HIGH STRENGTH ANCHORING EPOXY

DURAL HS GEL

EUCLID CHEMICAL



ANCHORING AND DOWELING VERSATILITY

DURAL HS GEL is a structural epoxy adhesive for anchoring and doweling that can be installed in temperatures from 40°F to 110°F (4°C to 43 °C). DURAL HS GEL has been tested with both threaded rod and rebar in accordance with ASTM E488 and ASTM E1512 and has proven capability to resist static, dynamic, seismic and wind loads in uncracked concrete.

DURAL HS GEL APPLICATIONS AND FEATURES

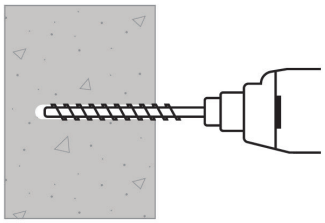
- Anchoring threaded rod, bolts and rebar dowels into uncracked concrete
- Short and long term tensile anchoring; resistant to dynamic wind and seismic forces
- Grouting dowel bars and tie bars
- Bonding agent for fresh to hardened concrete, and hardened to hardened concrete
- ASTM C881 Types I, II, IV, and V, Grade 3, Classes A, B, and C
- Moisture insensitive - can be installed in damp environments
- Withstands freeze-thaw conditions
- Full cure in just 24 hours at 75°F (24°C)
- In service temperature up to 110°F (43°C)
- Packaged in convenient, 1:1 mix ratio 21.2 oz. and 53 oz. cartridges
- Numerous DOT approvals

DURAL HS GEL ENGINEERING PROPERTIES

Property	Result at Conditioning Temperature		
	Class A 38°F (3°C)	Class B 50°F (10°C)	Class C 75°F (24°C)
Consistency, ASTM C 881	< 1/4" (6.4 mm)		
Pot Life, ASTM C 881	13 min		
Gel Time, minutes, ASTM C 881	38	20	14
Bond Strength, psi (MPa) ASTM C 882	2 days: 2,850 (19.7)	2 days: 3,300 (22.8)	2 days: 3,580 (24.7)
	14 days: 2,790 (19.2)	14 days: 4,090 (28.2)	14 days: 3,940 (27.2)
Water Absorption, ASTM D 570	14 days: 0.53%		
Heat Deflection Temperature, ASTM D 648	7 days: 132°F (56°C)		
Linear Shrinkage, ASTM D 2566	0.002		
Compressive Yield, psi (MPa), ASTM D 695	7 days: 10,860 (74.9)	7 days: 10,490 (72.3)	1 day: 11,430 (78.8) 2 days: 11,480 (79.2) 3 days: 11,440 (78.9) 7 days: 11,410 (78.7)
Compressive Modulus, psi (MPa), ASTM D 695	7 days: 209,000 (1,441)	7 days: 211,000 (1,455)	7 days: 244,000 (1,682)

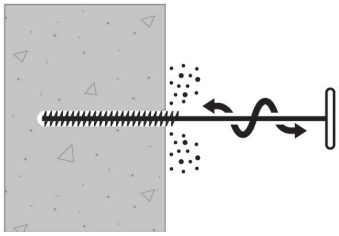
ANCHOR BOLT GROUTING GUIDELINES

The basic steps to properly install anchors using DURAL HS GEL are as follows. For detailed instructions, consult the DURAL HS GEL technical data sheet.



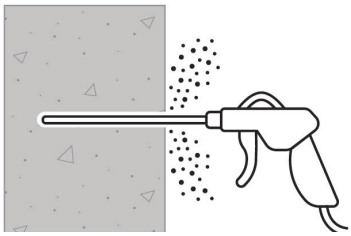
Step 1

Drill a hole the diameter size and depth of embedment required. Typically the diameter of the hole should be no larger than ¼ inch (6 mm) wider than the diameter of the anchor. For good quality concrete the hole depth is generally 10 to 15 times the diameter of the embedded anchor.



Step 2

Scrub the hole with a stiff bristle brush to remove all dust, dirt, debris or any other bond-inhibiting material from the drilling procedure.

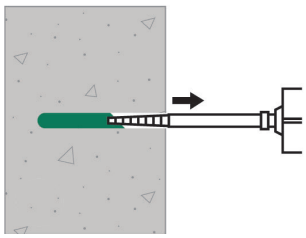


Step 3

Blow the hole clean with oil-free compressed air, brush, and blow it clean again. Holes should be clean and sound.

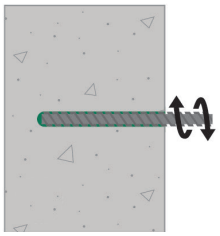
Step 4

Place cartridge in a dual plunger, 1:1 mix ratio dispensing gun and remove end caps from both sides of the cartridge. Attach a static mixer nozzle using the reusable threaded retaining nut. Keep cartridge upright until use. Bleed off any air inside cartridge by slightly squeezing handle. Dispense the resins by working the trigger of the gun. Dispense and discard into a waste container a small amount to start the material mixing (2 to 4 trigger pulls or until uniform mixture is attained). Proceed with application. Do not point mixer upward after material is flowing. To stop dispensing, release pressure by pressing the lever on the gun and pulling back the plungers. When application is complete, remove the used static mixer and dispose of properly. A new static mixer should be used for each cartridge. Bleed off a few drops of material to clear away any mixed product. Clean the threaded area and openings and replace the end caps on the cartridge. Loosely replace the locking nut.



Step 5

Place the nozzle of the static mixer to the back of the hole and slowly withdraw the nozzle as the DURAL HS GEL is dispensed. Fill to approximately ½ the hole depth.



Step 6

Insert the anchor slowly with a twisting motion into the hole forcing it to the bottom until the resin adhesive flows to the top. Twist the anchor to ensure intimate contact and establish bond.