

REHAB TECHNOLOGY SELECTION GUIDE

CURED-IN-PLACE-PIPE (CIPP)

Company	Product/Type	Mainline, Lateral Sectional	Inversion/Cure Process	Pull In Diameter Range (in)	Inversion Diameter Range (in)
Applied Felts	Felt and fiberglass-reinforced liners	mainline, laterals, sectional	steam, hot water, ambient	4-120	4-120
	Calibration Tubes	mainline, lateral	steam, water, UV, ambient	4-36	4-36
	EnviroCure Styrene Impermeable Liner	mainline	steam, water, UV, ambient	4-120	4-120
C.I.P.P. Corp.	Felt Liner	lateral	steam, water cure	4-108	4-108
Emagineered Solutions, Inc.	The Shooter CIPP	mainline	air/water inversion; steam, hot water, LED/UV		4-24
Flow-Liner Systems	CIPP System	mainline, lateral, sectional	air/steam, ambient		2-12
	Liners	mainline, lateral, sectional	air/steam, ambient		2-12
	Resins	mainline, lateral, sectional	air/steam, ambient		2-12
Granite Inliner	CIPP	mainline	steam, water, uv cure	4-120	4-120
HammerHead Trenchless	HELIAM Scrim Liner	lateral	bluelight LED, water, ambient	3-6	3-6
	HELIAM Transitional Scrim Liner	lateral	bluelight LED, water, ambient	4-6	4-6
	HH LED Liner	lateral	bluelight LED	6-10	6-10
	HH Flex LED Liner	lateral	bluelight LED	3-6	3-6
	HH Flex Liner	lateral	steam, water, ambient	4-8	4-8
	Wovo/Brawoliner	lateral	steam, water, ambient	2-8	2-8
	Wovo/Brawoliner	3D lateral	steam, water, ambient	3-8	3-8
	RS CityLiner	mainline	steam, water, ambient	6-48	6-48
	RS Blueline	mainline	steam, water, ambient	6-48	6-48
	RS CityMain	mainline	steam, water, ambient	6-48	6-48
Infrastructure Repair Systems	Point Repair	sectional		3-100	
	Invert-a-Pipe	mainline	steam & water	n/a	6-120
Inland Pipe Rehabilitation (IPR)	Invert-a-Pipe	mainline	steam & water	n/a	6-120
InnerCure Technologies	Coated & uncoated fiberglass calibration tubes	mainline, laterals, connections, sectional	steam, hot water, UV, ambient	3-18	3-24
Insituform Technologies	CIPP	lateral, mainline	air, water inversion steam, water cure	4-108	4-108
Interplastic Corporation	CIPP resin	mainline, lateral, sectional	steam, water, ambient, UV	4-120	4-120
LMK Technologies	Lap Liner	main, lateral	ambient		4-24
	T-Liner	main, lateral	air/steam, ambient		6-36
	Shorty	main, lateral	air/steam, ambient		6-24
	Stubby	main, lateral	air/ambient		6-36
	Performance Liner Lateral Liner	lateral	air/steam, ambient		2-8
	Push-In-Place Spot Repair	lateral	air/steam, ambient		4 & 6
	Invert-In-Place Spot Repair	lateral	air/steam, ambient		4 & 6
	Performance Liner Sectional Inversion	sectional	air/steam, ambient		6-42
Liner Products	Felt Liner	lateral, mainline	air, water inversion, steam, water cure	4-120	4-120
Masterliner	CIPP	mainline, lateral, sectional	steam, water, air cure	up to 75	up to 75
MaxLiner USA	CIPP	lateral, vertical	steam, hot water, ambient	2-10	2-10
Manufactured Technologies Corp.	Felt liner		air, water, inversion, steam cure	6-96	6-96
National Liner	CIPP		air, water inversion water, steam cure	4-108	4-108
NuFlow	NuDrain Precision Push/Pull in Place	lateral, sectional	ambient, steam, hot water	1.5-12; custom to 96	
	NuCure Cold Cure UV (CCUV)	lateral, sectional	UV/LED	3-6	
	NuTube I(nversion)	mainline, lateral	ambient, steam, hot water		2-12
PALTEM	Super-HL	mainline	inversion/steam or ambient		8 - 40
Perma-Liner Industries	Perma-Liner Inversion	lateral	inversion		2-8
	Perma-Lateral Pull-in	lateral		2-8	
	Perma-Patch Lateral Spot	lateral	spot	4	8
	Perma-Main Continuous Lining	mainline			6-36
	Mainline Spot Repair	mainline		6-24	
Premier-Pipe USA	Felt Liner	lateral			4-108
PrimeLine Products	PrimeLiner	mainline, lateral, sectional	steam hot water, ambient	3-6	2-120
		point repair	ambient	2-36	
Reline America	UV GRP CIPP	mainline	UV-cured	6-72	6-72

WET-OUT SERVICES

Company	Resin Type	Liner Type	Mainline/Lateral	Diameter Range (in.)
Ferratex Solutions	polyester/vinylester	felt/fiberglass reinforcement	both	6-84

