

CASE STUDY

Visitor's Center for Eastern U.S.'s Most Popular Rock Climbing Destination Needs Concrete Slab Lifting Without Closing Doors.



PROBLEM

Seneca Rocks Discovery Center, the visitor's center for the eastern U.S.'s most popular rock-climbing destination, had a problem common to concrete slab foundations: erosion beneath the slabs caused voids that left areas of the center with uneven spots—some up to three inches—and created tripping dangers for the thousands of visitors to one of the most popular scenic attractions in West Virginia. Any solution had to be quick, clean, affordable, and not cause inconvenience for the thousands of visitors to the U.S. Forestry Service building.

SOLUTION

U.S. Forestry Service called in Mid-South Concrete Leveling (MSCL), Milan, TN, to assess the problem. Eddie Bolton, president of MSCL, suggested they repair the slabs instead of costly replacement. MSCL used TerraThane™ Geotechnical Polyurethane Foam System, by U.S. company NCFI Polyurethanes, to fill the eight-10-inch voids, and lift the slabs to level.

- Removed existing caulking and drilled small 5/8th-inch holes in the slabs in the conference rooms, hallways, bathrooms, and patio. The smaller holes caused very little dust and disruption
- Pumped in TerraThane™ high-density polyurethane foam to fill the voids and lift the slabs to level
- Added drainage, new caulking, and cleaned up the areas quickly, and with minimal disruption to the center's normal activity
- Completed job in only 3.5 days

RESULTS

- Voids were filled with TerraThane™, which becomes monolithic and stabilizes soil
- Concrete slab floors were leveled
- Weight on existing soil is approx. 4 lbs., compared to 130 lbs. of concrete grout
- Tripping hazards were remediated
- Required no closing/downtime for the Discovery Center, which remained open during the 3.5 days of work
- Clean up was minimal v. legacy repair method, or replacement
- Saved thousands of dollars repairing, v. replacement, or heavy construction method of digging out slabs, mudjacking voids, and replacing slabs.

Learn more at
www.TerraThane.com

or call

1-866-NSULATE
(1-866-678-5283)

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TECHNICAL SPECIFICATIONS

NCFI POUR-IN-PLACE SYSTEM 24-003

DESCRIPTION

NCFI 24-003 is a hydrophobic, two-component, HFC 245fa blown, all PMDI-based, pour-in-place urethane foam system designed for concrete jacking and cavity filling in wet environments. NCFI 24-003 has low component viscosities making the system suitable for mechanical mix machines, high pressure (over 600 psi) impingement mixing machines or hand mixing.

DISTINGUISHING CHARACTERISTICS

- + Excellent Lifting Capacity
- + Good Performance in Wet Environments
- + Excellent Compressive Strength
- + Good Dimensional Stability

TYPICAL RESIN PROPERTIES

	24-003 R	24-003 A
Viscosity @ 72°F	475 cps	200 cps
Lbs./Gallon	8.9 lbs.	10.2 lbs.
Appearance	opaque, transparent, black liquid brown liquid	opaque, transparent, black liquid brown liquid
Shelf Life	6 months	6 months

MIX RATIO

	24-003 R	24-003 A
By Weight	100 parts	116 parts
By Volume	100 parts	100 parts

TYPICAL REACTION PROPERTIES

	Hand Mix @ 72°F	Hand Mix @ 120°F
Cream Time (sec)	20	7
Gel Time (sec)	47	
Tack Free Time (sec)	51	14
Rise Time (sec)	90	15
Density (FRC)	4 pcf	3-4pcf

TYPICAL PHYSICAL PROPERTIES

Core Density, ASTM D-1622	5.5 pcf
Compressive Strength, ASTM D-1621	90 psi
Closed Cell Content, NCFI TM 300	>94%
Water Absorption, ASTM D-2842	<0.04 lbs/ft ²
Resistance to Solvents	Excellent
Resistance to Mold and Mildew	Excellent
Maximum Service Temp	200°F

*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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