



Laser Profiling

The most precise drainage investigation service

With developers now regularly choosing to install PVC sewer systems, the warping and deformation of pipes is a likely occurrence. Laser Profiling enables us to expose pipe deformation within a new drainage system, that would be difficult to identify on standard CCTV surveys, allowing water companies to easily ensure standards are met, before adoption.

Laser Profiling

Laser Profiling is the ideal technique to expose pipe deformation within new drainage systems, which may be unidentifiable by standard CCTV investigations.

Nowadays, developers are choosing to install PVC pipes, as opposed to traditional clay and concrete pipelines, due to the reduced cost, time restraints and manual handling. Unfortunately, PVC can be more susceptible to warping and deformation, which will have a negative effect on the structural integrity of the pipe.

By conducting Laser Profiling surveys directly after pipe installation, we can find any deformations at an early stage, and take measures to prevent further deterioration, saving both time and money in the long-term.

How we can help

Originally developed to provide



pipeline engineers and contractors like us with highly accurate data about a pipeline, the technology can determine whether a new drainage system is acceptable for adoption.

Laser profiling can be used to determine precise measurements about the current condition of a new drainage system. Once established, this information

can be used to determine whether the pipe is of a high enough standard for adoption by water companies.

DrainsAid's iPEK Laser ShapeScanner can be utilised in circular pipes ranging from 150mm to 700mm in diameter. The device is easily attached to one of our Rovian crawler cameras, offering the ability to traverse the pipe and provide a cross sectional profile, without the need for man entry.

This allows our advanced WinCan LaserScan software to build a three dimensional digital pipe profile, allowing the determination of the pipe's shape, capacity and ovality. Overall reports can assist a water company when undertaking investigations to assess whether a new sewer system meets Section 104 or 102 adoption regulations.



Laser showing deformation of the top right side of a PVC pipeline.

Our Capabilities

- ✓ DrainsAid are one of few companies around the UK to specialise in this technology
- ✓ Compatible with various crawler cameras, which allow fast, simple installation
- ✓ Capability to undertake a 500m length survey from one access point
- ✓ Flotation device for pipelines with heavy flows
- ✓ For pipelines ranging from 150mm - 700mm
- ✓ Ability to find 1% deformations, with an advised maximum ovality limit of 6%
- ✓ 360° rotation



iPEK Laser ShapeScanner A Simple Process

The Laser ShapeScanner projects a ring of laser light onto the internal wall of the pipe, as the camera traverses down the line, providing a cross section and frame-to-frame 3D image of the line.

The raw data can be viewed in real-time while on site, on screens inside our iPEK Rovian Inspection Truck, however is also recorded for further assessment.



WinCan LaserScan Software High Quality Report

Our WinCan VX LaserScan Software creates a digital pipe profile, allowing us to calculate information about the pipe, which will help in analysis of the sewers serving a new development, and when making rehabilitation decisions.



Our specialist team will interpret the collected data to create a range of reports for our client, including data tables, graphs and evidential photo support.

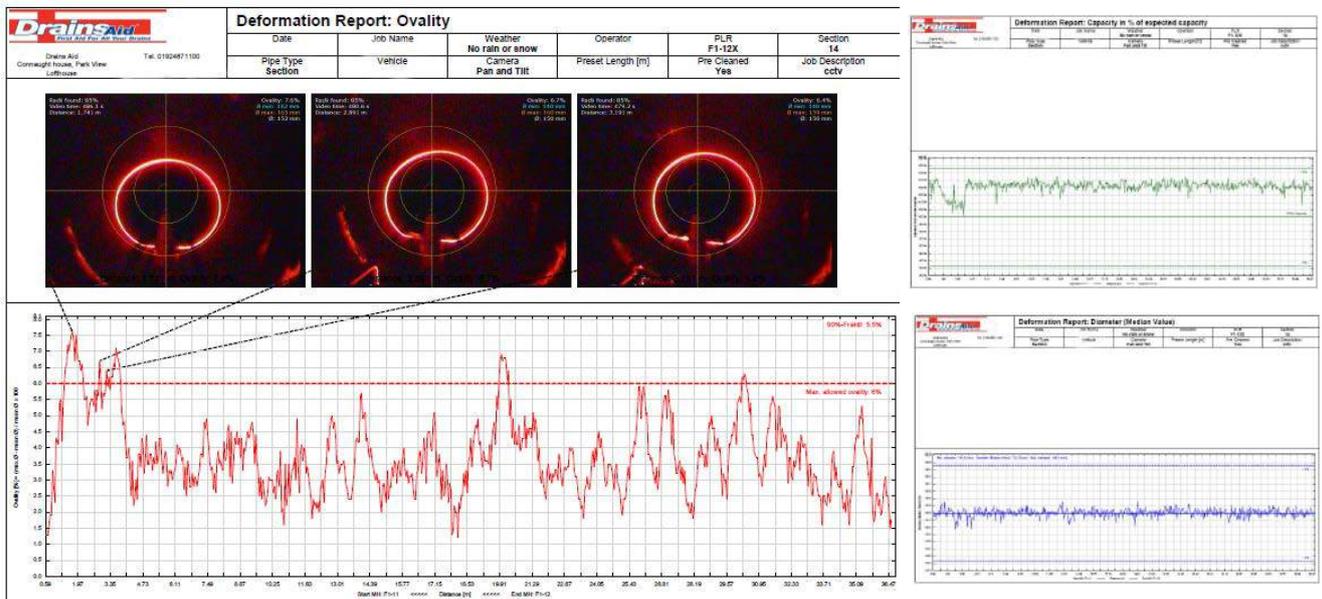
Although a standard CCTV Investigation alone can uncover larger deformations which are identifiable by the naked eye, they may not expose smaller deformations or slight irregularities in ovality. However, when used in conjunction with a laser profiler, our software can uncover deformities of even 1%, enabling our clients to easily ensure new sewer systems meet their precise regulations before adoption.

