

Structural Investigations

The Materials Testing Division of ESG provides independent structural condition surveys, non-destructive investigations, laboratory testing and structural monitoring throughout the UK. Our experienced teams support architects, engineers, property owners and contractors and are qualified to work 'at height', within confined spaces, over water and on the rail or highway infrastructure.

With over 30 years experience we are able to effectively establish the condition, construction detail and physical and chemical properties of a structure or element and provide factual, interpretative or forensic reports.

ESG understands that the design and approach of a survey or investigation will depend on the type of the structure, the construction material and the reason for the assessment, for example, demolition, refurbishment or repair. Our teams assess bridges, tunnels, high-rise buildings and marine structures, whether they are constructed of timber, metal, concrete and/or masonry.

Areas of expertise include:

- Asbestos testing and surveys
- Coating and paint surveys
- Condition surveys
- Consulting & advice
- Laboratory testing
- Material sampling
- Metallurgical and mechanical investigations
- Structural investigations



Structural Investigations

As the UK's largest independent construction materials testing laboratory we understand that quality assurance is vital. ESG's wide scope of structural sampling and testing methods is based upon current British and European Standards and is accredited by UKAS to comply with ISO/IEC 17025, the management standard for testing and calibration laboratories. In addition, our quality management system meets the principles of ISO 9001:2000 and we hold 'Link-Up' accreditation.

Asbestos Testing and Surveys

The new asbestos survey guide, HSG 264, which replaces the existing guide for bulk sampling of asbestos in commercial and domestic properties (MDHS 100) was released on 29th January 2010. ESG provides Management and Refurbishment/ Demolition surveys, air monitoring and laboratory testing.

Coatings and Paint Surveys

Prior to the refurbishment or demolition of a structure it is usually necessary to determine the composition of paints and coatings. A coatings survey can comprise the recovery of full depth samples for subsequent chemical analysis or, if suitable, a portable XRF is utilised to immediately establish the composition of the coating. In addition, our experts carry out coating depth and fire protection assessment and our laboratories utilise scanning electron microscopes to determine the composition of each individual coating layer.

Condition Surveys

We undertake external and internal structural condition surveys to identify defects and establish the size, type and number of structural elements. These teams liaise with our structural investigation teams when further sampling and testing is required.

Consulting and Advice

Our experts work closely with consulting engineers and property owners to establish the causes or mechanisms of failure and recommend subsequent remedial options. Part of this service includes works supervision and strength evaluation.

Laboratory Testing

ESG's in-house chemistry and construction material laboratories carry out various tests to identify the chemical, physical and strength characteristics of a material or an element. Typical tests include compressive strength, load tests, chloride ion and high alumina cement (HAC) content and petrographic analysis.

Material Sampling

As an independent organisation ESG is often employed to recover material samples for subsequent analysis and/ or assessment. Our field teams are based throughout

the UK and can sample a diverse range of material types, such as steel, timber, concrete, brick and mortar. Methods of recovery include diamond tipped coring, dust sampling and 'coupon' cutting.

Metallurgical and Mechanical Investigations

ESG has extensive experience of insitu and laboratory metallurgical and mechanical tests for ascertaining material characterisation and identifying likely reasons for product failure. In addition, we offer welder approval, chemical analysis of raw materials and product testing.

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From motorway bridges to high-rise buildings and timber piers our teams offer a wide range of investigation options. Methods available include digital video endoscope, ferroskan, rebound hammer and ½ cell potential surveys, post tension duct inspection and grout sampling and depth of chlorination (DOC) assessments. Our highly trained field teams operate throughout the UK and Ireland and are qualified to work in the majority of site environments, such as the rail sector and within confined spaces.

Additional Services

In addition to structural services ESG is able to provide geo/environmental site investigations and deliver environmental and occupational monitoring, such as vibration, noise and air quality.

For More Information

If you would like more detailed information on the services that ESG provides please do not hesitate to call us on 0845 603 2112. Alternatively, please email sales@esg.co.uk and a member of our team will contact you directly.