



FIVE STAR

Specified by the World's Best™

Five Star Engineered Products Overview for AK DOT&PF

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Who We Are

- Five Star Products, Inc. was founded in 1955 and remains a privately held USA Company
- Corporate headquarters is located in Shelton, CT
- Five Star® Grouts are manufactured and packaged in six regional facilities throughout the U.S. and by licensees internationally.



Committed to Quality

Ensuring consistency and quality in the production process for all Five Star[®] products.



ISO

9001:2008
CERTIFIED



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Five Star® Engineered Product Overview

- Grouts
 - Cementitious Grouts
 - Epoxy Grouts
- Concrete Repair
- Marine Products
- Centri-Cast Products





Five Star Centri-Cast[®] Trenchless Pipe Repair Mortar

Fast, Robust, and Fully-Engineered

Presented by:

Five Star Products, Inc.



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Five Star Centri-Cast® Pipe Repair Mortar Before and After

Before Centri-Cast®



After Centri-Cast®



Five Star Centri-Cast® Pipe Repair Mortar

DOT Approvals

- Georgia DOT
- North Carolina DOT
- South Carolina DOT
- Florida DOT
- Washington State DOT Pending
- Oregon DOT Pending



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Five Star Centri-Cast® Pipe Repair Mortar

OVERVIEW

- Trenchless pipe repair
- Centrifugally-cast & Spray-applied methods
- For pipes up to 144" diameter
- Eco-friendly
- Cost-effective
- Minimal equipment needs



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Five Star Centri-Cast® Pipe Repair Mortar

PERFECT FOR

- Storm & Drain Systems
 - Drain Pipes
 - Culvert Pipes
 - Storm Drains



Five Star Centri-Cast® Pipe Repair Mortar

Centri-Cast® Complete System

- Pipe Mortar
- HS Pipe Mortar
- Hydrophobic Grout
- Hydrophilic Grout
- Joint Filler
- New products
being developed



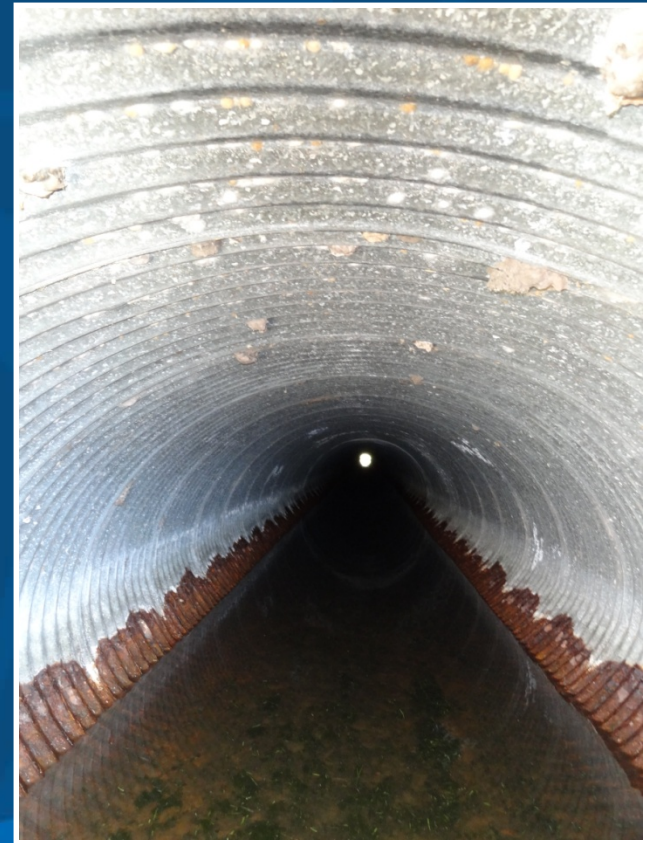
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Benefits of Five Star Centri-Cast®

Trenchless, centrifugally-cast pipe repair means...

- No surface disruptions!
- Save time and money!
- Better utilize existing resources!
- Have confidence in the repair!



Engineered Solution



Requestor _____ Today's Date _____ Project Number _____
 Project Name _____ City _____ State _____
 Client/Company _____ Contact Name _____
 Phone _____ Cell _____ Contact Title _____
 Mailing Address _____

Description of Pipe Installation

Size of Pipe _____ (diameter in inches) Depth of Pipe _____ (feet of cover above invert)
 #Type of Pipe Material; _____ Pipe Shape _____
 Pipe Dimensions (INXIN FOR NON CIR) _____ Wall Thickness/ Corr. depth (in) _____

