

ALFRED H KNIGHT

Inspect. Test. Trust.



ALTERNATIVE FUELS

SPECIALISTS IN SAMPLING AND ANALYSIS



FIRST ESTABLISHED IN 1881, **ALFRED H KNIGHT** IS A LEADING PROVIDER OF INSPECTION AND TESTING SERVICES FOR THE ALTERNATIVE FUELS SECTOR. OUR ENERGY SERVICES DIVISION OPERATES GLOBALLY, WITH A WELL-EARNED REPUTATION FOR PROVIDING RELIABLE, PROFESSIONAL SERVICES.

ABOUT US

Alfred H Knight provide independent, specialist, services for a wide range of alternative fuels, including: Biomass, Municipal Solid Waste, Refuse Derived Fuel and Solid Recovered Fuel.

Our unrivalled expertise in inspection, analysis and technical consultancy enables us to support businesses in uncovering the true potential of their material.

CERTAINTY THROUGH INSPECTION

We provide our clients with certainty through quality and quantity supervision of bulk, bagged and containerised cargo. Our inspectors operate at crucial points in logistic chains, such as loading and discharge ports, warehouses, refineries and Waste to Energy facilities.

ACCURATE TESTING AND ANALYSIS

We operate a global network of accredited laboratories, specialising in the commercial testing and analysis of alternative fuels.

With over 140 years' worth of experience in analysis, a high standard of technical expertise and continued investment in our people and equipment, our labs are able to provide an accurate and efficient service.

EXPERTS YOU CAN TRUST

Trust is an integral part of our company values. As a family-owned business, we have built lasting relationships with our clients for over 140 years.

We have extensive experience working with major clients in the wood pellet, biomass agricultural and forestry sectors and are proud to work with a number of Sustainable Biomass Partnership (SBP) members in the field.





GLOBAL EXPERTISE

Our technical experts are based in strategically placed hubs around the world, with specialist UKAS accredited laboratories. This allows them to deliver an accurate and efficient service.





WASTE & RECYCLING

Waste to energy plays a huge part in a circular economy, diverting waste from landfill and providing a sustainable alternative to fossil fuel. Through understanding the composition of waste material, we can maximise its potential.

SPECIALISTS IN WASTE AND SOLID FUELS

Alfred H Knight are specialists in the sampling and analysis of Municipal Solid Waste (MSW), Refuse-Derived Fuel (RDF), Solid Recovered Fuel (SRF) and Commercial and Industrial Waste (C&I).

This includes waste wood, solid non-hazardous industrial and household waste or any material that meets the standard BS EN 15359.

UKAS ACCREDITED LABORATORIES

Our strategically placed UKAS-accredited laboratories are able to undertake sampling and analysis of SRF and RDF to BS EN ISO 21645:2021 and BSEN 15400 standards, offering a quick and efficient turnaround time.

ZERO WASTE TO LANDFILL

Our services enable Waste Management Companies, Councils and Operators to get a full understanding of their waste streams, whilst ensuring that they are compliant with the Zero to Landfill obligation.

We understand that all facilities are unique, which is why we tailor our services to individual client requirements.

INCLUDING:

- SOLID RECOVERED FUELS
- REFUSE DERIVED FUELS
- MUNICIPAL SOLID WASTE
- COMMERCIAL & INDUSTRIAL WASTE

OUR SERVICES:



ANALYSIS

- Moisture Content
- Bulk Density
- Ash Analysis and Ash Fusion Characteristics
- Loss on Ignition
- Major and Minor Elements
- Volatiles (VOC'S)
- Ultimate Analysis including Carbon, Hydrogen, Nitrogen, Oxygen and Sulphur contents
- Organic, Inorganic and Fixed Carbon
- Gross and Net Calorific Value
- Chlorine, Fluorine, Bromine and Iodine
- Biogenic Content by Carbon, Calorific Value, Mass and OFGEM Template methodology
- Heavy Metals
- Pentachlorophenol
- Alkalinity (Irritant and Corrosive materials)
- pH
- Carbonate Content
- IBA metals
- Ferrous and Non Ferrous Metals testing

