



SOURCE ONE[®]

ENVIRONMENTAL

OUR COMPANY

- Corporate Headquarters located in Davison, MI
- Family owned business with over 50 years industry experience
- Focus on value based, environmentally safe products for the infrastructure rehabilitation and water management industries
- Designed for municipalities and contractors to use themselves
- Low investment, permanent repair solutions



PRESENTATION OVERVIEW



- No-Dig Point Repair System – Installation procedures and equipment overview

- Case Study – South Placer Municipal Utility District - California

ipePatch[®]

NO DIG Pipe Repair *by Source One Environmental*



The Premier No Dig Pipe Repair System.



- Pipe Patch is the latest development in High performance NO DIG pipe repair solutions.
- PipePatch provides a quick and easy to use method for the permanent repair of sewer pipes.
- The PipePatch system is installed internally and eliminates the need for excavation.



TECHNICAL DATA

- Odorless and ideal for working in confined spaces
- Outstanding bonding properties to most materials
- Resistance to 63 + chemicals and oils
- Non-flammable, making it ideal for hotels, airports, hospitals, etc.
- Non-hazardous, so no transport or disposal problems
- Resin cures in the presence of water
- Structural properties exceed the minimum requirements of ASTM F 1216 (Standard for CIPP) by 12 times!



APPLICATION ADVANTAGES

- Available in 2" to 24" kits
- 24" and 48" kit lengths
- Flow-Thru Packers prevent backups during repairs and eliminates the need to by-pass pump sewers
- No more costly, disruptive and time consuming excavations
- No more road closures or traffic backups during repairs
- Only standard sewer cleaning and inspection equipment required
- Small repair crews – as few as 3 people
- Short repair times – several can be installed in one day
- Durable 50 year repair life
- Field tested for over 20 years



PIPE PATCH TOOLS

➤ PipePatch Packers

- 2" Packer
- 3" Packer
- 4" Packer
- 6" Packer
- 6-10" Flow-Thru Packer
- 12"-16" Flow-Thru Packer
- 18-24" Flow-Thru Packer

➤ PipePatch Pushrods

- 5 ft length
- Quick disconnects

➤ PipePatch Air Hose

- 300' "Kink-Free" Air Hose on wheeled cart

➤ Flex adapter

- Gives packer to pushrod connection extra flexibility
- Quick disconnects

➤ Air Regulator

- Safety blow off valve set at 35 psi
- Features gauge for air pressure monitoring
- Quick disconnects

➤ Pull Cable(s)

- Galvanized-Steel braided
- Plastic coated
- 250' length with spool
- 500' length with spool



48" Packers



300' Hose Reel

KIT COMPONENTS

- 1-Fiberglass Mat
- 1- Pouch Resin/Hardner
- 2- Packer Protection Sleeve
- 1- Spreading Spatula
- 1- Work Surface
- 2- Pair Disposable Gloves
- 3 (6)- Nylon Zip Ties
- 1- Roll Electrician's Tape
1.5" wide x 66'
- ❖ **Kit contents depend on kit size**

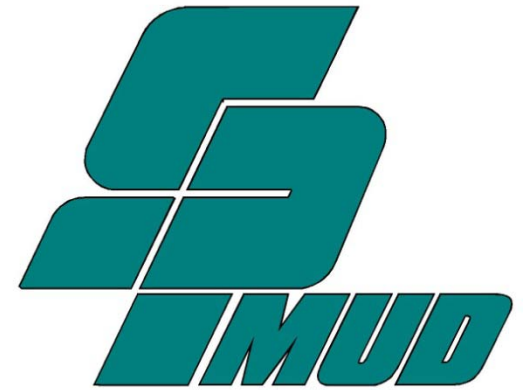


SILICATE RESIN

- PipePatch Silicate Resin is unlike any other in the industry
- Strong adhesive properties
- Completely inert and non-toxic once mixed
 - **NO VOC's**
 - **NO STYRENES**
- Unique mixing technique (a full and complete mix is physically identified)
- Resin does not reach dangerously high temperatures during cure
 - Epoxies can harm installer and jeopardize equipment due to the high degree of temperature during cure



SOUTH PLACER MUNICIPAL UTILITY DISTRICT



Established 1956



SOUTH PLACER MUNICIPAL UTILITY DISTRICT

- 23 Employees
 - 5 - Administrative
 - 5 - Technical Services
 - 13 - Operations & Maintenance
- 245 Miles of Pipe
- 5,600 Manholes
- 20,000 Service Laterals – Approximately 135 miles
- 9 Lift Stations



CAN WE DO THIS?

