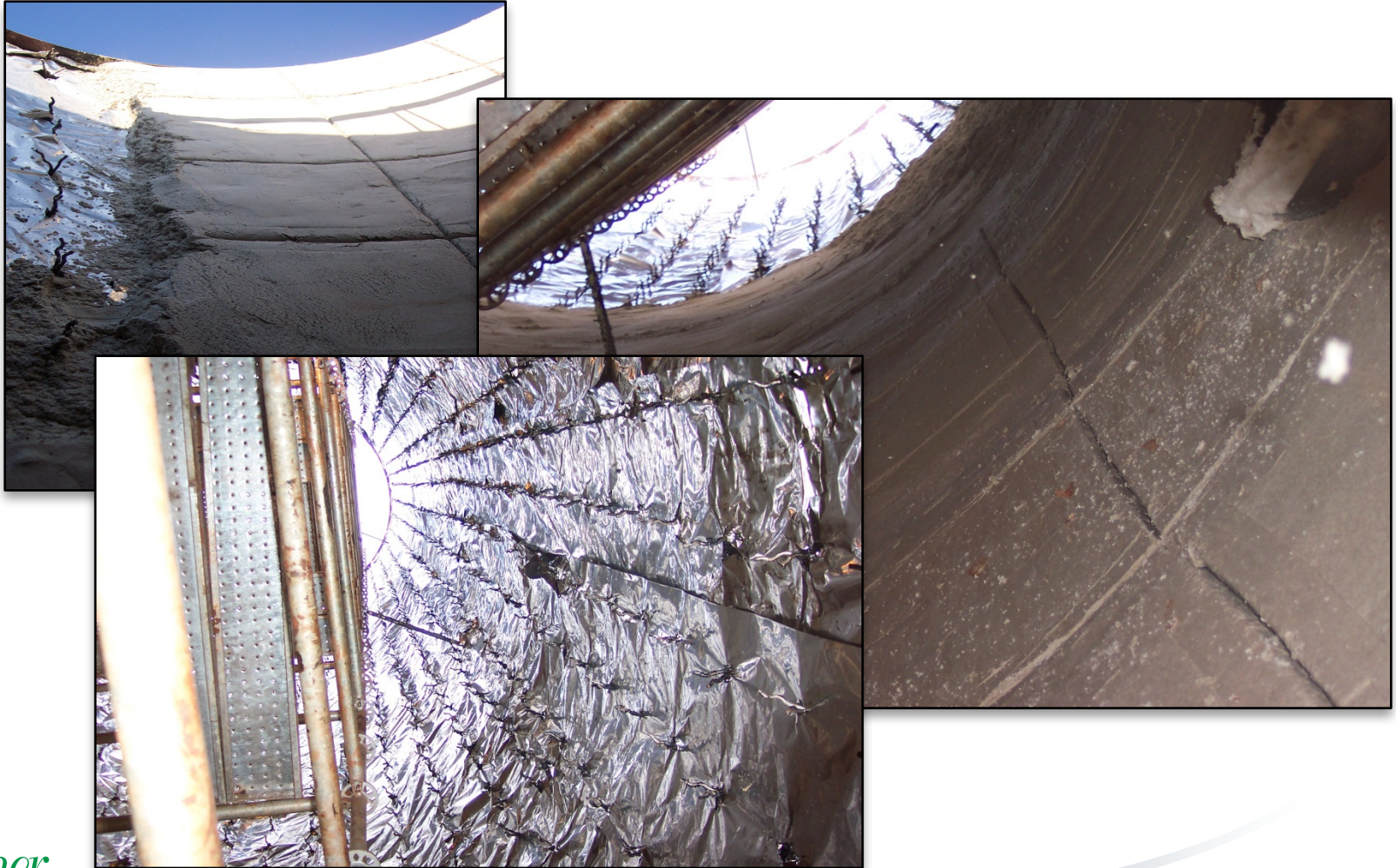
- **Speed of installation.**
- **Unexposed anchoring system.**
- **Withstands elements.**
- **Upgrade over existing hard refractory and RCF linings.**
- **Lighter (25pcf) than dense refractories.**
- **Monolithic ceramic fiber lining system.**
- **Well suited for intricate geometries .**

Product Forms

- Foamfrax Grade I (2300° F)
- Foamfrax Grade II (2600° F)
- Foamfrax Grade III (3000° F)
- **Foamfrax RG (1800° F)**
- **Foamfrax RG+ (2300° F)**
- Foamfrax HD (2300°, 2600° & 3000°)
- Isofoam (2300° F) Low Bio-Persistent Fiber
- Isofoam RG (1800° F) Low Bio-Persistent Fiber



Ground Flares





Foamfrax RG Plus

- **Application Story**
 - Unit: Ground Flare, 2000F maximum
 - Current Lining System: Layered Blanket, 4"
 - Proposed System: RG Plus, 4"
- **Issue**
 - The blanket lining performed well for the thermal shock of the application, but weather exposure shortened the life of the lining. Castable materials failed due the rapid cycling of the unit.
 - Weathering and Thermal Shock were the main concerns.

Ground Flare Application



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UNIFRAX

SS Foil installed over “V” anchors



Foamfrax RG+ gunned to a thickness of 4"



Surface troweled to a smooth finish



Score lines added at 2 foot centers



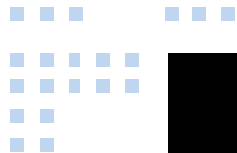


Foamfrax RG Plus

- **Results**
 - Installed in April 2006. The plan was to evaluate for 6 months. However, given the excellent performance, another unit was installed in July at the same location.
 - The RG Plus provided resistance to thermal shock and was able to withstand moderate exposure to weather.
 - Buried anchors reduced the likelihood of corrosion.
 - Lower density reduced the structural requirements.

Product Performance

	Performance Acceptance Criteria		
	Layered Blanket	Foamfrax RG	Hard Refractory
Weather Exposure	NO	YES	YES
Thermal Cycling	YES	YES	NO
Thermal Shock	YES	YES	NO
Buried Anchors	NO	YES	YES
Monolithic	NO	YES	YES
Density	4-8 PCF	20-25 PCF	40-160 PCF





Foamfrax University



You 



QUESTIONS ?

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Thank You For Considering Foamfrax & Foamfrax RG as a Heat Management Solution

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