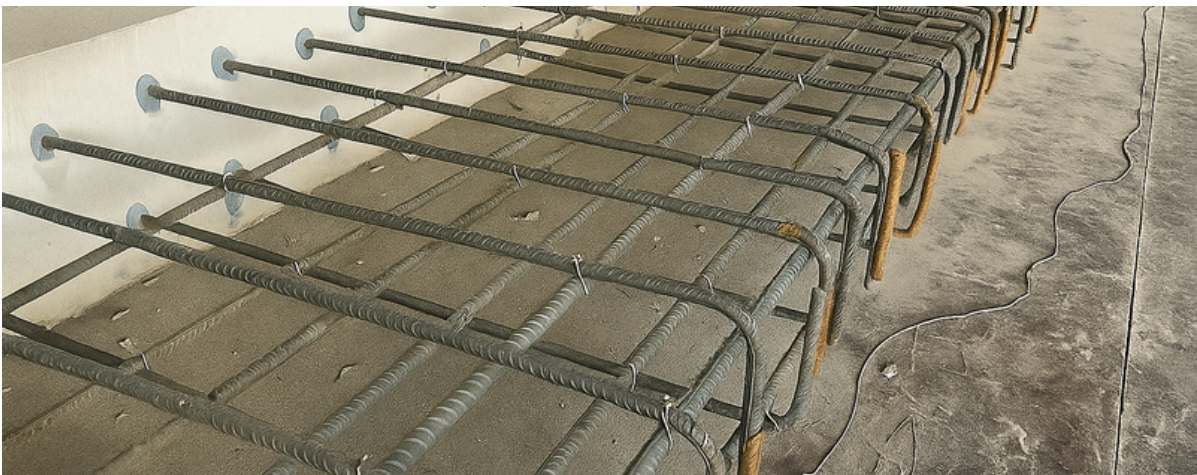
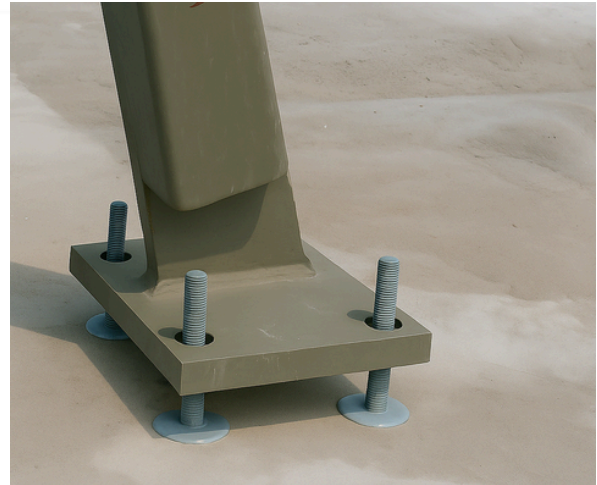




Your Concrete Solution



**SPEC<sup>CH</sup>EM**  
Solution to Service

**SpecPoxxy HSHV**

High Performance Structural hi-mod, gel anchoring epoxy



[www.SpecChem.com](http://www.SpecChem.com)

# SpecPoxy HSHV

## Anchoring Adhesive

For doweling and threaded rod applications.

SpecPoxy HSHV is a two-component, moisture insensitive, high modulus, structural epoxy bonding gel. SpecPoxy HSHV is formulated for anchoring threaded rod and rebar into drilled holes in solid concrete substrates. It is also suitable for bonding cured concrete to masonry materials, and for filling large cracks or abandoned holes.

### Product Information

Mix Ratio	1 to 1
Mixed Color	Gray
Viscosity	Gel/Paste
Gel time (ASTM D2471)	18 minutes
Packaging	22 oz, 51 oz, 10 gal
Base Materials	Concrete and masonry
Base Materials Conditions	Dry, water-saturated
Anchor Type	Threaded rod or rebar
Substrate Installation Temperature:	50°F (10°C) to 110°F (43°C)
Storage Temperature	45°F (7°C) to 90°F (32°C)
Shelf Life	24 months
VOC	0 grams per liter



### Features

- Anchors bolts, dowels, and reinforcing steel
- Suitable for dry and water saturated conditions
- Vertical and overhead structural anchoring bonding and patching
- For use in concrete, block, brick, or stone
- Mixing nozzle proportion adhesive and provide simple delivery method into drilled holes
- VOC Content = 0 grams per liter

### Standards

Meets ASTM C881 & AASHTO M 235, Type I, II, IV, and V, Grade 3, Classes B & C  
Complies with Florida DOT Section 937 Type HSHV

