

## CASE STUDY

# Erosion Threatens Parking Structure in Posh Downtown Dallas. Contractor Uses TerraThane™ to Save the Structure and the Owner Millions of Dollars.



## PROBLEM

Erosion of the soil around in-ground parking garages causes major problems and can cost plenty to fix. A small case of erosion can quickly cause silt infiltration that overwhelms and clogs the drainage system, thus causing more and worse erosion until the entire structure is threatened.

Erosion around a three-story, in-ground parking garage in Dallas' "Uptown" area and home to some of the city's posh apartments, business addresses, shopping, hotels, restaurants and bars, created a large void in the soil surrounding the piers and gave the developer serious headaches.

Learn more at  
[www.TerraThane.com](http://www.TerraThane.com)  
or call  
**1-866-NSULATE**  
(1-866-678-5283)

## SOLUTION

David Edens, president of Edens Structural Solutions, Bixby, OK, says his company studied the problem and, "Our solution was to use a TerraThane™ geotechnical foam system. It's simple to apply, expands and cures in place, and is an excellent water and air barrier."

They:

- + Drilled a shaft down along the piers and soldier piles and lagging, to survey the problem and found the water had gone through the block wall and carved out what appeared to be a five-foot cavity.
- + Chose NCFI's TerraThane™ geotechnical foam
- + Used boroscope, ground-penetrating radar, to help determine the overall void and cavity dimensions
- + Ran a 3/8-inch vinyl tube behind the block and dropped in the TerraThane™ polyurethane foam

## RESULTS

Edens says, "TerraThane™ gives us four products in one." It fills in large and small voids running both vertical and horizontal in the cavity, serves as a water and air barrier so it will impede future water and silt infiltration, it's amazingly strong, and it's light, so it won't add any weight to the block wall. We were in and out in two months with minimal disruption of the parking. The

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alternative would have been to shut the entire structure down for a year-and-a-half as they removed the entire block wall, dug out the lagging, installing 26 gauge panels, then backfilled the cavity with gravel. That might have cost upwards of \$2 million or more, plus loss of parking revenue. TerraThane saved this one and the owners have asked us back for more work."



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# TECHNICAL SPECIFICATIONS

## NCFI TRENCH BREAK FOAM SYSTEM 24-023

### DESCRIPTION

NCFI 24-023 is a two-component, water and HFC-245fa co-blown, polyurethane foam system designed for use as a void fill, trench-break material. NCFI 24-023 has been formulated to process at 2.0-2.2 pcf depending on lift thickness. 24-023 is designed to be built up in great lift thickness without scorch or splitting. NCFI 24-023 is not ASTM E-84 flame spread rated and is not to be used in applications governed by building codes. This product is also offered in a high altitude variation that will maintain the 2 pcf density when processed at high elevations.

### DISTINGUISHING CHARACTERISTICS

- + Ease of Processing & Handling
- + Scorch Free Processing
- + Good Interlayer Adhesion

### TYPICAL RESIN PROPERTIES

	24-023 R	24-023 A
Viscosity	580 cps	200 cps
Lbs./Gallon	9.0 lbs.	10.3 lbs.
Appearance	transparent, amber liquid	transparent, brown liquid
Shelf Life	6 months	6 months

### MIX RATIO

	24-023 R	24-023 A
By Volume	100 parts	100 parts

### TYPICAL REACTION PROPERTIES

	Hand Mix @ 50°F
Cream Time (sec)	5
Tack Free Time (sec)	22
Rise Time (sec)	90
Machine Tack Free Time @ 130°F (sec)	8

### TYPICAL PHYSICAL PROPERTIES

Core Density, ASTM D-1622	2 pcf
Compressive Strength @ Max Load, ASTM D-1621	27 psi
Closed Cell Content, NCFI TM 300	>95%
Water Absorption, ASTM D-2842	<0.08 lbs/ft <sup>2</sup>
Resistance to Solvents	Excellent
Maximum Service Temp	180°F
28 day Dimensional Stability	Vol. Change
-20°F	-0.1%
200°F	-0.2%
158°F, 95% RH, ASTM D-2126	1.2%

\*The above values are average values obtained from laboratory experiments and should serve only as guidelines.

The information on our data sheets is to assist customers in determining whether our products are suitable for their applications. The customers must satisfy themselves as to the suitability for specific cases. NCFI Polyurethanes warrants only that the material shall meet its specifications; this warranty is in lieu of all other written or unwritten, expressed or implied warranties and NCFI Polyurethanes expressly disclaims any warranty of merchantability, fitness for a particular purpose, or freedom from patent infringement. Accordingly, buyer assumes all risks whatsoever as to the use of the material. Buyer's exclusive remedy as to any breach of warranty, negligence or other claim shall be limited to the purchase price of the material. Failure to adhere strictly to any recommended procedures shall relieve NCFI Polyurethanes of all liability with respect to the material or the use thereof.



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