

## THERMAL IMAGING CAMERA

Thermal Imaging is a new service offered by the Lancs BEA.

An infra red camera can be used to show problems with:

- Building inspection
- Steam pipe lagging
- Oven door seals
- Electrical inspection
- Motors
- Pumps

Thermal Imaging is useful because:

- It is non-contact, using remote sensing
  - keeping the user out of danger
  - not intruding upon or affecting the target
- It is two-dimensional
  - comparison between areas of the target is possible
  - the image allows for excellent overview of the target
  - thermal patterns can be visualised for analysis
- It is real time
  - enabling very fast scanning of stationary targets
  - enabling capture of fast moving targets
  - enabling capture of fast changing thermal patterns



Thermal Imaging Camera

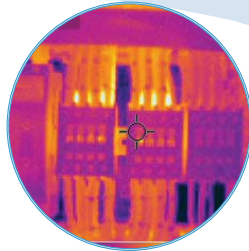


Photo shows the overheating of an electrical control panel which could indicate a loose connection

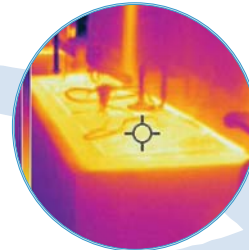


Photo shows poor insulation of a tank lid allowing heat loss. This increases the running cost of the plant as a result of increased energy consumption in keeping the contents of the tank up to the correct temperature

In addition, more and more insurance companies are asking, as part of the Fire Risk Assessment, for inspections of circuit boards, motors and pumps. Thermal imaging can show any over-heating of these appliances which, if not detected and fixed, could start a fire.

The camera can be hired on a weekly basis or a BEA advisor can come on site and carry out the monitoring service.

For more information on how your business might benefit from a Thermal Imaging survey contact Geoff Richards on 01254 669022

## LANCS BEA MONITORING SERVICES

- ★ Portable Appliance Testing
- ★ Noise Assessments
- ★ Audiometry Tests
- ★ On Site Vibration Testing of Plant, Vehicles, Tools and Equipment
- ★ HAV and WBV Management Systems
- ★ Compressed Air Leak Detection

For more information on any of these monitoring services contact Geoff Richards on Tel: 01254 669022 or Email: [geoffrey.richards@groundwork.org.uk](mailto:geoffrey.richards@groundwork.org.uk)

# MONITORING SERVICES

## PORTABLE APPLIANCE TESTING

Electricity can kill. Each year about 1000 accidents at work involving electric shock and burns are reported to the Health & Safety Executive. About 30 of these are fatal.

Faulty electrical appliances and leads are the main cause of accidental fires in commercial buildings, representing over a quarter of all such fires.

If your working environment or property has any electrical appliances with a mains voltage plug attached, you have a duty to comply with a number of regulations.

Portable Appliance Testing (PAT) is the best way you can fulfil this obligation. Failure to implement a programme of Portable Appliance Testing can also have insurance implications.

The Lancashire BEA offers a PAT testing service with prices for testing as follows:

- >1000 = £1.20 + VAT per item
- 250 – 1000 = £1.54 + VAT per item
- 101 – 249 = £1.80 + VAT per item
- 51 – 100 = £2.00 + VAT per item
- 0-50 = £2.40 + VAT per item

## COMPRESSED AIR LEAK DETECTION

Leaks can be a significant source of wasted energy in an industrial compressed air system, sometimes wasting 20-30% of a compressor's output. It is not only a direct source of wasted energy, but also an indirect contributor to increased operating costs.

As leaks increase, system pressure drops, air tools function less effectively and production can be affected.

Often the solution taken by businesses is to increase generation pressure to compensate for the losses. However the first step in tackling leaks should be to have a compressed air leak detection survey carried out.

This can be undertaken by a Lancashire BEA advisor at a time to suit you. Our monitoring system is designed to be used during the working day without any interruption to production.

Here are some quotes from BEA members who have used the service so far.

**Donna Singleton, Senior QMS, HSE Officer, Brookhouse Holdings Ltd.**  
 "We found it to be very useful. We managed to get the faults repaired. The survey was very worthwhile." Savings £4,200 per year.

**Trevor Hogg, EHS Manager, Promat UK**  
 "We have implemented all [of the report's] recommendations. We are saving a fortune."

**Liz Pickles, Environmental Systems Manager, Hycrome (Europe) Limited**  
 "We found it very useful indeed. All of the leaks have now been fixed." Savings of approximately £20,000 per year.

**Helen Evans, Health, Safety & Facilities Manager, Promethean Ltd.**  
 "We found the report and services very useful." Savings of £6,000 per year.

### IN THIS ISSUE

- Portable Appliance Testing
- Compressed Air Leak Detection
- Noise Assessments
- Energy Monitoring Equipment
- Hand Arm Vibration
- Whole Body Vibration
- Lighting Levels Assessment
- Thermal Imaging Camera

### CONTACT

For more information on any of the monitoring services within this bulletin, or to book a service, contact  
 Geoff Richards on  
 Tel: 01254 669022.