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SPRAYED-IN-PLACE-PIPE (SIPP)				
Company	Product	Pipe Diameter (in)	Type Pipe	Insitu/New Pipe
APM Permaform	Permacast PL-8000 (centrifugally-cast-concrete)	30-120	metal, concrete, clay, brick culverts, sewer pipe	insitu
Epoxytec	CPP Sprayliner	32+	metal, concrete, clay, brick culverts, sewer pipe	insitu
GeoTree Solutions	GeoSpray/GeoSpray HCE/GeoSpray 61 Geopolymer Mortars	30+	CMP, concrete, brick, stone, storm, sewer, box	fully structural - insitu pipe-in-pipe
Granite Inliner	GeoKrete	36+	all	fully structural pipe-in-pipe
Inland Pipe Rehabilitation (IPR)	EcoCast	36+	all	insitu
Madewell Products	Mainstay ML-72-HP	24+	concrete, metal, storm, brick, clay	insitu
Quadex LLC	Quadex Lining System	30+	CMP, concrete, brick, stone	fully structural pipe- in-pipe
Sauereisen	SewerGard 210	48+	concrete, brick, metal	
SewperCoat by Imerys	SewperCoat PG-Wet Gunning	24+	concrete, brick, sewer, storm, clay, culverts, metal	insitu
	SewperCoat 2000HS-Dry Gunning	36+	concrete, brick, sewer, storm, clay, culverts, metal	insitu
SippTech	Manufactured-in-place Composite Pipe (MICP)	48-60	all	insitu AWWA Class IV
Sprayroq	SprayWall	36+	concrete, metal, culverts, storm drains, DOT, clay	fully structural pipe-in-pipe
The Strong Co.	Storm Seal	30-120	brick, sewer, stormwater, metal, concrete, clay, brick	fully structural pipe-in-pipe
Warren Environmental	301 & 501 epoxy series	4+	all	structural insitu

GROUT-IN-PLACE-PIPE		
Company	Product	Diameter Range (in)
Danby	Panel Lok	36+
National Liner	3 - S	36+
PALTEM	Flow Ring	32+

SPIRAL WOUND TECHNOLOGY		
Company	Product	Diameter Range (in)
Danby	Panel Lok	36+
ISCO Industries Inc.	Spirolite	up to 120
Sekisui SPR Americas	SPR EX	8 - 42
	SPR TF	36 - 80
	SPR TM	32 - 217

LIGHT CURED-IN-PLACE-PIPE (CIPP)			
Company	Product	Type	Diameter Range (in.)
C.I.P.P.	BKP Berolina	UV	up to 56
Granite Inliner	Inliner STX	UV	6-48
HammerHead Trenchless	BlueLight LED	LED	2-18
InnerCure Technologies Inc.	Coated & uncoated fiberglass	UV/LED	3-24
Insituform Technologies	iPlus Infusion	UV	6-15
Interplastic Corporation	UV Co-Rezyn-CIPP	UV	6-48
LightRay	LIR3	UV	3-6
Manufactured Technologies Corporation	iPlus Infusion	UV	6-15
MaxLiner USA	MaxLight	LED	4-10
NuFlow	NuCure Cold UV (CCUV)	UV/LED	3-6
	NuCure CCUV Large-Diameter Point Repair	UV/LED	8-12
	NuCure CCUV 2"	UV/LED	1-3
Pipeline Renewal Technologies	SpeedyLight+	UV LED	4-12
	LEDRIg	UV LED	6-24
PrimeLine Products	PrimeLiner	UV	3-15
Reline America	Alphaliner	UV	6-60
SAERTEX multiCom	LINER Pressure	UV	8 - 48*
	LINER Premium	UV	6 - 63*
	LINER Type S+	UV	6 - 63*
	LINER Premium Type S+	UV	6 - 63*
	LINER H2O	UV	8 - 40*
*Pull-in Diameter Range			

FOLDED PIPE				
Company	Product	Pipe Type	Diameter Range (in)	Pre-Heating
IPEX USA LLC	Liner	PVC	6-30	Yes
Miller Pipeline	EX Method	PVC	6-12	Yes
United Pipeline Systems	Tite Liner	HDPE	4-48	No

SLIPLINING				
Company	Product	Diameter (in)	Pipe Material	Available Lengths
Advanced Drainage Systems (ADS)	N-12 HDPE	4-60	high density polyethylene	13', 20'
	SaniTite HP	12-60	polypropylene	13', 20'
	HP Storm	12-60	polypropylene	13', 20'
Contech Engineered Systems	A2 Liner	12-36	PVC resin (12454)	10', 20'
	DuroMaxx	30-120	Steel Reinforced Polyethylene	14', 24'
	ULTRA FLO	18-120	ALT2 Corrugated Steel Pipe Polymer-Coated Steel Corrugated Pipe	10' - 40'
	HEL-COR	6-144	ALT2 Corrugated Steel Pipe Polymer-Coated Steel Corrugated Pipe	10' - 40'
	CORLIX	6-120	Aluminum	10' - 40'
	ALSP	5' - 40'	Aluminum Structural Plate	4.5' plate lengths
	Tunnel Liner Plate	4' - 15'	Steel or Aluminum	18" plate lengths
	CC-FRP	18-126	centrifugally cast, fiberglass-reinforced polymer mortar	20' standard, shorter available
	Snap-Tite	6-63	HDPE	2'-50'
	FFRP (flexible fiber-reinforced pipe)	6-20	PE/Kevlar	up to 8,200' in one shot
Thompson Pipe Group	FRPM Non-round FRPM	12-156	filament-wound, fiberglass-reinforced polymer mortar	10'-40'
Underground Solutions Inc.	Fusible PVC Pipe	4-36	PVC	20', 30', 40'
United Pipeline Systems	Tite Liner	4-54+	HDPE	1,000'