## Recommended Equipment

Package Size	22 fl. Oz. Cartridge	51 fl. Oz. Cartridge	10 Gallon Kit (Resin)	10 Gallon Kit (Hardener)
Part #	SPHSHV-22	SPHSHV-51	SPHSHV-A-10	SPHSHV-B-10
Recommended Mixing Nozzle	CART-MIXER-CLS			
Manual Dispensing Tool	B26T600	N/A		
Pneumatic Dispensing Tool	AT600	AT1500X	Pump	
Battery Tool	E18T600	N/A		
Case Qty.	12	5	N/A	
Pallet Qty.	432	252	90 Kits	
SDS Brush Adaptor	SC-BRUSH			
Brush Extension	SC-BRUSH-EXT			
Nozzle Extension Tubing	SC-TUBE-EXT			



Dual Cartridge Gun



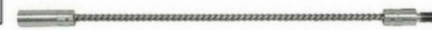
Mixing Nozzle



Nozzle Extension Tube



Wire Brush



Brush Extension

## Application

**Mixing Instructions:** Air, material and surface temperatures must be a minimum of 40°F (4°C) prior to mixing or installation. To assist with mixing and dispensing, precondition material to 75°F. For cartridges, the resin and hardener are uniformly dispensed and mixed simultaneously through a mixing nozzle.

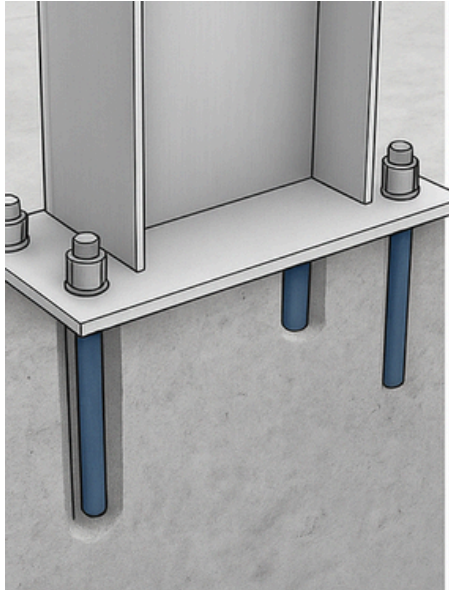
**Surface Preparation:** Surfaces to be bonded must be clean and structurally sound. Remove all oil, grease, dirt, laitance, curing compounds, and any other foreign matter by sandblasting, mechanical abrasion or hydro blasting. All drilled holes must be cleaned out with a nylon brush removing all dust and loose material. Use clean, oil free compressed air to blow out any remaining water, dust, or debris prior to application. Bolts, rebar or threaded rod should be free of dirt, grease, oil or other foreign material.

**Anchoring:** For use in anchoring dowels, bolts, fiber-glass rebar, reinforcing steel, etc. the minimum depth of the hole should be approximately 9 times the bolt diameter. The hole diameter should be approximately 1/8" larger than the threaded rod diameter. Ensure the holes are properly prepared, (drilled, brushed and blown out) prior to preparing the epoxy cartridge. Insert the cartridge into the dispensing gun. Remove the plastic caps and dispense a small amount of material until an even flow of black and white material is achieved. Place the mixing nozzle onto the cartridge then slide the nut over the nozzle and thread the nut onto the cartridge. To achieve maximum flow, break off the tip of the mixing nozzle to the largest diameter that will fit into the hole or screen. No nut is necessary on mixers with built-in nuts. Dispense into a disposable container until a uniform grey is achieved with no streaks.

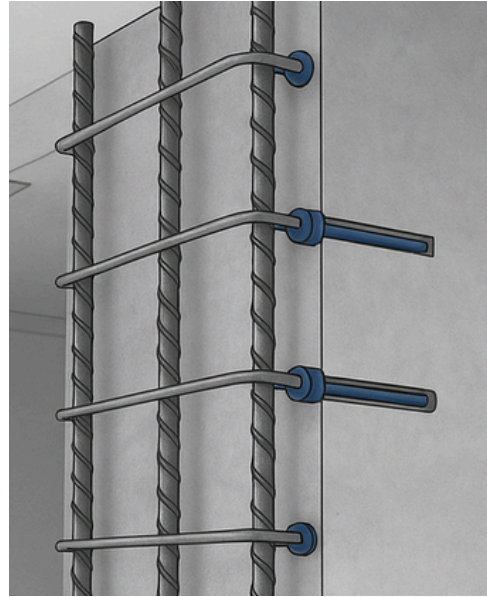
**Into Concrete:** Dispense the material from the bottom of the hole. Fill approximately 5/8 of the hole depth while slowly withdrawing the nozzle. Insert the bolt, or dowel by turning it slowly during insertion. After insertion, the hole should be completely filled with SpecPoxy HSHV and devoid of all air pockets or voids. *Do not disturb or bolt up until cured.*



