

Guided Wave Inspection of Lamp Posts

Case Study 19



Lamp Posts

Lamp posts and other street columns are some of the most common civil structures in our cities, providing essential signage and illumination for modern life. There are approximately 8 million lamp posts in the UK alone, and many more if other types of column are included.

These columns have an average life span of up to 40 years, but it can be significantly shortened under mitigating circumstances. For example, saturated ground or a lack of metal treatment, or both, could induce rapid corrosion, typically in sections away from sight. If left unchecked, the column could collapse, posing safety risks to the passer by public and surrounding properties. As a result, many countries have now imposed strict regulatory requirements for the inspection of lamp posts and street columns at regular intervals.

Guided Wave Testing (GWT) offers a quick cost effective Non-Destructive Testing (NDT) solution which improves repair and servicing priorities for decision making.

Column GWT

A significant number of lamp posts along a major highway in the UK were inspected using GWT.

Minimal surface preparation was required for the installation of the GUL sensor ring designed for this application. Inspection times were optimised by using a customized collection protocol and the well-established interpretation software WavePro™; averaging 16-20 lamp posts per hour.

Where corrosion was identified, accurate auditable data - such as GPS location, axial and circumferential positions, and defect category - could be immediately presented and stored for later reference.

Equipment



Wavemaker® G4 Mini

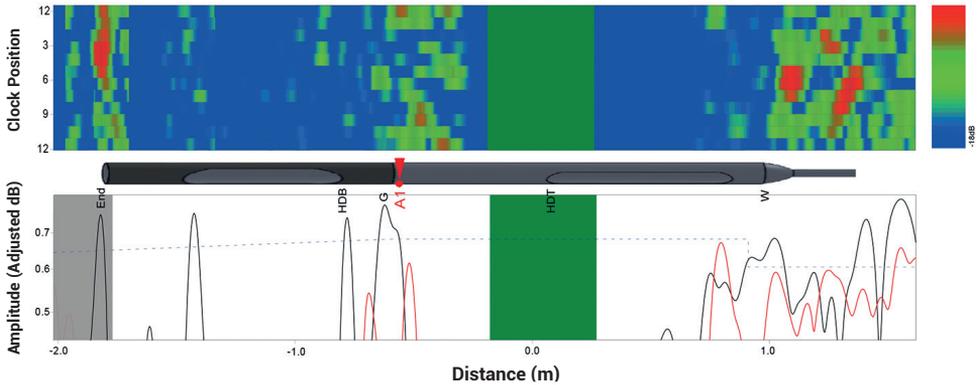


Lamp Post Ring

Lamp Post Inspection

Metal column evaluation using guided waves

WavePro™ - GWT Results



Proven Results

The Wavemaker® result from one of the inspected lamp posts is shown above. A severe indication was detected 0.57m from the ring, a location just above the ground interface, extending over approximately 0.3m in the axial direction towards the ground. The circumferential position of the defect was also positively identified using the C-Scan result.

Following the removal of the galvanised coating, a detailed visual inspection found a corrosion patch near the ground interface with the most severe location corresponding to a through wall defect. As a result of the GWT findings, the inspector was able to inform the authority for immediate action.



Indication A1. A through-wall defect located on the section just above the ground interface of the lamp post.

Report Summary - Table of Features

Feature	Type	Location [m]	Length [m]	Notes
End	End of Post	-1.81	~	---
HDB	Hatch Door - Bottom Side	-0.82	0.5	Cabling access.
G	Ground Entrance	-0.59	~	Granular base tarmac.
A1	Severe Defect	-0.57	0.3	Severe. Extends 0.3m below ground.
HDT	Hatch Door - Top Side	+0.08	0.67	Fuse & Switch access.
W	Weld	+0.51	0.02	---

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