- Set Up Demo With Manufacturer (Source 1)
 - Invited neighboring agencies
 - Had our guys there to see for themselves
- Our guys performed the work under Mfr's guidance that day
 - Two were certified that day.



DO WE HAVE A NEED?

- Needs assessment.
 - Looked at what can be repaired by this method
 - Cracked Pipe
 - Root Intrusion
 - Infiltration



DO WE HAVE A NEED?

District Records Revealed...

- **71** Known Cracked Pipe Defects Designated for Repair
- **219** Known Roots/Joint Defects Designated for Repair
- **72** Known Infiltration Defects Designated for Repair

362

Defects that Could be repaired by this method



DO WE HAVE A NEED?

- 78% of System is Small Diameter Pipe - 6" and 8"
- 80% (+/-) is VCP



EVALUATED CONTRACTED SERVICES

- Looked at Costs of past Contracted CIPP Point Repair.
 - 6" & 8" Diameter pipe. Liner Length 7'. Low Flow Lines
 - \$2,500 to \$3,600 per patch.

- Evaluated Inspection and Contract Administration Time
 - Developing the Contract/Bid Documents
 - The Bid Process
 - One to Three months from Invitation to Bid to Award of Contract
 - Inspection Time, Payment Processing, Warranty Review, etc...



WILL IT FIT INTO OUR WORK PLAN MODEL?

- Can we work it into our schedule?
 - Added it into our Work Plan Model and ran the numbers

WORK PLAN MODEL

	A	B	C	D	E	F	G	H	I		
	Program/Task	Cod	Code Description	Crew Siz	Days/Yea	Assumptions	Calculations	Hr/	Leader		
1											
2											
3	PLCO Program	U180	PLCO Installation	2	84	2 men @ 4 Mo./yr	2 men x 8 hr/day x 84 days/yr =	1344	Joe		
4		U185	PLCO Locate/Repair								
5											
6	Lift Station Program	U260	Lift Station Maint (Wkly Chks)	1	~	1 Man @ 2 hrs/Wk	1 man x 2 hr/wk x 52 wks/yr =	104	Gary/Rod		
7				2	~	2 men @ 1 day/mo	2 men x 8 hrs/day x 12 mo/yr =	192	Frank		
8		U265	Lift Station Repair	3	~	3 men @ 1/2 day/mo	3 men x 4 hrs/day x 12 days/yr =	144	Joe		
9			** Boyington Rehab	4	~	4 men @ 2 weeks	4 men x 8 hrs/day x 10 days	320	Joe		
10											
11	Utility Locations	U340	Utility Locations	1	250	1 man @ 3 hrs/day	1 man x 3 hrs/day x 250 days/yr =	750	Sam		
12											
13	Pipe Repair Program	U160	ML - Pipe Repair	3	84	3 Men @ 6 Mo./Yr	3 men x 8 hrs/day x 84 days/yr =	2016	Joe		
14		U165	SL - Pipe Repair								
15											
16	ML - Maintenance Program	U100	ML - Flushing	5	144	2 men @ 14 days/mo	2 men x 8 hrs/day x 168 days/yr =	2688	Frank		
17		U120	ML - TV Work			3 men @ 12 days/mo	3 men x 8 hrs/day x 144 days/yr =	3456			
18		U200	ML - Rodding	...no time has been factored in for this task							
19											
20	SL - Maintenance Program	U125	SL - TV Work	2	24	2 men @ 2 days/mo	2 men x 8 hrs/day x 24 days/yr =	384	Frank		
21		U205	SL - Rodding								
22											
23	Pipe Patch Program	U170	ML - Pipe Patch Program	4	30	4 men @ 1 wk/mo @ 6 mo/yr	4 men x 8 hrs/day x 30 days/year	960	Frank		
24											
25	Manhole Program	U240	Manhole Rehabilitation	3	12	3 men @ 1 day/mo	3 men x 8 hrs/day x 12 days/yr	288	Frank		
26		U245	Manhole Inspection ***	2	12	2 men @ 1 day/mo	2 men x 8 hrs/day x 12 days/year	192	All		
27		U250	Manhole Install	Typically, manhole installs are few and far between. For this purpose, no time has been allocated for this task.							
28			*** in addition, manhole inspections are performed by TV and Flushing crews.								
29											
30	Chemical Root Treatment	U210	Chemical Root Treatment	1	5	1 man @ 1 wk/yr	1 man x 8 hrs/day x 5 days/yr	40	Gary/Rod		
31											
32	Double Wye Program	U905	Double Wye Program	5	84	5 men @ 6 mo/yr	5 men x 8 hrs/day x 125 days/yr	3360	Joe		
33			** Preliminary work for Ph. 2	2	42	2 men @ 2 mo/year	2 men x 8 hrs/day x 42 days/year	672	Joe		
34											
35	Corp Yard Maintenance	U985	Corp Yard Maintenance	3	24	3 men @ 2 days/mo	3 men x 8 hrs/day x 24 days/yr	576	All		