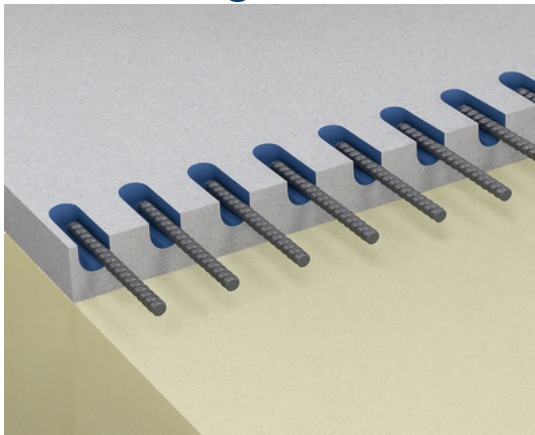
## Base Plate & Column Anchoring



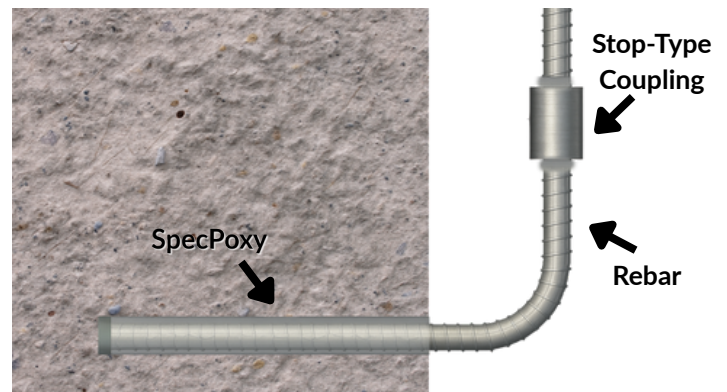
## Rebar Application



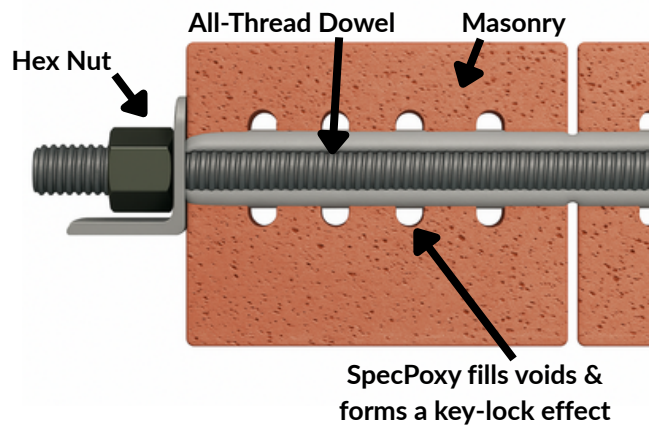
## DOT Doweling



## Rebar Extensions



## Masonry Application





## Typical Cured Properties

Initial Cure	4 Hours
Final Cure	3 days
Compressive Strength (ASTM D695)	14,500 psi
Compressive Modulus (ASTM D695)	505,00 psi
Bond Strength at 2 days (ASTM 882)	2,910 psi
Bond Strength at 14 days (ASTM 882)	3,500 psi
Elongation (ASTM D638)	1.0%
Tensile Strength (ASTM D638)	7,590
Water Absorption (ASTM D570)	< 0.2%
Linear Shrinkage (ASTM C531)	.003%
Heat Deflection (ASTM D648)	155°F



Rebar Foundation Extension

## Pullout Test Results

Test Method	Rod Diameter (in)	Hole Diameter (in)	Depth Embed (in)	Average Peak Load (lbs)	Average Bond Strength	Mode of Failure
Confined Tension	5/8"	3/4"	4"	24,342	3,101	concrete
Confined Damp Hole	5/8"	3/4"	4"	23,251	2,962	concrete
Confined Elevated Temperature	5/8"	3/4"	4"	24,497	3,121	concrete
Confined Horizontal Orientation	5/8"	3/4"	4"	20,744	2,643	concrete
Confined Short Term (24 hrs)	5/8"	3/4"	4"	21,743	2,770	concrete
Unconfined 16x102mm	5/8"	3/4"	4"	18,875	2,404	concrete
Unconfined 16x152mm	5/8"	3/4"	6"	28,788	2,444	concrete
Unconfined 16x152mm	5/8"	3/4"	6"	37,354	2,642	concrete
Unconfined after Creep	3/4"	7/8"	4"	21,722	2,767	concrete



