

The Underground Utilities Event | July 13-15, 2021 | Music City Center | Nashville, TN

## Manhole Rehabilitation

# FROM AN INSPECTOR'S POINT OF VIEW





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## Jerry Weimer

- NASSCO PACP/LACP/MACP Master Trainer
- ITCP Manhole Certified, CIPP Trainer
- NASSCO Technical Advisor
- 35 years Sewer Maintenance Experience



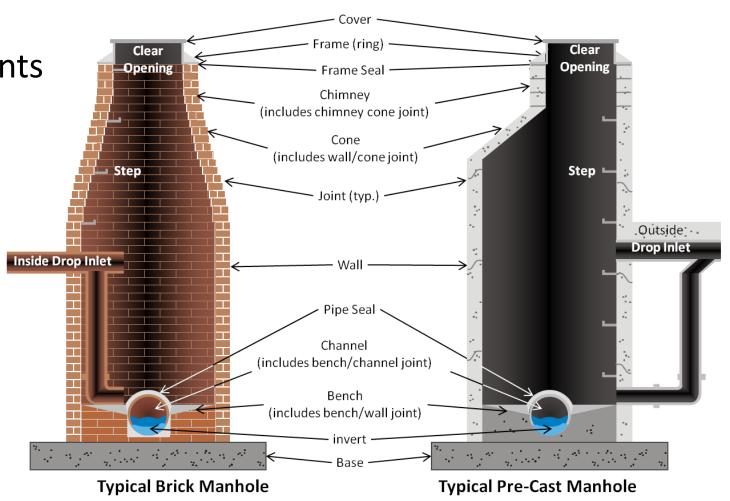




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## Agenda

- Introduction and Documents
- Preparation
- Application/Installation
- Testing
- Acceptance
- Warranty Inspection







## Introduction and Documents

- Hi, I am Jerry Weimer and I will be your ITCP Certified Inspector
- I am here to work with you to confirm that the rehabilitation products are installed or applied properly and tested in accordance with the contract requirements
- I would like to see a copy of the manufacturers specifications and the technical data sheets for the products you are using. I need to verify:
  - Product names
  - Physical properties
  - Mixing procedures
  - Application methods
  - Product limitations
  - Preparation requirements
  - I would also like to speak with you about your safety protocols, PPE and get a copy od your safety data sheets.



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## Introduction and Documents

Will you be doing any bypass pumping?

Safety

I would also like to speak with you about your safety protocols, traffic control plan, confined space entry permit, PPE and get a copy od your safety data sheets.





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# Preparation

- What preparation is needed for this product?
  - Infiltration Control
  - Cleaning
  - Profile and Compatibility







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# Preparation

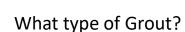


Do we have infiltration to stop? If so, how will you be stopping the water.



Will you be using chemical









What is the Gel Time?







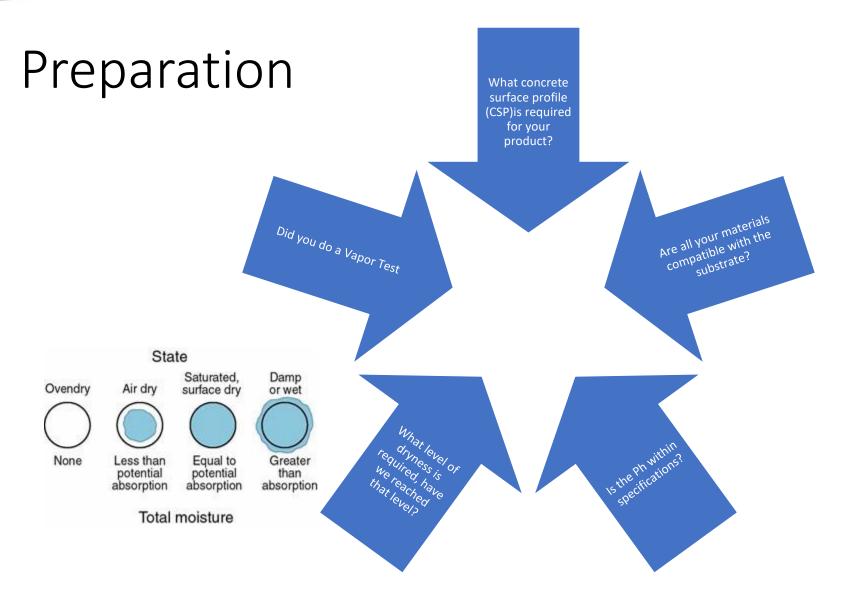
# Preparation

- How are you cleaning the surface of dirt and loose debris?
- What equipment do you have for preparing the surface?
- Are you using detergents and hot water for grease?
- Do you need to etch the surface or just water blast?





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# Application/Installation

How are you installing the coating, spraying, spinning or trowel

application?

How thick of a coating is needed?

Will you be doing multiple coats or one coat?

Press gauge into wet coating. Withdraw vertically and note deepest tooth having paint on it and the next higher tooth that is not coated with paint. The true wet film thickness lies between these two readings. Clean gauge in suitable solvent after each use.

1 TO 80 MIL SCALE 60 70 65 60 55 50 45 40 35

Will you check the thickness with the Wet Film Thickness Gauge or should I check the thickness myself?





# Testing

- Let me test the application, do you have a Spark Tester?
- I will be circling all of the pinholes for you to repair.
- Do you have the equipment for the testing?
- I will be documenting the results of the tests.





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# Testing

For the Cement, I will be testing the compressive strength. Will you be providing a cube or cylinder sample?





I will be documenting the results of the tests.











# Testing

I will be doing some core testing and ultrasonic testing to check for thickness.

Do you have the equipment for the testing?

I will be documenting the results of the tests.





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# Testing

- I will be testing your first two manholes for adhesion using a pull off tester.?
- Do you have the equipment for the testing?
- I will be documenting the results of the tests





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## Acceptance

SAMPLE INSPECTOR REPORT FORM										
MANHOLE REHABILITATION										
									ion:	
Street/RW										
Contracto	Contractor: Applicator: Inspector									
Report No: Weather: Temp: Inspector Instruction: Inspector Executes all Quality Assurance and Testing requirements for the application of Polyurethane Linings										
МН					Perform	Accept				Comm
Number				Quality	ance	able	Quality	Inspection		ents
	B R	CON	O T H	Control Specified	Standar d	Qualit y	Assurance Measured	Pass	F ai I	
LKJ888		x		Material	Spec		Material as specified	x		
				Structure			Inspected through MH			
				preparation Material	spec		entry	x	-	
				Component			Mix ratio as submitted			
				Mix ratio	Spec		and verified	x		
				Adhesion Test	ASTM/S		Adhesion points selected and test witnessed	×		
				Adiiosion 10st	ASTM/S		Spark test performed. No			
				Holiday Test	pec		defects identified	×		
				Visual Inspection	Spec		Inspected through MH entry. No defects identified	x		
				mspection	Spec		luenuneu	^		
_	_									Date:
Owners Representative: Signature: D										
Contracto	rs	Representative:					_Signature:		_	Date:
Comments:										



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## Warranty Inspection

You have provided me a warranty certificate. I will be inspecting the manhole 6 months before the warranty expiration.

We will be using the agreed upon repair methods outlined in the specifications.



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