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GROUT			
Company	Product	Viscosity	Application
Avanti Intl.	AV-100® Chemical Grout (acrylamide)*	1–2 cP @ 72°F (22°C) in solution	Chemically activated grout designed to stop water infiltration and stabilize soils in mainlines, laterals, manholes, and various other underground structures: <ul style="list-style-type: none"> • 50+ years of successful, documented use • 25-50+ year service life • Ultra low viscosity (like water) • Available as granular or liquid forms • Half-life of 362 years at 20% concentration determined by DOE
	AV-202® Multigrout Series	LV–650-800 cP Standard*–3,200-6,000 cP NTP–3,200-6,000 cP	Single-component grout designed to seal active water leaks in large cracks or joints in concrete structures and is often used in conjunction with Oakum: <ul style="list-style-type: none"> • Applications where high viscosity chemistry is required • Manhole sealing and pipe penetrations • Excellent choice for moving cracks and joints • EGP technique with Oakum
	AV-275 Soilgrout* with AV-276	30-55 cP	Two-component grout that reacts quickly with moisture to bind together and water-proof loose granular soils: <ul style="list-style-type: none"> • Fills voids on the exterior of below-grade structures • Stops high flows in below-grade structures • Stabilizes soil to prevent soil erosion, sink holes, sinking foundations
	AV-290 Fast-Set	Part A: 200 cP Part B: 600 cP	Dual-component hydrophobic grout that rapidly fills large voids on exterior of below-grade structures, where high-water flow is present. No water necessary: <ul style="list-style-type: none"> • Fill large voids below-grade • Stops high-volume leaks • Free rise expands up to 2,600%
	AV-330 Safeguard Series	Standard*–350-750 cP NTP–350-750 cP	Single-component grout that seals active leaks in below-grade structure in various cracks and joints, and offers added safety in confined spaces or where there is poor ventilation; e.g. utility vaults, basements: <ul style="list-style-type: none"> • Seals medium cracks or joints in concrete structures • Great for manholes and pipe penetrations • Can be used for underwater applications
	Ultrafine Cements from US Grout - SD* and VX		Composed of a finely ground mixture of Portland cement, pumice pozzolan, and dispersant. Small particle size (average of 3 micron) penetrates small fractures and fine soils: <ul style="list-style-type: none"> • BABA approved • Stable North America supply • Stabilizes weak soils • Seals seepage in mines, dams, and tunnels • Low permeability grout curtaining
	*NSF/ANSI/CAN 61 Drinking Water System Components		
Logiball Inc.	PR-10 Chemical Grout	1-2 CPS in solution	Chemical grout to control groundwater infiltration in main-lines, joints, lateral connections & laterals with remotely operated packers.
	Logiscell+	3500-5000 cps	Water activated Hydrophilic grout to seal active leaks in visitable structures (filling joints & cracks, sealing pipe penetrations, filling voids). Working with dry oakum.
Prime Resins	Prime Flex 900 XLV	250-350 cps	Sealing leaks in extremely tight hairline cracks.
	Prime Flex 910	35-50 cps	Soil stabilization; curtain wall grouting; sea wall leak sealing. Hydrophobic, forms watertight, rock hard mass.
	Prime Flex 920	120 cps	Soil stabilization, permeation grouting, void filling, gushing leak sealing, below-grade curtain grouting. Hydrophobic.
	Prime Flex 940	450-600 csp	Sealing active leaks in joints and cracks. Hydrophobic flexible foam.
	Hydro Gel SX	440-550 cps (20 cps at 8:1)	Sealing leaks; point repair grouting. Hydrophilic; for wet, below-grade environments such as manholes
	Prime Flex 985 (LX20)	270-280 cps	Rigid polyurethane foam. Fills voids in/around structures; fills abandoned underground storage tanks and pipes.
	AR 800	1-15 cps in solution	Soil stabilization, sealing joints and leaks in potable water pipes and waste water pipes. Hydrophilic, acrylate (acrylamide-free), elastomeric gel, primarily for geotech uses. Wide window of variable set time-field adjustable. Excellent penetration in sandy/silty soils. For void fill when expansive pressure is not desired.
	AR 870	2-7 cps in solution	Sealing leaks in concrete; sealing wastewater lateral joints and leaks; controlling water in tunneling ops, elevator pits, below-grade structures.
	Precision Lift 4.0/4.75	270-280 cps	Compaction grouting, slab lifting. Hydro insensitive, polyurethane structural foam.
	PR10L ACLM	1-2 cP @ 72° F in solution	Sealing leaks from infiltrating water or to deeply penetrate soils for stabilization. Thin as water for great penetration.
Sealing Systems	Aqua Seal	440 cps "B" side 200 cps "A"	Aqua Seal is an extremely reactive two side component hydrophobic polyurethane water stop system that can be injected into flowing water.
Spectrashield	SpectraGrout®	125cP	Hydrophilic grout used for stopping leaks, filling joints and cracks, sealing pipe penetrations, filling voids and stabilizing soil in wastewater structures