INSPECTION

- Quantifying the recyclable content of household waste
- Determining the BMW content of residual household waste
- Detailed analysis of packaging materials in commercial waste
- Characterisation of household waste using detailed material categories

TECHNICAL CONSULTANCY

- Sample Planning
- Mass and Materials Balance
- Energy Balances
- Tender Evaluation
- Procurement of Plant Processes
- Advise on Technical Specifications and Design Waste Treatment Facilities



We are specialists in the sampling and analysis of RDF, SRF and MSW such as waste wood, solid non-hazardous industrial and household waste or any material that fits the requirements of standard BS EN ISO 21640:2021.

PROUD MEMBERS OF:





WASTE SERVICES

WASTE ACCEPTANCE CRITERIA (WAC)

In accordance with the Landfill Regulations (2005), Waste Acceptance Criteria (WAC) Testing is mandatory by law. This means that all organisations have a responsibility to dispose of hazardous waste.

Your business is legally obligated to dispose of potentially harmful waste appropriately. This means you must determine what landfill your material should go to.

Alfred H Knight Energy Services collaborate with accredited partners to carry out different types of WAC testing based on the classification of the waste. Our strategically placed hubs mean we can operate globally, such as Europe where WAC Testing is a standard.

With over 30 years' experience in the testing of alternative fuels, we are trusted specialists in the management of waste.

Our clients range from power stations to recycling companies and we are always at hand to offer technical and sampling advice to our clients should it be required.

TO ENSURE YOUR WASTE IS DISPOSED OF CORRECTLY, IT'S VITAL THAT YOU GET YOUR ADVICE FROM A SPECIALIST LABORATORY YOU CAN TRUST.

WASTE COMPOSITION ANALYSIS

DID YOU KNOW, THE COMPOSITION OF YOUR WASTE MATERIAL AFFECTS THE OVERALL VALUE OF YOUR COMMODITY?

Our compositional analysis services can provide you with an accurate and reliable understanding of the make-up of your waste material.

When categorising waste streams into material types, we tailor our support to our client's requirements with appropriate levels of detail.

We also offer comprehensive size analysis, which is crucial for monitoring the performance

and the effective design of mechanical waste treatment facilities.

Our independent testing can therefore determine the efficiency of screening operations. The two services can be utilised together to provide insight into which materials are present for a range of size fractions.

RENEWABLE ENERGY GUARANTEES OF ORIGIN (REGO)

We are proud to support members of Ofgem's Renewable Energy Guarantees of Origin (REGO) scheme.

We help businesses determine their Fuel Mix disclosure, supporting them in their REGO accreditation.



INCINERATOR BOTTOM ASH (IBA)

DO YOU KNOW THE VALUE OF YOUR INCINERATOR BOTTOM ASH?

The Incinerator Bottom Ash (IBA) left behind by incineration at EfW plants is often recycled for the construction industry, however it is possible to recover trace amounts of precious metals such as gold and silver within your IBA and generate further revenue for your organisation.

As part of the circular economy, recovering metals from IBA is more environmentally friendly than virgin resources and the metal fractions are a sought after feedstock of smelters.

IBA represents another example of AHK working ambitiously as part of the Circular Economy.

Our dedicated metals team is experienced in sampling and assaying IBA streams for commercial settlement.

We most frequently run Au, Ag, Pd, Cu, Pt, Pb and Zn analysis on the non-ferrous fraction of your waste stream and can deliver accurate and transparent results globally from our UKAS accredited laboratories.

- **CONTRIBUTE TO A CIRCULAR ECONOMY**
- **GENERATE FURTHER REVENUE**



BIOMASS

Biomass is at the forefront of an international move towards renewable and sustainable energy. Through regular analysis of your material, you can maximise the potential output of your biomass fuel, and in turn its value.