Laser profiling surveys are now a vital addition during the adoption of a newly constructed private sewers, to ensure all regulations conform to 104 or 102 section agreement, between developer and water company.

Section Inspection - 10/09/2018 - F3-12X							
Section #	Operator	Inspection Date	Time	Client's Job Ref	Weather	Pipe Cleaned	ILR
	Vehicle	10/09/18	12:40	Camera (Pan, Tilt, Zoom)	No Rain Or Snow	Yes	F3-12X
				Preset Length	Criticality Grade		Alternative ID
					Unknown		
Town or Village:	Sheffield	Inspection Direction:	Downstream	Upstream Node:	F3-12		
Road:		Inspected Length:	78.32 m	Upstream Pipe Depth:			
Location:	Road	Total Length:	78.79 m	Downstream Node:	F3-11		
Surface Type:	Grass	Joint Length:	0.50 m	Downstream Pipe Depth:			
Use:	Foul	Pipe Shape:	Circle				
Type of Pipe:	Grout/draincover	Pipe Diameter:	150 mm				
Year Constructed:		Pipe Material:	Polypropylene				
Flow Control:	No flow control	Lining Type:	None				
Inspection Purpose:	Routine inspection of condition	Lining Material:	None				
Comments:							
Recommendations:							
Scale: 1:1000	Position [m]	Code	Observation	Grade			
Depth: m	0.00	MH	Start node type, manhole, reference number: F3-12				
	0.00	WL	Water level, 10% of the vertical dimension				
	27.60	D	Deformed drain or sewer: 10% Deformed 15.1% see early report				
	78.32	MHF	Finish node type, manhole, reference number: F3-11				
Depth: m							
Structural Defects				Construction Features			
Service & Operational Observations				Mechanics Features			
STR No. Def	STR Peak	STR Mean	STR Total	SEIR No. Def	SEIR Peak	SEIR Mean	SEIR Total
0	0	0	0	0	0	0	0

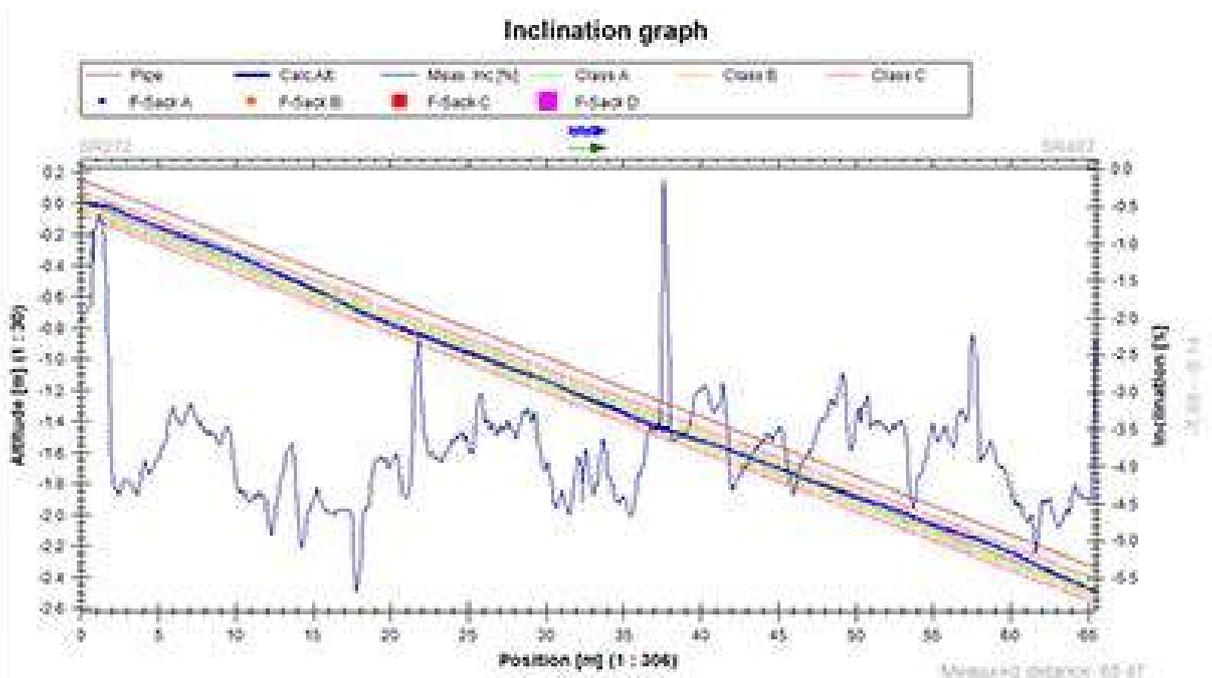


Laser profiling software efficiently determines the exact percentage of deformation, which may be unidentifiable on a standard CCTV survey. Example shows a 6.4% deformation of a PVC pipeline.



WinCan VX Reports include capacity, diameter and ovality graphs, which highlight any deformations greater than 6%.

Inclination Reports



Additionally, Inclination Reports can be used to identify sags and other potential flow problems by measuring falls and rises within the pipe length.

When undertaken in conjunction with a Laser Profiling Survey, Inclination data is collected using our camera crawlers built in inclinometer and displayed as a line graph. Using our WinCan VX software, we can provide a detailed inclination report in a PDF format, along with video footage on a USB drive.