Depiction of Hollow CMU Install w/ Opti-Mesh Screen



Airport Doweling

Per Florida DOT Section 937 Type HSHV Using Grade B7 5/8" threaded rod

## Pullout Test Results

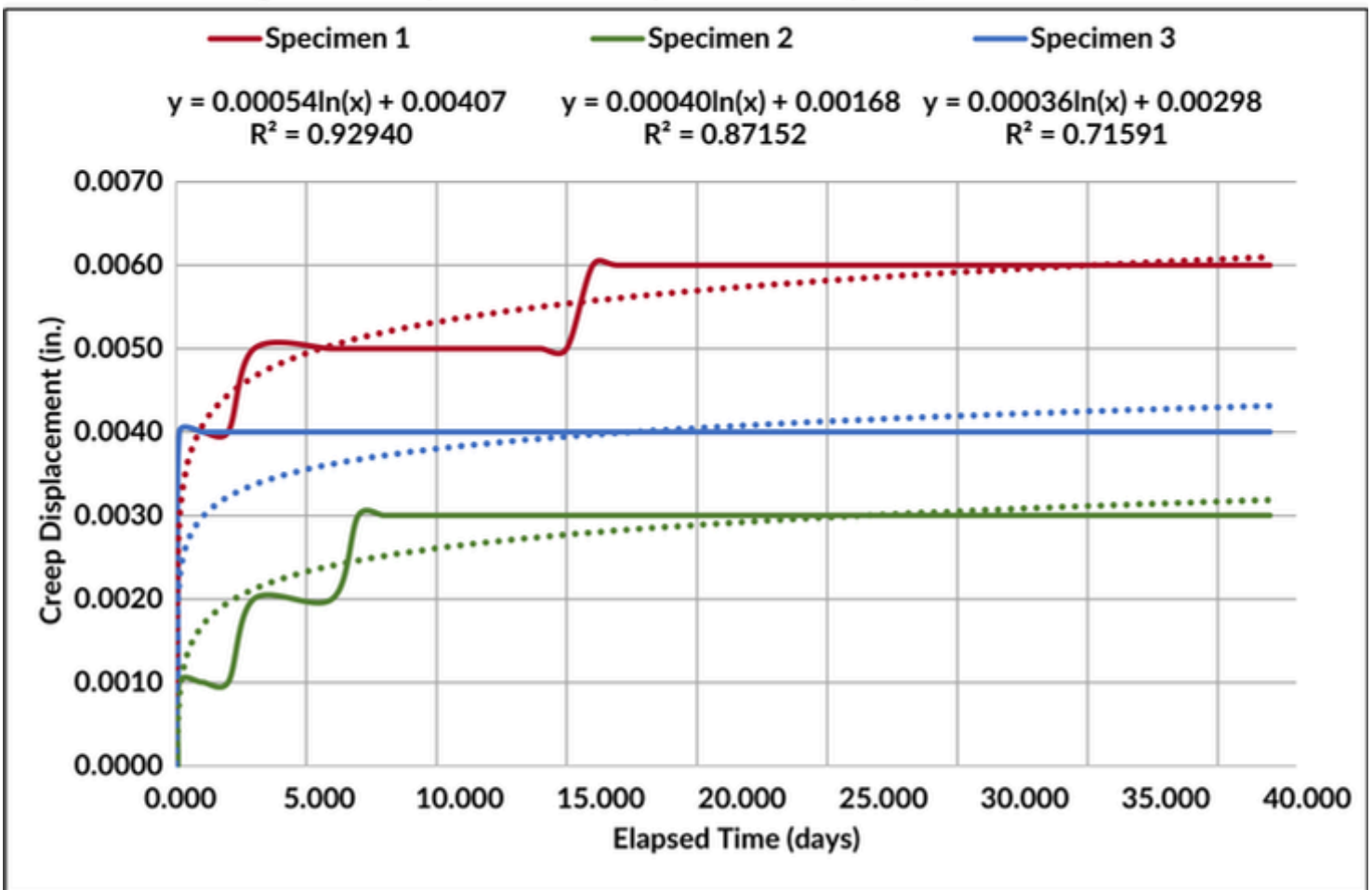
### Results of Direct Tension Pull-Out Testing

