

Kiwa CMT
Non-Destructive
Testing of Lighting
Columns &
Data Capture of
Highway Assets



creating
trust
driving
progress



kiwa

Welcome to *Kiwa CMT*



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

From desk study to intrusive investigation, laboratory testing, analysis, interpretive assessments and final reporting, our services are carried out by a dedicated team with scientific and engineering backgrounds and many years' experience within the construction industry.

Kiwa's inspection and testing services for lighting columns are based in Derby from where we cover the UK using our own qualified, experienced technicians for structural testing and data collection Surveys (no sub-contractors).

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



About *Kiwa*

The Kiwa group is a world top 20 leader in testing, inspection and certification (TIC). With our certification, inspecting, testing, training and technology services, we create trust in our customers' products, services, processes, management systems and employees.

We are globally active in over 40 countries, covering a wide variety of markets segments, ranging from construction and energy supply to drinking water, healthcare, electrical and wireless in Europe, Asia, the Americas and Oceania.

We have clients in manufacturing and process industries, (business) services, public and private utilities, governments and international institutions. Kiwa employs over 10,000 people and in 2021 became a member of SHV's family of companies.

About *SHV*

Since 2021, Kiwa has been a proud member of the SHV Family of Companies. This milestone in our company history has enabled us to take the next step in our global development and safeguard an independent future for Kiwa. Together, we strive to be a globally engaged TIC player for our customers, employees and society at large.



Non-Destructive Structural and Electrical Testing & Inventory Data Capture



"Kiwa Ltd has been completing an annual programme of Non Destructive Testing for street lighting equipment on behalf of Gloucestershire County Council for the last fifteen years, annually testing more than 10,000 assets. Over this period, we have built a strong professional working relationship with Kiwa.

It is reassuring to have a partner that we know has the knowledge, experience and understanding of the structural challenges that affect the various makes and specifications of street lighting equipment and that has proven to deliver significant annual programmes of structural testing in a professional and organised manner, providing regular progress updates and clear and accurate results.

We have always been pleased with the processes implemented by Kiwa to ensure that our programmes of work are completed to the highest standards, on time, to budget and that we are now in an enviable position of having an extensive knowledge and history of the structural integrity of all our steel street lighting columns that are greater than twenty years old."

Ken Pitt
Street Lighting Manager
Gloucestershire County Council
Additional CMT Services



Lighting Services



Non-Destructive Structural Testing of Steel Lighting Columns

Our unique RLS system has been developed specifically to locate and quantify corrosion ensuring compliance with TR22/GN22.



Data Collection and Geographical Positioning of Highway Assets

Capture of data and geographic positioning of assets, as well as GN22 condition surveys.



Electrical Testing

Trust Kiwa CMT for thorough and reliable testing, ensuring compliance with the Health and Safety at Work Act and BS 7671:2018 guidelines.



Inspection of Concrete Columns

Using guidance from GN22 our team can inspect concrete columns and provide clear recommendations.



Assessment for Column Attachments

CMT inspect, test and provide calculations in accordance with BS EN 40 to determine the columns capacity to carry additional loading in the form of attachments.



Load Testing of Catenary Wire Anchor Points

Experienced technicians and calibrated load test equipment to give an assessment of the fixing and substrate material. Approved and members of the Construction Fixings Association.



Other NDT Services

CMT offer a whole spectrum of testing in Concrete, Chemistry, Geotechnical, Structures and Geo-environmental areas.

Non-Destructive Structural and Electrical Testing & Inventory Data Capture



CMT 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 Guidance Note 22/19 (GN22) Asset-Management Toolkit: Minor Structures (ATOMS) as being at risk. Kiwa CMT 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).

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. (See table 1).

Table 1: Loss of Section Units (LSU's)

Category	Kiwa CMT Class	Average LSU's (estimated % Loss)	Recommendations
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



"We have contracted Kiwa CMT to carry out the structural testing of our street lights and illuminated signs for many years, and we have always received a very high level of problem free service. Testing has always been carried out to agreed timescales and the reports received are always excellent and easy to understand."

Mike Cunningham
Street Lighting
Service Manager
Warwickshire County Council



Non-Destructive Structural and Electrical Testing & Inventory Data Capture

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 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.

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.

Periodic Electrical Testing for Lighting Columns

Kiwa CMT is excited to announce an additional service of periodic electrical testing of lighting columns to our sought-after suite of services. This now forms an essential and comprehensive service package for the highway lighting industry, including structural testing, data collection, analysis for attachments, and the newly introduced electrical testing.

By choosing Kiwa CMT, you benefit from a single, trusted supplier that ensures all aspects of lighting column safety and compliance are seamlessly

covered. Our holistic approach provides a one-stop solution, simplifying the process and ensuring consistency across all services.

Our technicians are fully trained to the Highway Electrical Registration Scheme (HERS) standards and comply with the National Highway Sector Scheme 8 (NHSS 8).

Trust Kiwa CMT for thorough and reliable testing, ensuring compliance with the Health and Safety at Work Act and BS 7671:2018 guidelines.



Concrete Columns

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 to gain a classification / recommendation of the overall condition.

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 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 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. Approved and members of the Construction Fixings Association.

Additional CMT Services

Kiwa CMT 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 six principal departments: Concrete, Chemistry, Geotechnical, Structures, Geo-environmental and Lighting, 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.

- **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**
- **Barrier testing at sports stadia**

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