Shape	Circular	Pipe Arch				Horizontal Ellipse	
		All	CMP (0.5)	CMP (1.0)	CMP (2.0)	RCP	CMP (2.0)
30	42x29	53x41	73x55	51.125x31.313	88x66	45x29	
33	49x33	60x46	76x57	58.500x36.000	97x69	49x32	
36	57x38	66x51	81x59	65.000x40.000	106x72	53x34	
39	64x43	73x55	84x61	73.000x45.000	110x81	60x38	
42	71x47	81x59	87x63	88.000x54.000	115x76	68x43	
45	77x52	87x63	92x65	102.000x62.000	119x84	76x48	
48	83x57	95x67	95x67	115.000x72.000	124x79	83x53	
54		103x71	98x69	122.000x77.250	128x87	91x58	
60		112x75	103x71	138.000x87.125	132x96	98x63	
66		117x79	106x73	154.000x96.875	133x82	106x68	
72		128x83	112x75	168.750x106.500	136x90	113x72	
78		137x87	114x77		140x99	121x77	
84		142x91	117x79		144x107	128x82	
90		150x96	123x81		141x85	136x87	
96		157x101	128x83		145x94	143x92	
102		164x105	131x85		149x102	151x97	
108		171x110	137x87		153x110	166x106	
120			139x89		150x88	180x116	
			142x91		154x97		
			148x93		158x105		
			150x95		162x114		

Bolted (Y/N) _____ Water Table Depth from Surface _____ (Feet) #Length of Pipe (FT) _____
 Pipe Condition (Sound/cracked/fractured/broken) _____
 Condition of Invert _____ Joint Condition _____
 Headwall Condition _____ Other Required Info _____

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Road/Load

Pavement/road type (unpaved; paved/flexible; rigid/CRP/concrete) _____
 Traffic Load: (pick one) None _____, H20 _____, E80 _____, H80 _____ Road function _____

Soil Condition

Cover Depth to top of pipe (ft) _____ Depth to Phreatic Surface(ft) _____
 Embed Soil Type (Granular or non-granular) _____
 Soil Stiffness Category of pipe embedment (SC1, SC2, or SC3) _____

Soil Stiffness Category	Unified Soil Classification Group	AASHTO Soil Group
SC1	Crushed rock: ≤ 15% sand, maximum 25% passing the 3/4-in. sieve	
SC2	Clean, coarse-grained soils: SW, SP, GW, GP, or any soil beginning with one of these symbols with 12% or less passing the 200 sieve	A1, A3
SC3	Coarse-grained soils with fines: GM, GC, SM, SC, or any soil beginning with one of these symbols with more than 12% fines Sandy or gravely fine-grained soils: CL, ML (or CL-ML, CL/ML, ML/CL) with more than 30% retained on the 200 sieve	A-2-4, A-2-5, A-2-6, or A-4 or A-6 soils with more than 30% retained on the 200 sieve

Soil Density (PCF, from owner's as-built drawings) _____
 Future Add'l Earth Loading (proposed additional feet of fill) _____
 Factor of Safety required by Owner (1.6-2:1 typ) _____

Our recommendations for the installation of Five Star Centri-Cast® are merely recommendations and are not a guarantee or warranty of the performance if installed as recommended. These recommendations are provided upon information concerning the site, environmental factors and other factors that have been provided by your or your agents or consultants, which we have not independently investigated or verified. We disclaim any liability based upon the failure of any information provided to be true, accurate and complete, and you agree to indemnify and hold us harmless against any such liability to you or any third party.



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Benefits of Five Star Centri-Cast®

FEATURES

- Full engineering support
- Migrating Corrosion Inhibitors for outstanding corrosion resistance
- Versatile ¼ inch (6 mm) to ½ inch (13 mm) single pass applications
- Continuous Application – No Cold Joints
- Fiber reinforced for crack resistance and strength