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GROUTING EQUIPMENT

TEST & SEAL PACKERS

Company	Model	Pipe Diameter (in)	Type
Logiball Inc.	2001 J Series	6-21	round pipe (vcp, acp, concrete, pvc)
	CMP Series	4-144	round pipe collapsible mainline test & seal packers
	Elliptical series	(14 x 23+)	test & seal grouting packers for elliptical concrete pipe
	Box Culvert series	up to 120	custom made packers for box culverts
	Flexible Push/Pull	4-10	flexible packers w/3-5ft grouting span
	Log Span Flexible Grouting Packers	8-24	Flexible grouting packers with longitudinal spans up to 12 feet to grout longitudinal defects.
CUES	Low Void	6-18	round
	Collapsible	24-96	round

TEST & SEAL LATERAL PACKERS

Company	Model	Mainline Diameter (in)	Lateral Diameter (in)
Logiball Inc.	2001L series	6-30	4-6; 30
	Man Entry Lateral Packer	30-42	4-8
CUES	Logiball	6-30	3-8

STRUCTURAL POINT REPAIR

Company	Model	Mainline Pipe Diameter (in.)	Lateral Diameter
CUES	CUES LOCK Stents	6-108	round
	CUES LOCK Sealer Sleeves	6-108	round
	CUES LOCK End Sealers	6-108	round
Flow-Liner Systems	Quick Lock Point Repair	4-32	round
	Quick Lock End Cap	8-32	round
GeoTree Solutions	RenewWrap	36+	CMP, concrete, brick, stone, storm, sewer, box
Pipeline Renewal Technologies	Quick-Lock Point Repair	6-32	round

INTERNAL JOINT SEALS

Company	Product	Seal Application Size (in)	Seal Operating Pressures (psi)
Cretex Specialty Products	Internal Manhole Chimney Seal	20-48	6 external
	Chimney Seal	20-48	n/a
	Internal Pipe Joint Seal	24-48	6 external
	External Manhole Joint Seal	32-120	13 external
	HydraTite Seal	18-216	150 external/300 internal
InnerCure Technologies Inc.	Internal joint seal	3-24	15 (external)
LMK Technologies	CIPMH	up to 36	150 external
Pipeline Renewal Technologies	Quick-Lock End Caps	6-32	
PrimeLine Products	NPC-internal joint seals	15-120	30' of head pressure
	NPC-external chimney seals	32-42	
	NPC-internal chimney seals	18-42	
	NPC-liner end seals	7.25-36	
Sauereisen	Manhole Chimney Seal No. F-88	12-60	35
Sealing Systems Inc.	Flex-Seal 2.0 internal chimney seal	n/a	40
	Gator Wrap external joint wrap	20-72	30' head pressure
	Infi-Shield uni-band external chimney seal	24-48	