## NOISE ASSESSMENTS

Under the Noise at Work Regulations 2005 the exposure levels have been reduced to the following action levels:

Lower exposure action values:-

- Daily or weekly exposure of 80dB
- Peak sound pressure of 135dB

Upper exposure action values:-

- Daily or weekly exposure of 85dB
- Peak sound pressure of 137dB



A noise assessment will help you identify what your noise levels are and where you need to start making changes to the working environment.

### Costs

The cost of a noise assessment starts from as little as £400 per day.

### Audiometry Testing

If your noise assessment shows daily or weekly exposure levels of 85dB or above you must provide health surveillance (hearing checks).

You must also provide health surveillance for employees who are at risk for any reason, e.g. if they already suffer from hearing loss or are particularly sensitive to damage from noise.

The purpose of health surveillance is to:

- Warn you when employees might be suffering from early signs of hearing damage.
- Give you an opportunity to take action to prevent the damage getting worse.
- Check that control measures are working.

Health surveillance for hearing damage usually involves:

- Regular hearing checks in controlled conditions.
- Telling employees about the results of their hearing checks.
- Keeping health records.
- Ensuring employees are examined by a doctor where hearing damage is identified.

If you have a quiet room, audiometry tests can even be carried out by the Lancs BEA on your own premises.



### Costs

- Under 20 people will be charged at £22 per person
- More than 20 people will be charged at a daily rate of £450
- Travel will be charged at 40p per mile

If you would like to arrange a Noise Survey or an Audiometry Test please contact BEA Advisor Geoff Richards on 01254 669022.

## ENERGY MONITORING EQUIPMENT

This equipment measures electrical parameters such as kW, kVA and power factor on individual machines and main distribution centres.

Staff from the Business Environment Association's Resource Efficiency Team will install the monitoring equipment with assistance from the company's site electrician. It is then left on site for up to one week to record half hourly information.

This information is then put into a report to include a summary report showing:

- The number of kWh's used each day
- A summary graph, showing the total kW drawn down by the equipment each day.
- Daily graphs showing half hourly data in detail allowing anomalies to be identified.

The equipment is available to all companies in Lancashire with reduced rates for BEA members.

## HAND ARM VIBRATION (HAV)

Hand Arm Vibration Syndrome (HAVS) is a widespread recognised industrial disease affecting tens of thousands of workers. It is a disorder which affects the blood vessels, nerves, muscles, and joints of the hand, wrist and arm. Its best known effect is vibration-induced white finger (VWF).

The effects of repeated exposure include tingling 'whiteness' or numbness in the fingers (blood vessels and nerves). This may not be noticeable at the end of a working day, and in mild cases may affect only the tips of the fingers. However as the condition becomes more severe, the whole finger down to the knuckles may become white. Feeling may also be lost.

Individuals most at risk are those whose jobs require regular and frequent use of vibrating tools and equipment. Such jobs are found in a wide range of industries. There are hundreds of tools which can expose operators to hand-arm vibration, and hence put them at risk of developing HAVS.

The tools that can lead to the development of HAVS include:

- Angle grinders
- Orbital sanders
- Chainsaws
- Hammer drills

With an increasing amount of legislation concerning human exposure to vibration, many companies are faced with the challenge of determining which information is correct and up to date. This can be somewhat confusing.

To successfully protect your workforce from the effects of Hand Arm Vibration it is vital that you, the employer, have an effective Hand Arm Vibration Management System in place, to measure, monitor and, crucially, prevent any risks associated with Hand Arm Vibration.



## WHOLE BODY VIBRATION (WBV)

Whole Body Vibration (WBV) is caused from small vibrations passing through the body via machinery.

The most commonly reported injury relating to Whole Body Vibration is back pain. Exposure to Whole Body Vibration can cause a complex distribution of oscillatory motions and forces within the body, causing unpleasant sensations which can amount to discomfort and aggravation. The longer the exposure time the greater the chance an employee will suffer back injury.

Whole Body Vibration can be caused by:

- The movement of the wheels or tracks of a vehicle or mobile machine crossing an uneven or rough surface.

- Using mobile machines to excavate holes or trenches.
- Using mobile machines to load materials (e.g. sand) into lorries.
- The operation of large static compaction, hammering or punching machines, such as hammer drills and mobile crushers.

To successfully protect your workforce from the effects of WBV it is vital that you, the employer, have an effective Whole Body Vibration Management System. In addition, ensuring drivers are well informed of the risks and the steps they can take to reduce their exposure, enables them to control their own exposure time.

## LIGHTING LEVELS ASSESSMENT

By far the most common type of lighting query referred to the Health & Safety Executive is that associated with office-type environments.

The average recommended lighting levels for these areas should be between 250 and 400 lux dependent on the level of detailed work required.

Do you know if your lighting levels are sufficient? Why not let a BEA Advisor come on site and check your levels of light?

If we find that your lighting levels are too high, you might be able to take out some light bulbs which could help reduce your energy usage.