Sample ID	Rod Diameter (in)	Hole Diameter (in)	Depth (in)	Peak Load (lbf)	Bond Area (in <sup>2</sup> )	Bond Strength (psi)	Failure Type	Average Peak Load (lbs)	Average Bond Strength (psi)
Confined 7 days	5/8" Grade B7	0.75"	4"	24,474	7.85	3,118	Concrete	24,342	3,101
				25,028	7.85	3,188	Concrete		
				23,683	7.85	3,017	Concrete		
				23,230	7.85	2,959	Concrete		
				25,294	7.85	3,222	Concrete		
Confined Damp Hole 7 days	5/8" Grade B7	0.75"	4"	23,302	7.85	2,968	Concrete	23,251	2,962
				22,949	7.85	2,923	Concrete		
				22,237	7.85	2,833	Concrete		
				22,280	7.85	2,838	Concrete		
				25,489	7.85	3,247	Concrete		
Confined Elevated Temperature 7 days	5/8" Grade B7	0.75"	4"	24,956	7.85	3,179	Concrete	24,497	3,121
				24,165	7.85	3,078	Concrete		
				25,841	7.85	3,292	Concrete		
				24,503	7.85	3,121	Concrete		
				23,021	7.85	2,933	Concrete		
Confined Horizontal 7 days	5/8" Grade B7	0.75"	4"	18,086	7.85	2,304	Concrete	20,744	2,642
				21,992	7.85	2,802	Concrete		
				17,360	7.85	2,211	Concrete		
				21,007	7.85	2,676	Concrete		
				25,273	7.85	3,219	Concrete		
Confirmed Short Term 24 hours	5/8" Grade B7	0.75"	4"	19,395	7.85	2,471	Concrete	21,743	2,770
				20,532	7.85	2,616	Concrete		
				25,129	7.85	3,201	Concrete		
				23,355	7.85	2,997	Concrete		
				20,136	7.85	2,565	Concrete		
Unconfined 16x102 mm 7 days	5/8" Grade B7	0.75"	4"	18,065	7.85	2,301	Concrete	18,875	2,404
				18,841	7.85	2,400	Concrete		
				18,863	7.85	2,403	Concrete		
				19,827	7.85	2,526	Concrete		
				18,777	7.85	2,392	Concrete		
Unconfined 16x152 mm 7 days	5/8" Grade B7	0.75"	6"	28,819	11.78	2,446	Concrete	28,788	2,444
				29,603	11.78	2,513	Concrete		
				29,826	11.78	2,532	Concrete		
				26,913	11.78	2,285	Concrete		
				28,776	11.78	2,443	Concrete		
Unconfined 19x152 mm 7 days	3/4" Grade B7	0.875"	6"	38,243	14.14	2,705	Concrete	37,354	2,642
				35,481	14.14	2,509	Concrete		
				37,862	14.14	2,678	Concrete		
				37,279	14.14	2,636	Concrete		
				37,905	14.14	2,681	Concrete		



**Table 5 – Creep at Elevated Temperature Test Results**

Specimen ID	1	2	3	Average
Threaded Rod Size (in.)	0.625	0.625	0.625	0.625
Hole Diameter (in.)	0.75	0.75	0.75	0.75
Depth (in.)	4.00	4.00	4.00	4.00
Initial Elastic Displacement (in.)	0.0270	0.0420	0.0190	0.0293
Creep Displacement at 1000 hrs (in.)	0.0060	0.0030	0.0040	0.0043
Creep Displacement in last 15 days (in.)	0.0000	0.0000	0.0000	0.0000
600 day Estimated Displacement Due to Creep (in.)	0.0075	0.0042	0.0051	0.0056
600 day Estimated Total Displacement (in.)	0.0345	0.0462	0.0241	0.0350
Unconfined Pull-out Load After 42 days Creep (lbf.)	18,532	19,208	20,021	19,254
Unconfined Pull-out Bond Stress After 42 days Creep (psi)	2,361	2,447	2,550	2,453
Displacement at Peak Load (in.)	0.0490	0.0330	0.0420	0.0413

**Figure 1 – Creep at Elevated Temperature – Creep Displacement vs. Time**


# About SpecChem

At SpecChem, we serve five key concrete markets: commercial, industrial, DOT & infrastructure, residential, and repair & restoration. We are active in nearly every industry trade group related to these key market segments and have a strong team of industry professionals who are focused on building long-term relationships, increasing distributor profitability, continually evolving, developing new products, and providing premium customer service.

SpecChem is an American manufacturer, headquartered in the heartland, supplying the concrete distributor network with high quality, industry-leading concrete construction materials.



## Contact Us



816-968-5600



[www.SpecChem.com](http://www.SpecChem.com)



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Kansas City, MO 64108

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