WORK PLAN MODEL

	A	B	C	D
1	Program/Task	Cod	Code Description	Crew Siz
2				
3	PLCO Program	U180	PLCO Installation	2
4		U185	PLCO Locate/Repair	
5				
6	Lift Station Program	U260	Lift Station Maint (Wkly Chks)	1
7				2
8		U265	Lift Station Repair	3
9			** Boyington Rehab	4
10				
11	Utility Locations	U340	Utility Locations	1
12				
13	Pipe Repair Program	U160	ML - Pipe Repair	3
14		U165	SL - Pipe Repair	
15				
16	ML - Maintenance Program	U100	ML - Flushing	5
17		U120	ML - TV Work	
18		U200	ML - Rodding	..no time has b
19				
20	SL - Maintenance Program	U125	SL - TV Work	2
21		U205	SL - Rodding	



WORK PLAN MODEL

Assumptions	Calculations	Hr/yr	Leader
2 men @ 4 Mo./yr	$2 \text{ men} \times 8 \text{ hr/day} \times 84 \text{ days/yr} =$	1344	Joe
1 Man @ 2 hrs/Wk	$1 \text{ man} \times 2 \text{ hr/wk} \times 52 \text{ wks/yr} =$	104	Gary/Rod
2 men @ 1 day/mo	$2 \text{ men} \times 8 \text{ hrs/day} \times 12 \text{ mo/yr} =$	192	Frank
3 men @ 1/2 day/mo	$3 \text{ men} \times 4 \text{ hrs/day} \times 12 \text{ days/yr} =$	144	Joe
4 men @ 2 weeks	$4 \text{ men} \times 8 \text{ hrs/day} \times 10 \text{ days} =$	320	Joe
1 man @ 3 hrs/day	$1 \text{ man} \times 3 \text{ hrs/day} \times 250 \text{ days/Yr} =$	750	Sam
3 Men @ 6 Mo./Yr	$3 \text{ men} \times 8 \text{ hrs/day} \times 84 \text{ days/yr} =$	2016	Joe
2 men @ 14 days/mo	$2 \text{ men} \times 8 \text{ hrs/day} \times 168 \text{ days/yr} =$	2688	Frank
3 men @ 12 days/mo	$3 \text{ men} \times 8 \text{ hrs/day} \times 144 \text{ days/yr} =$	3456	
for this task			
2 men @ 2 days/mo	$2 \text{ men} \times 8 \text{ hrs/day} \times 24 \text{ days/yr} =$	384	Frank





WILL IT FIT INTO OUR WORK PLAN?

Estimated that we could do...

50 Point Repairs/year.

- Roughly figured as follows:
 - 2/day; 4 days/week; 6 weeks / year = 48

EXISTING EQUIPMENT



INITIAL INVESTMENT

Flow Through Packer
(6" to 10")



\$2,640

INITIAL INVESTMENT

Reel/Cart
(x3)



