

## Expert training in thermal measurement

Become a true expert: receive training at Hukseflux

Many companies use Hukseflux measuring systems when testing for third parties. Hukseflux helps to gain the necessary experience by offering operator training. Training vastly improves the level of service to the third party, the efficiency of working with the equipment, and reduces the uncertainty of the end result. It will make the operator a true expert.

## Introduction

Many parties use Hukseflux measuring systems to supply their own material characterisation and testing services. The most common services are thermal characterisation of soils and of building envelopes. The measurements and the analyses that have to be performed are not straightforward; although the measurements are standardised, this always involves a significant element of expertise and a subjective data interpretation. Hukseflux helps to gain the necessary experience by offering operator training.

Training vastly improves the level of service to the end user, the efficiency of working with the equipment and reduces the uncertainty of the end result. The table below provides an overview of the main training characteristics. Please contact us for more information on training courses in thermal measurement at Hukseflux.



**Figure 1** On-site measurement of building envelope thermal resistance

	Soil thermal testing / material characterisation	Building envelope thermal testing / characterisation
Application	On-site thermal route surveys	Measurement of R and U-values of walls
	Laboratory testing of soils	
Applicable standard	ASTM D 5334-(08), IEEE 442-1981 (03)	ISO 9869, ASTM C1155 / C1046
Equipment	FTN02	TRSYS01
	MTN02	HFP01
	TPSYS02	
Topics	Theory, standardisation	Theory, standardisation
	Performing measurements	Performing measurements
	Quality assurance	Quality assurance
	Data analysis, uncertainty evaluation	Data analysis, uncertainty evaluation
	Comparison of measured to expected results	Comparison of measured to expected results
	(feasibility assessment)	(feasibility assessment)
	Reporting	Reporting
Aim	To provide better reports in less time	To provide better reports in less time
	To prevent unnecessary errors	To prevent unnecessary errors
Duration	Elementary course 2 days	Elementary course 2 days
	Advanced course 3 days	Advanced course 3 days

 Table 1 Training in soil / building envelope thermal testing





Figure 2 FTN02: one of the available measuring systems



Figure 3 Soil thermal analysis: on-site route survey

## See also

- Our product line of thermal conductivity measurement equipment
- Our other testing- and thermal engineering and consultancy services

## About Hukseflux

Hukseflux Thermal Sensors offers measurement solutions for the most challenging applications. We design and supply sensors as well as test & measuring systems, and offer related services such as engineering and consultancy. With our laboratory facilities, we provide testing services including material characterisation and calibration. Our main area of expertise is measurement of heat transfer and thermal quantities such as solar radiation, heat flux and thermal conductivity. Hukseflux is ISO 9001:2008 certified. Hukseflux sensors, systems and services are offered worldwide via our office in Delft, the Netherlands and local distributors.

> Need more information? E-mail us at: info@hukseflux.com