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MANHOLES				
Company	Coating	Inserts	Liners	Inverts
APM Permaform	Yes	Yes	Yes	Yes
No-Dig manhole solutions since 1975 provided through world-wide network of highly trained applicators; PERMAFORM, PERMACAST, CONMICSHIELD and COR+GARD offer the "hole" solution.				
Cherne	Yes	Yes	Yes	Yes
Cherne Air-Loc Bladder Style Manhole Testers provide an efficient, cost-effective method of testing new, existing and rehabilitated manholes, per ASTM C 1244.				
Cretex Specialty Products	No	Yes	No	No
Leading manufacturer of mechanical internal and external manhole frame-chimney seals, internal joint seals, PRO-RING, external joint wraps, lid plugs, gaskets and more.				
Danby	No	No	Yes	Yes
Cast-in-place new and rehab manholes using corrosion-resistant PVC liner with cementitious grout for storm and wastewater structures for over 28 years.				
Epoxytec	Yes	No	Yes	No
Epoxytec offers coating solutions since 1979 to repair, rehabilitate, coat and line wastewater and water infrastructure.				
GeoTree Solutions	Yes	No	Yes	Yes
Leading manufacturer of geopolymer lining systems for spray or hand-applied (including GeoSpray and GeoSpray HCE mortar solutions).				
Granite Inliner	Yes	Yes	Yes	Yes
Manholes renewal contractor with over 35,000 manhole restorations completed utilizing a portfolio of comprehensive technologies that include CIPMH and epoxy-based methods.				
HOBAS Pipe USA	No	Yes	Yes	No
Segmental sections are utilized to rehabilitate manhole shafts. The corrosion resistance and high strength composite make liner insertion quick and easy. Manhole T-base systems are available.				
Infrastructure Repair Systems	Yes	No	No	No
Infragard, a durable topcoat and Chim Coat; a flexible mastic, trowel-on 100% solid epoxy rehab material.				
ISCO Industries Inc.	Yes	Yes	Yes	Yes
Spirolite: Custom-designed and -configured HDPE manholes offer lightweight strength and durability, versatility and long life - for a complete, cost-effective solution.				
LMK Technologies	No	No	Yes	No
A stretchable, one-size fits most CIPP lining is designed to structurally renew manholes while eliminating inflow at its source. CIPMH can be installed as a chimney seal or full-depth manhole lining.				
Madewell Products Corporation	Yes	No	Yes	Yes
The Mainstay-branded restoration mortars and epoxy liners provide corrosion protection and structural integrity through a unique process yielding single cure time.				
McNeil Technologies Inc.	No	No	Yes	Yes
Triplex Liners stop infiltration & deterioration. Composed of fiberglass, a non-permeable membrane, and epoxy resin. Bonds to wet or dry surfaces. Manhole installation: 6 hours.				
Miller Pipeline	No	Yes	No	No
NOV Fiber Glass Systems Manholes	No	Yes	Yes	Yes
Non-corrosive FRP structural rehabilitation inserts, and new manhole or wetwell structures, per ASTM-D 3753. One-piece construction stops I&I and H2S degradation. H-20 Traffic Load rated; maintenance free.				
OBIC, LLC	Yes	No	Yes	Yes
Structural, semi-structural or multilayer polymer liner systems for structures with damage from infiltration or corrosion.				
PPG Industries	Yes	No	Yes	Yes
PPG RAVEN 405 ultra-high-build epoxy lining system is a solvent-free, 100-percent solids coating with broad chemical resistance for new and rehabilitated wastewater infrastructures.				
PrimeLine Products	Yes	No	No	No
Based on advanced anti-microbial epoxy mortar technology, the liner contains broad-spectrum anti-microbial material that protects from mold, mildew & bacterial growth, and is highly chemical-resistant.				
Quadex LLC (member of the Vortex family)	Yes	No	Yes	No
Since 1991, Quadex has been manufacturing and delivering the highest-quality geopolymer, hybrid cements and patching materials for the manhole/sewer infrastructure rehab market.				
Sauereisen	Yes	No	Yes	No
Sauereisen manufactures an array of cements, calcium aluminate, 100% solids epoxies, urethanes and polyurethane grouts for stopping water inflow and preventing corrosion in wastewater manholes.				
Sealing Systems	Yes	Yes	No	No
Sealing Systems manufactures a variety of manhole rehab products: manhole inserts, coatings (external & internal) and chemical grout.				
SewperCoat by Imerys	Yes	No	Yes	Yes
SewperCoat has been providing owners challenged by biogenic corrosion with a long-lasting solution for over 30 years.				
Spectrashield® Liner Systems	Yes	No	Yes	Yes
Stops infiltration, prevents corrosion, and has a 10-year warranty.				
Sprayroq Inc.	Yes	No	Yes	Yes
Structural polyurethane that is self-priming, and provides infiltration control and fast return to service.				
Standard Cement Materials	Yes	No	Yes	Yes
Since 1990, Minority Business Enterprise manufactures cementitious, geopolymer and calcium aluminates for CMP pipes, concrete, brick and fiberglass manholes; and epoxy coatings for lift stations.				
The Strong Company	Yes	No	Yes	No
Manhole rehab solution since 1989. The fast, cost-effective solution for stopping infiltration, restoring structural integrity and protecting against corrosion.				
Warren Environmental	Yes	No	Yes	Yes
Warren Environmental is a manufacturer of environmentally safe, non-hazardous, 100% solids, structural epoxy systems used to protect or rehabilitate a variety of infrastructure in one, time-saving coat.				

