

**Non Destructive
Testing & Inventory
Data Capture of
Lighting Columns &
Highway Assets**

**Partner
For
Progress**

Kiwa CMT Testing





Structural Testing of Steel
Lighting Columns

Data Collection and
Geographical Positioning
of Highway Assets

Inspection of Concrete Columns

Assessment for Column Attachments

Load Testing of Catenary Wire
Anchor Points

Other NDT Services

About Kiwa

Kiwa CMT Testing is part of the Kiwa group which is a world top 20 leader in Testing, Inspection and Certification (TIC). Markets we are active in range from street lighting, construction materials testing and energy supply to drinking water, agri food and healthcare.

Kiwa employs over 4,500 people in more than 100 offices in over 40 countries across the world; mainly in Europe, Asia and Latin America.

Kiwa has 6 offices/laboratories in the UK, with the inspection and testing services for lighting columns operating from our Derby office. We cover the UK using our own qualified, experienced technicians (no sub-contractors).

Kiwa CMT Testing is a UKAS accredited materials consultancy, testing and investigation company providing expert services in environmental, geotechnical, structural, laboratory and site testing for the construction and highway infrastructure sector (including street lighting).

We are UKAS and CHAS accredited and HERS, HEA and Constructionline registered.





Reporting of Test Results

Using the test results obtained, 'Loss of Section Units' (LSU's) are reported as an estimated bulk average percentage loss of section relative to a reference point. The data is then used to classify the column and a corresponding recommendation is given regarding replacement or required re-testing of the column within a recommended timeframe, using GN22 as guidance (See table 1).

(Table 1)

GN22 Category	Kiwa CMT Class	Average LSU's (Estimated % Loss)	Recommendation
2U	5	-50	Immediate removal or making safe of the unit
1U	4	-25 to -50	Schedule for removal/ replacement as soon as practicable / in accordance with Operating Authorities Action Matrix
2G	3	-17 to -24	Re-test within 2 years
3G	2	-11 to 16	Re-test within 3 years
5G	1	0 to -10	Re-test within 5 years

Structural Testing of Steel Lighting Columns

Our unique RLS system has been developed specifically to locate and quantify corrosion of steel columns that cannot be identified by visual inspection, e.g. below ground (root) internal corrosion of the base and hot-swaged joint.

The technique for lighting column testing is a dry-coupled system that provides a cost-efficient assessment of the column. Results obtained estimate the percentage loss of section allowing the columns to be classified (on a scale of 1-5) for either replacement or periodic re-testing. An electronic reporting procedure enables test results to be uploaded directly into the client's inventory.

The lighting column testing process covers all areas identified in the ILP GN22 (Guidance Note 22 - 2019) as being at risk.

Kiwa CMT Testing is UKAS accredited to ISO/IEC 17025 for the use of the unique Relative Loss of Section™ (RLS) system for structural testing of lighting columns.

Registered with the Highway Electrical Registration Scheme (HERS), members of the Institute of Lighting Professionals (ILP) and the Highway Electrical Association (HEA).





The pressure to reduce energy costs is in many cases leading to LED conversion schemes. Accurate asset data for LED conversions is paramount and secures efficient ongoing maintenance.

Asset data obtained from site is uploaded to the Kiwa CMT portal in a format that can be uploaded straight into the client's industry database.

We pride ourselves on delivering a quality service. We employ qualified, experienced technicians, all of whom carry ECS cards. We are HERS registered and members of HEA.



Inventory Data Collection and Geographical Positioning

We strive continually to provide the very best and most technologically advanced service for our clients, including the capture of data and geographic positioning of assets, as well as GN22 condition surveys.

As there is an increasing requirement to have an accurate inventory, Kiwa CMT Testing offer a service which includes the capture of data using handheld computers with an inbuilt Global Positioning System (GPS) to ensure accurate positioning of the asset, whilst providing data which is tailored to the client's requirements.



Inspection of Concrete Columns

Concrete columns are inspected and recommendations given using guidance from GN22.

There are two basic types of concrete column, reinforced and pre-stressed. A reinforced lighting column has concrete cast around a substantial reinforcement cage extending over the full length of the lighting column.

A pre-stressed lighting column is formed around high tensile pre-stressed wires under tension with a much-reduced diameter, typically 2-3 mm.

These wires hold the concrete in compression, preventing cracking under normal loading. The main function of the inspection is to assess the concrete column at various sections to gain a classification/recommendation of the overall condition.



Missing mortar plug resulting in corrosion of reinforcement.



Exposed reinforcement due to frost damage.

Fixing Column Attachments

If you are required to place an attachment on a lighting column, it makes sense to ensure the column won't be overstressed before commencing.

Attachments are sometimes fixed to columns without the local authority's knowledge or approval. These can be in the form of festive decorations, catenary wires, hanging baskets, advertising banners, ANPR or CCTV cameras or just additional signs.

Kiwa CMT Testing is able to inspect, test and obtain data from site in accordance with PLG06 (Guidance on installation and maintenance of seasonal decorations and lighting column attachments), enabling our structural engineers to carry out the necessary calculations in accordance with BS EN 40, determining the column capability to carry an additional load.

Anchor Point Testing for Catenary Wires and Festive Decorations

As specified within the ILP PLG06.

Decorations look great, provide a feel-good factor and are up and illuminated in all weathers during festive seasons. Suspended between buildings at variable heights, often swinging in high winds and likely to be topped by snow and ice.

But....what happens if they fall? There have been occurrences when festive lighting displays have come loose from buildings; injuring pedestrians and resulting in lengthy and costly investigations by the Health & Safety Executive.

For instance, fixings in the form of eyebolts for catenary wires should be tested to ensure the safety of displays. We can help to minimise the risk and keep pedestrians safe by carrying out the required testing using our experienced technicians and calibrated load test equipment to give an assessment of the fixing and substrate material.



Other Services

Kiwa CMT Testing is an accredited site and laboratory materials testing and investigation company, providing an expert scope of services throughout the building construction and civil engineering industries.

These services are covered by five principle departments: Concrete, Chemistry, Geotechnical, Structures and Geo-environmental, offering a whole spectrum of testing within these disciplines.

Our in-depth experience is second to none and allows us to provide the optimum scope of services along with the most appropriate methodology from initial appraisals to recommendations or subsequent testing and investigation.

Our range of services include:

- > Geotechnical site investigation.
- > Building Product Testing, including concrete, asphalt, brick and masonry.
- > All phases of ground contamination site investigation.
- > Waste Acceptance Criteria Testing.
- > Structural investigation, inspection and testing.



And it's not just festive decorations:

- > Stud Protections
- > Threaded Inserts
- > Eyebolts for Safety Harnesses
- > Scaffold Ring Bolts
- > Remediation Wall Ties
- > Bolts on Steel Frame Buildings
- > Holding Down Bolts

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