CERTAINTY THROUGHOUT THE GLOBAL SUPPLY CHAIN

Our services ensure high quality and consistent products for global producers and consumers of Biomass fuels. We perform analysis to enable clients to comply with international standards such as EN and ISO.

MAXIMISE YOUR FUEL POTENTIAL

We only provide you with the most accurate result when determining the Gross & Net Calorific Value of your material, meaning you are absolutely clear on your fuel's potential.

DEDICATED, PERSONAL SERVICE

Alfred H Knight operate a dedicated technical service with a wealth of practical industry knowledge in sampling, supervision and testing of biomass, which our clients know and trust.

We provide a personalised service to our clients, adjusting to their requirements as necessary.

INCLUDING:

- RECYCLED WOOD
- WOOD PELLETS/ CHIPS
- ENERGY CROPS
- AGRICULTURAL RESIDUES

OUR SERVICES:



ANALYSIS

- Total Moisture
- Ash Content
- Calorific Value, Gross and Net
- Bulk Density
- Particle Size Distribution of Disintegrated Pellets
- Carbon, Oxygen, Hydrogen and Nitrogen
- Volatile Matter
- Particle Size Distribution
- Mechanical Durability Pellets
- Total Sulphur
- Total Chlorine (and Fluorine, Bromine, Iodine)
- Heavy Metals
- Determination of Ash Melting Behaviour
- Determination of Fines Content in Quantities of pellets
- Determination of Elemental Composition
- Westinghouse Test

INSPECTION

- Cargo Superintendence
- Draught Survey
- Hold Cleanliness Inspection
- Stockpile Inspection
- Sampling
- Sample Preparation
- Field Testing
- Hose Test Supervision
- Auto-Sampler Bias Testing

TECHNICAL CONSULTANCY

- Sampling Protocol
- Sampling Procedures
- Sampling Regimes
- Preventative Maintenance
- Performance Testing
- Sampling Plans
- Field/On-site Testing
- Process Audit



We assist clients to determine the quality of their biomass fuels and enable biomass stations to meet and report against particular sustainability criteria so that they are eligible for Renewables Obligation Certificates (ROCs).

PROUD MEMBERS OF:



RENEWABLE HEAT INCENTIVE (RHI)

ARE YOU RECEIVING THE RENEWABLE HEAT INCENTIVE?

For businesses taking part in the Non-Domestic Renewable Heat Incentive (RHI) Scheme, feeding your biomass boiler with incorrect fuel could cause irreparable damage to your equipment and affect your RHI payments.

It's important that the fuel you are using meets the requirements set by Ofgem, which is why we provide a simple, ongoing fuels testing service to provide certification of your biomass and full transparency of your fuel on a quarterly basis.

Alfred H Knight is at the forefront of providing accredited fuel sampling and testing services, with a highly experienced division dedicated solely to biomass and waste wood.

- MEET YOUR RHI REQUIREMENTS
- PROTECT YOUR INVESTMENT
- MAXIMISE FUEL PERFORMANCE
- PROTECT THE ENVIRONMENT

We operate a number of specialist laboratories and hubs for UKAS accredited wood based fuel testing, and have been providing certification for biomass and waste wood fuel in line with Ofgem's requirement since the scheme started.



OUR SERVICES

ANALYSIS

- Total Moisture
- Ash Content
- Moisture Content
- Gross Calorific Value
- Net Calorific Value
- Carbon, Hydrogen
- Volatile Matter
- Nitrogen
- Oxygen
- Sulphur
- Chlorine
- Biomass Content
- *Further parameters available

SAMPLING

- Sample Preparation
- Sample Size

TECHNICAL CONSULTANCY

- Environmental compliance
- Advice for meeting on going compliancy obligations for the RHI
- Fuel recording
- Environmental regulatory and permitting support



We maintain rigorous quality standards to ensure that all our operations provide the highest level of service to our clients. We achieve this through compliance with industry standards and regulations, including ISO/IEC 17025 and ISO 9001.



CONTACT US

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