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REMOTE INSPECTION SYSTEMS						
Company	Model	Pipe Size (in)	Pipe Length (ft)	Video	Camera	Adjust Focus
Aries Industries	Voyager High Definition HD400 WiperCam	6-70	1,200	HD	mainline	yes
	Voyager High Definition HD TR400 Steerable Transporter (power camera lift)	6-72	1,200	HD	mainline	yes
	Voyager LP400 Laser Profiler	6-18	1,200	HD	mainline	yes
	Mobile Voyager High Definition System	6-72	800	HD	mainline	yes
	Pathfinder PE3430/PE3530 WiperCam	6-70	1,200	color	mainline	yes
	Pathfinder TR3300 Steerable Transporter (manual camera lift)	6-24	1,200	color	mainline	yes
	Pathfinder TR3320 Steerable Transporter (power camera lift)	6-48	1,200	color	mainline	yes
	Pathfinder TR3400 Steerable Transporter (power camera lift)	8-72	1,200	color	mainline	yes
	Pathfinder LP3300 Laser Profiler	6-36	1,200	color	mainline	yes
	Mobile Pathfinder System	6-72	1,200	color	mainline	yes
	Illumi-Zoom PE2620/PE2720 Pan & Tilt Camera	6-100	2,000	color	mainline	yes
	Taurus TR2000 Track Transporter	6-24	2,000	color	mainline	yes
	Badger TR3001 Wheeled Transporter	8-48	2,000	color	mainline	yes
	Badger TR3030 Wheeled Transporter	8-48	2,000	color	mainline	yes
	Titan TR7000 Steerable Wheeled Transporter	18-100	2,000	color	mainline	yes
	Titan LP3300 Laser Profiler	18-96	2,000	color	mainline	yes
	RinnoVision Manhole Inspection System	15" wide	100' deep	color 4K	manhole	auto
	High cube truck build with any systems listed above					
	Van build with any systems listed above					
	Trailer build with any systems listed above					
	Grout truck builds					
	TrailBlazer Mobile Enclosure with Mobile Voyager/Mobile Pathfinder					
	Retrofit existing inspection vehicles with any systems listed above					
CUES	Digital Universal Camera DUC	6-60	2,000	side scan color	mainline	virtual
	Evolution Mainline	2-200	4,000	color	mini & mainline	yes
	LAMP II Lateral & Mainline Probe II	6 relined-36	1,500	color	mini & mainline	no
	OZ II Camera	6-200	N/A	color	mainline	yes
	Pipe Ranger Transporter	7-60	2,000	N/A	mainline	N/A
	Sonar Profiler	8-1,200	2,800	color	mainline	N/A
	Laser Profiler	6-90	N/A	N/A	mainline	yes
	Compact Pipe Ranger Transporter	5-30	1,500	color	mainline	yes
	Ultra Shorty III Transporter	5-30	1,500	color	mainline	yes
	OZ III-S Camera	6-72	N/A	color	mainline	yes
	OZ4-HD Camera	6-72	N/A	color	mainline	yes
	Ultra Shorty 21 Transporter	6-36	1,500	N/A	mainline	N/A
	K2 Series	6-200	1,200	color	mainline	yes
	Steerable Mudmaster	24-200	2,000	N/A	mainline	N/A
	C550c Flexitrac Portable Mainline System	6-60	1,000	PTZ	mainline	yes
	C540c Flexiprobe Push Camera	2-12	500	color	lateral	no
Envirosight	ROVVER X 95	4+	+1,650'	color pan/ tilt/zoom	lateral, mainline	yes
	ROVVER X 130	6+	+1,650'	color pan/tilt/zoom	mainline	yes
	ROVVER X 400	24+	+1,650'	color pan/tilt/zoom	mainline	yes
	ROVVER X Laser	8+	+1,650'	color pan/tilt/zoom, side-scan	mainline	yes
	ROVVER X Digisewer	8+	+1,650'	color side-scan	mainline	yes
	QuickView	6+	+400'	color zoom	manhole, mainline	yes
	VeriSight Pro	2+	+330'	color	drain, lateral	yes
	VeriSight Pro 360	4+	+330'	color pan/tilt	drain, lateral	yes
	JetScan HD Video Nozzle	6+	as long as jetter hose	color	mainline	no
Pearpoint	P550c Flexitrac Portable Mainline System	6 - 60	1,000	PTZ	mainline	yes
	P540c Flexiprobe Push Camera	2 - 12	500	color	lateral	no
Subsite Electronics	Private Eye 2	6-200	1,000	color	mainline	yes
	Cube	6-200	1,500	color	mainline	yes
	High Cube VMS	4-200	2,000	color	mainline	yes
	Van VMS	4-200	2,000	color	mainline	yes
	Trailer VMS	4-200	2,000	color	mainline	yes
	Gen2 Lateral Launch	4-24	500	color	mainline/lateral	no/yes
	TrakStar Camera	6-60	n/a	color	mainline	yes
	TrakStar II Camera	6-60	n/a	color	mainline	yes
	TranStar Transporter	6-30	2,000+	n/a	mainline	n/a
	TranStar II Transporter	6-24	2,000+	n/a	mainline	n/a
	ProTrak Crawler	6-30	2,000+	n/a	mainline	n/a
	Steerable Storm Drain Tractor	24-200	2,000+	n/a	mainline	n/a
	Mighty Mini Tractor	4-12	2,000	n/a	mini/mainline	n/a
	Pontoon	24-1,200	2,000	n/a	mainline	n/a
	SPC Push System	2-12	150-500	color	drain/lateral	no