\$2,700

INITIAL INVESTMENT

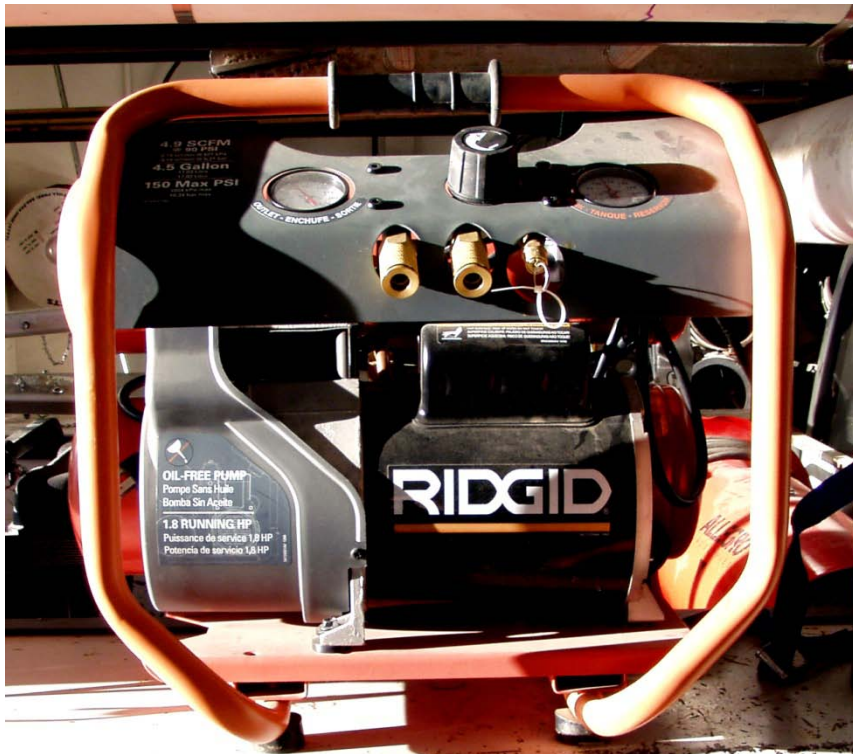


Air Regulator

\$144

INITIAL INVESTMENT

Air Compressor



\$200

INITIAL INVESTMENT



27 Repair Kits
(6" & 8")

\$15,420



INITIAL INVESTMENT

Incidentals

\$80.00

INITIAL INVESTMENT

- Total

Equipment and material cost

\$21,184



COST EFFECTIVE?

Comparison to Excavation

- Force Account Contractor (T & M)
 - Average Cost of One Excavated Repair w/o paving Costs
 - \$3500
- Our Own Forces
 - Average Cost of One Excavated Repair w/o paving Costs
 - Using Loaded Overhead Rates
 - \$2400



COST EFFECTIVE?

\$21,184 / 27 Repairs

\$785

per Repair

(for Materials & Equipment)

CITY OF FLINT, MI

“I’ve done a cost analysis of doing a PipePatch® versus a dig and replace. Fully loaded cost to do a PipePatch of my labor (union) of four people, Jetter/Vactor Truck, Camera Truck, fuel, and the cost of an eight-inch four footer is \$1,100. The bare minimum I can repair a shallow line is \$5,500. This includes my time & materials plus an asphalt contractor. Using PipePatch, I can do a repair in three hours versus an open cut of two to three days.”

**Rob Smith – Sewer Foreman
City of Flint, MI*

CITY OF TOLEDO, OH

“I am writing in regards to one of the most innovative products the City of Toledo’s Division of Sewer and Drainage Services has used in some time, Source One Cured in Place Point Repair Trenchless Technology. Since the initial demonstration we have committed to developing a Trenchless Pipe Patch Repair Program. Sewer and Drainage Services purchased a specially equipped vehicle, packers, kits, and we’ve trained a deployment team to make the most of the trenchless repair process. This technology saves time and money, and gives the City of Toledo, Division of Sewer and Drainage Services the ability to work smarter not harder.”

-Kelly Debruyne

Sewer and Drainage Commissioner

BUTLER COUNTY, OH

“We at Butler County Water & Sewer have been using the Pipe Patch product since 2008. The product has become a valuable tool for infiltration reduction and repairing damaged/defective pipe using trench-less technology. The cost savings alone in restoration is incredible not to mention the expediency of the repair..... We were able to patch a 12” sanitary sewer main that became positioned under a pond that was expanded, without our prior knowledge, and damaged during this expansion. The repair was made with one 12” X 48” spot-liner with Mike Moore on hand for installation training. A flow tote was placed downstream prior to repair. From the reading taken before and after an estimated 24,000 gallons per day average was removed from our sanitary sewer main.”

Warren Barnes – Butler County

CASE STUDY #1
BUTLER COUNTY, OH

Desktop/Presentations

CASE STUDY #3

TOLEDO, OH



C O N N

CASE STUDY #3

BOULDER CITY, NV



CASE STUDY #4

“THE SLEDGEHAMMER TEST”