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ODOT Project



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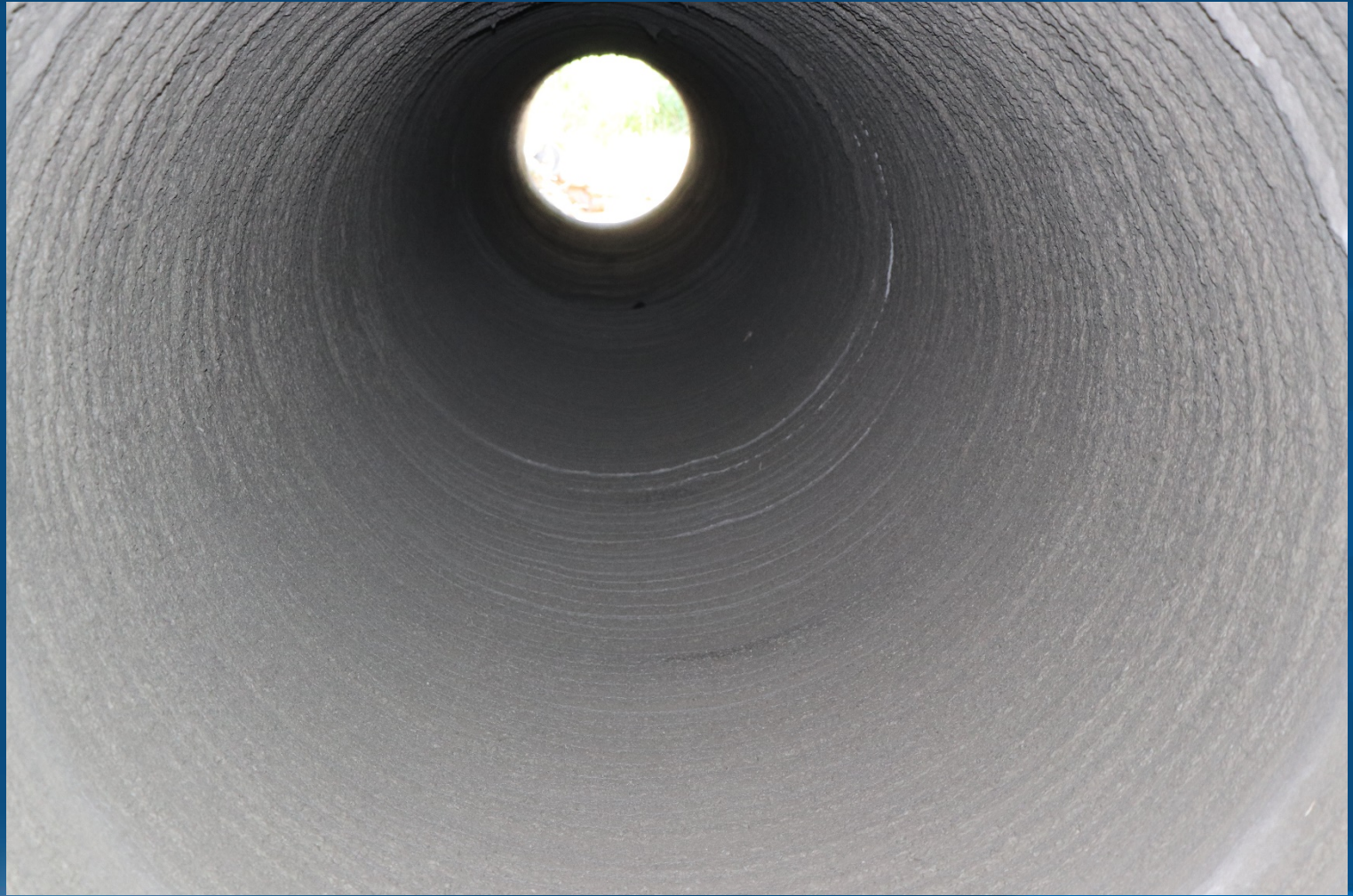


ODOT Project



ODOT Project





ODOT Project



Installing Five Star Centri-Cast®

EASY INSTALLATION

1. Clear debris from pipe
2. Apply product in "passes"
3. Final result



Five Star Centri-Cast® vs. the Competition

Pipe Repair Options

1. Dig & replace
2. Cured in place (epoxy sock)
3. Slip-lining (HDPE pipe)
4. Shotcreting
5. Five Star Centri-Cast®
 - Centrifugally-cast pipe mortar system



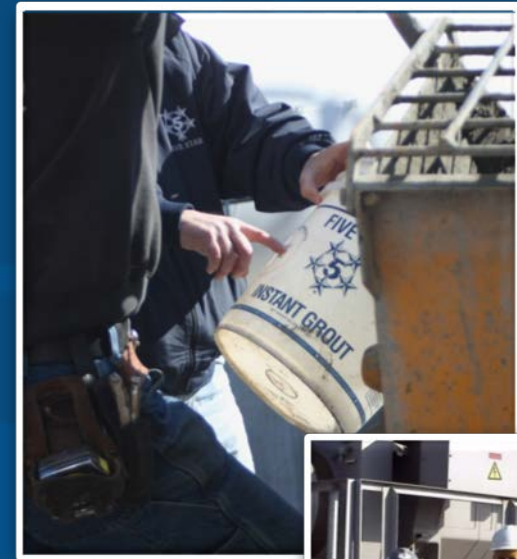
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Technical Support & Customer Service

Contractor/Customer Support

- On-site Expert Service
- On-site Expert Training
- Pre-installation meetings to review actual job site conditions and demands
- On-site installation monitoring



Design-A-Spec™

- Customized specification program with installation details



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Thank you for your time!

For additional info, visit
www.FiveStarProducts.com



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Questions?



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