Rehab Technology Selection Guide

LATERAL INSPECTION SYSTEMS

Company	Model	Pipe Size (in)	Pipe Length (ft)	Air/Electric	Material	Motion
Aries Industries	LETS 6.0 - ST930 Camera	relined 6-48	1,500	electric	all pipes	launch 150' up lateral from mainline; self-leveling
	LETS 6.0 - PE3601 Mini Pan & Tilt Camera	relined 6-48	1,500	electric	all pipes	launch 150' up lateral from mainline; pan and tilt
	LETS 6.0 - LE3270 Transporter	relined 6-48	1,500	electric	all pipes	launch 150' up lateral from mainline
	High cube truck build with LETS 6.0 system	relined 6-48	1,500	electric	all pipes	launch 150' up lateral from mainline
	Van build with LETS 6.0 system	relined 6-48	1,500	electric	all pipes	launch 150' up lateral from mainline
	Retrofit existing inspection vehicle with LETS 6.0 system	relined 6-48	1,500	electric	all pipes	launch 150' up lateral from mainline
	Trailer build with LETS 6.0 system	relined 6-48	1,500	electric	all pipes	launch 150' up lateral from mainline
CUES	LAMP II	6 relined-36	1,500	electric	all pipes	extend/retract into lateral from mainline
Note: Unit simultaneously inspects mainlines						
Envirosight	ROVVER X SAT II	6+	1,000	electric	all pipes	extends 150' into lateral from mainline; performs pan/tilt inspection
NuFlow	MiniFlex	1-4	90	electric/battery	any	90°
Subsite Electronics	Gen2 Lateral Launch	4-24	500	electric	all	extends/retracts into lateral from mainline up to 200'
	SPC Push System	2-12	150-500	Manual	All	

CUTTERS

Company	Model	Pipe Size (in)	Pipe Length (ft)	Air/Electric	Material	Motion
Aries Industries	Wolverine 2.0 - CT2750 Cutter/PE2750 Camera	relined 6-24	800	electric	all pipes	self-propelled; in/out-up/down-rotate; 4th axis tool pivot
	High cube truck build with Wolverine 2.0 cutter system	relined 6-24	800	electric	all pipes	self-propelled; in/out-up/down-rotate; 4th axis tool pivot
	Van build with Wolverine 2.0 cutter system	relined 6-24	800	electric	all pipes	self-propelled; in/out-up/down-rotate; 4th axis tool pivot
	Trailer build with Wolverine 2.0 cutter system	relined 6-24	800	electric	all pipes	self-propelled; in/out-up/down-rotate; 4th axis tool pivot
	Retrofit existing inspection vehicle with Wolverine 2.0 cutter system	relined 6-24	800	electric	all pipes	self-propelled; in/out-up/down-rotate; 4th axis tool pivot
CUES	Kangaroo Cutter	6-15	1,000	air/electric	all pipes	in/out-up/down-rotate
	Giant Kangaroo Cutter	10-30	1,000	air/electric	all pipes	in/out-up/down-rotate
	Curahee Cutters	5.25-12	1500	air/electric	all pipes	in/out-up/down-rotate
Flow-Liner Systems	STREICHER	3-5	41-123	air/electric	any	in/out-up/down-rotate
NuFlow	Micro S Light +	3-9	164	air	any	90°
	Climbolino E Cutter	2.5-12	100	electric/battery	any	90°
Perma-Liner Industries/ IMS Robotics	MICRO S automatic	3-10	164	air	any	90°
	MICROlight	3-10	98	air	any	90°
	MICROlight plus	3-10	98	air	any	90°
	MICROautomatic plus	3-10	164-230	air	any	90°
	NANOeasy	3-6	49-82	air	any	90°
Pipeline Renewal Technologies	Micro	3-6	100'	air	any	clamping, arm rotation, arm bend
	Micro Pro	3-6	100'	air	any	self-propelled, clamping, arm rotation, arm bend
	Micro Premium	3-6	100'	air	any	self-propelled, clamping, arm rotation, arm bend
	PC200	8-28	300'	air	any	self-propelled, arm rotation, arm bend, tool pivot
Vortex/Schwalm	Talpa 1300	6-12	600'	both	all	360°
	Talpa 2060	8-24	600'	both	all	360°

Rehab Technology Selection Guide

TRENCHLESS PIPE REPLACEMENT

LATERAL SYSTEMS

Company	Model	Type Drive	Host Pipe Diameter (in)
Fibrrwrap Construction Services	Tyfo Fibrrwrap systems	gas or pressure operated	30+
HammerHead Trenchless	PortaBurst PB30X	hydraulic	2-6
	HydroBurst HB5058	hydraulic	2-12
	HydroBurst 100XTR	hydraulic	3-16
	5½" HammerHead Mole Pipe Bursting Tool	pneumatic	4-6
TT Technologies	Grundotugger	hydraulic	4-6
	Grundocrack PCG85	pneumatic	4
	Grundocrack PCG95	pneumatic	4-6
	Grundocrack Mini-Atlas	pneumatic	4
	Grundocrack PCG130	pneumatic	4-6

PNEUMATIC PIPE BURSTING

Company	Model	Tool Length (in)	Tool Diameter (in)	Host Pipe Diameter (in)	Host Pipe Type
HammerHead Trenchless	5.125" SR	66	5.125	6	ACP, VCP, RCP, concrete, cast iron
	5.75" SR	79.5	5.75	6	ACP, VCP, RCP, concrete, cast iron
	7" AR	81	7	6-10	ACP, VCP, RCP, concrete, cast iron
	8" AR	105	8	8-12	ACP, VCP, RCP, concrete, cast iron
	12" AR	89.2	12	10-18	ACP, VCP, RCP, concrete, cast iron
	16" AR	85.5	16	12-24	ACP, VCP, RCP, concrete, cast iron
	20" AR	108.4	20	18-26	ACP, VCP, RCP, concrete, cast iron
	26XPR	138	25.6	15-36	ACP, VCP, RCP, concrete, cast iron
	Note: SR = Screw Reverse; AR = Air Reverse; AI = Air Impactor				
	all	n/a	n/a	6-42	all
Inland Pipe Rehabilitation (IPR)	Note: IPR is a pipe-bursting contractor that uses all equipment manufacturers.				
TT Technologies	Mini-Atlas	36	5	6-7	ACP, VCP, RCP, concrete, cast iron
	Titan	61	5.75	6-7	ACP, VCP, RCP, concrete, cast iron
	PCG 130	50.5	5	6-7	ACP, VCP, RCP, concrete, cast iron
	PCG 145	60	5.75	7-8	ACP, VCP, RCP, concrete, cast iron
	Olympus	66.5	7	6-8	ACP, VCP, RCP, concrete, cast iron
	PCG 180*	66	7	8-12	ACP, VCP, RCP, concrete, cast iron
	Hercules	75	8.5	8-12	ACP, VCP, RCP, concrete, cast iron
	HV 220*	79	9	10-12	ACP, VCP, RCP, concrete, cast iron
	Mini-Gigant	49	10	10-12	ACP, VCP, RCP, concrete, cast iron
	Gigant	79	10	12-16	ACP, VCP, RCP, concrete, cast iron
	PCG 270*	84	11	14-16	ACP, VCP, RCP, concrete, cast iron
	Koloss	92	14	16-24	ACP, VCP, RCP, concrete, cast iron
	Goliath	112	18	22-30	ACP, VCP, RCP, concrete, cast iron
	Taurus	144	24	32-42	ACP, VCP, RCP, concrete, cast iron
	*Reversible				

PUSH TECHNOLOGY

Company	Model	Pipe Diameter Range (in)	Thrust (tons)	Pit Size (ft)	Host Pipe Types
Tenbusch	B-500	Clay&DI 6-12; Steel 6-18	140	9 x 9	AC, VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	B-600	Clay&DI 6-15; Steel 6-22	192	9 x 9	AC, VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	B-700	Clay&DI 6-12 Steel 6-18	140	9 x 14	AC, VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	T-1000	Long joints of DI to 12" DIA	192	varies	AC, VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	T-1500	Long joints of DI to 16" DIA	250	varies	AC, VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	T-2000	Long joints of DI to 24" DIA	375	varies	AC, VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	MB - 330	Clay&DI 6-10 Steel 6 -15	125	4 x 10	AC, VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	MB - 340	Clay&DI 6-10 Steel 6 -15	125	4 x 14	AC, VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	MB - 3040	Clay&DI 6-27 Steel 6 -36	375	9 x 14	AC, VCP, Cast Iron, DI, RCP, PVC, HDPE, Truss Pipe, Steel
	MH - 100	Clay&DI 6-8	62	in manhole	AC, VCP, Cast Iron, DI, RCP, PVC, Pipe, Steel, HDPE, Truss

STATIC PIPE BURSTING SYSTEMS

Company	Model	Type Drive	Thrust (ft/lbs)	Pullback (lbs)	Power Unit	Host Pipe Diameter (in)	Host Pipe Types
HammerHead Trenchless	HydroBurst HB5058	hydraulic	100,000	100,000	pack	2-8	ACP, VCP, RCP, concrete, cast iron, ductile iron, steel
	HydroBurst 100XTR	hydraulic	20,000	200,000	pack	3-16	ACP, VCP, RCP, concrete, cast iron, ductile iron, steel
	HydroBurst HB175XT	hydraulic	25,000	346,000	pack	8-24	ACP, VCP, RC concrete, cast iron, ductile iron, steel
	PortaBurst PB30X	hydraulic	N/A	60,000	pack	2-6	ACP, VCP, RCP, concrete, cast iron & more
Inland Pipe Rehabilitation (IPR)	all	n/a	n/a	n/a	all	6-42	all
Note: IPR is a pipe-bursting contractor that uses all equipment manufacturers.							
TT Technologies/ Grundoburst	400S (manhole)	hydraulic	80,000	90,000		4-8	Ductile iron, steel, RCP, VCP, cast iron, concrete & more
	400G	hydraulic	80,000	90,000	pack	4-8	
	800G	hydraulic	100,000	173,000	pack	6-12	
	1250G	hydraulic	155,000	225,000	pack	6-20	
	1900G	hydraulic	250,000	225,000	pack	6-20	
	2500G	hydraulic	396,000	570,000	pack	24-48	
	30TX	hydraulic	60,000	60,000	pack	4-6	
	50TX	hydraulic	100,000	100,000	pack	4-8	