

To: Laboratories participating in ProfTest Syke proficiency tests

## Proficiency test CAL 08/2024 – Gross and net calorific values of solid fuels

ProfTest Syke will organize a proficiency test (PT) for the analysis of gross and net calorific value of solid fuels.

The purpose of this proficiency test is to ensure the comparability and accuracy of the results of the participants. Depending on the measurement, 10 to 20 laboratories are expected to participate in the proficiency test. The organizing of this proficiency test is included in the accreditation scope ([finas.fi/sites/en](https://finas.fi/sites/en)) with the exception of Cl and F measurements.

### Sample matrices

Peat, wood pellet, biofuel, and coal.

### Timetable

Registration	<b>10 June – 20 August 2024</b>
Sample dispatch date (national participants)	3 September 2024 (see Chapter 4 <i>Sample delivery</i> )
Analysis of the samples	at the latest on 30 September 2024
Reporting of the results	<b>4 September – 1 October 2024</b>

### Participation fee

The participation fee is **980 €** (+ VAT) including all measurements and samples.  
See detailed information in Chapter 9 *Participation fee*.



Mirja Leivuori,  
Group manager, Coordinator



Riitta Koivikko,  
Substitute for coordinator

ProfTest Syke is proficiency testing provider PT01  
(EN ISO/IEC 17043:2010) accredited by FINAS  
(Finnish Accreditation Service, [finas.fi/sites/en](https://finas.fi/sites/en)).



## Organizing the proficiency test

### 1 Organizer

ProfTest Syke, Finnish Environment Institute (Syke)  
Address: Mustialankatu 3, FI-00790 Helsinki, Finland  
Email: [profTest@syke.fi](mailto:profTest@syke.fi)

### Contact

Coordinator: Mirja Leivuori, tel. +358 295 251 366  
Substitute for coordinator: Riitta Koivikko, tel. +358 295 251 750  
Email: [firstname.lastname@syke.fi](mailto:firstname.lastname@syke.fi)

### Cooperation partner

Eurofins Environmental Testing Finland Oy, Jyväskylä (T039, [finas.fi/sites/en](https://finas.fi/sites/en))

### Analytical experts

Minna Salonen, Eurofins Environmental Testing Finland Oy, Jyväskylä  
Sähköposti: [firstname.lastname@eurofins.fi](mailto:firstname.lastname@eurofins.fi)

### Subcontracting

KVVY Tutkimus Oy (T064, [finas.fi/sites/en](https://finas.fi/sites/en)): Sample material homogenization and dividing into subsamples.

Eurofins Environmental Testing Finland Oy, Jyväskylä (T039, [finas.fi/sites/en](https://finas.fi/sites/en)): Homogeneity testing of samples.

## 2 Sample and measurands

The sample matrices in this proficiency test are: peat, wood pellet, biofuel (conifer bark, biomass EN ISO 17225-1; 1 Wood biomass ), and coal. Samples are dried and the sample amount is about 20 g. In this PT measurements of Cl and F are available for some of the samples. Samples and measurands are presented in Appendix 1.

## 3 Registration

The registration for this proficiency test is open until **20 August 2024**.

Registration is done via the electronic client interface, ProfTestWEB: [wwwp5.ymparisto.fi/Labtest/en](https://wwwp5.ymparisto.fi/Labtest/en). If there are problems when using ProfTestWEB or you need username and password, please contact [profTest@syke.fi](mailto:profTest@syke.fi).

## 4 Sample delivery

The sample dispatch day for national participants is **3 September 2024**. To ensure timely arrival, the samples are dispatched earlier for participants abroad.

If the sample package does not arrive **at the latest on 6 September 2024**, or there are missing and/or broken sample containers, please contact the provider immediately ([profest@syke.fi](mailto:profest@syke.fi)). More contact details in Chapter 1 *Organizer*.

## 5 Sample storage and analysis

The delivered samples are air dried at room temperature, and they should be kept dry and at the room temperature before measurements. **Samples are analysed within the laboratory where they are delivered to. Analyses are conducted according to the participant's normal procedures.** Replicated analyses should not be done more than according to the method of analysis or the instructions within the sample letter.

Samples are to be homogenized before measurements. **Analytical moisture content of the analysis sample should be measured first after storing samples for one day in the measuring laboratory (= the reported moisture content of the analysis sample  $M_{ad}$ ).** Moisture content of the analysis should be measured, additionally, during every measuring day. This is important in order to eliminate the influence of humidity from the measurement results.

Additionally, participants should estimate or calculate **the emission factor (EF) for the analysed peat and coal samples as on received basis**. The total **moisture contents as received ( $M_{ar}$ )** will be given for the samples by Profest SYKE along sample delivery.

Timetable for analyses is given in the front page of this letter.

## 6 Reporting the results

The participant results are reported to Profest Syke at the latest on **1 October 2024**. **The results are to be reported on dry weight basis.**

An electronic survey about the methodological backgrounds shall be reported to Profest Syke together with results.

Profest Syke delivers the preliminary results report to the participants at the latest in the week 42 (14 – 18 October 2024). The final report will be published at the latest in March 2025 and it is then available on ProfestWEB and on Profest Syke website ([syke.fi/profest/en](http://syke.fi/profest/en)). The availability of the report will be informed to the participants.

## 7 Assigned values and evaluation of the results

Either the calculated concentration (synthetic samples) or the robust mean, the median, or the mean of the results reported by the participants will be used as the assigned value for the measurand. The calculation of the assigned value is based on the results reported according to the given guidelines. Also, when needed, the result of the expert laboratory can be used as the assigned value. The evaluation of the results will be based on z scores. The preliminary standard deviation for proficiency assessment will be given in the cover letter of the sample. In special cases also  $E_n$  or  $D\%$  scores can be used for the performance evaluation.

## 8 Confidentiality

The results of participants are treated anonymously.

## 9 Participation fee

The participation fee is **980 €** (+ VAT) including all measurements and samples. The basic fee is **430 €** (+ VAT) and the fees for each sample and measurand are as follows:

Sample	Price, € (+ VAT)
Peat B1	140
Wood pellet B2	130
Biofuel (conifer bark) B3	140
Coal K1	140

The invoice will be sent after the delivery of the preliminary result report. If the participant orders additional samples, they are charged according to the prices listed above.

Note! In Finland the current VAT is 24 %. Further, if the invoicing address or any other additional information has to be corrected after the invoicing, the extra handling cost will be charged. The participant is also responsible for possible custom clearance or customs fee of the sample.

## 10 Appendices

### Appendix 1 Samples and measurands

## Appendix 1. Samples and measurands

Sample	Sample type	Measurands
B1	Peat	Gross calorific value ( $q_{V,gr,d}$ ) Net calorific value ( $q_{p,net,d}$ ) $C_d, Cl_d, S_d, H_d, N_d$ Analytical moisture content of the sample ( $M_{ad}$ ) Ash content ( $Ash_d$ ) Volatile matter ( $V_d$ ) Emission factor (EF)
B2	Wood pellet	Gross calorific value ( $q_{V,gr,d}$ ) Net calorific value ( $q_{p,net,d}$ ) $C_d, H_d, N_d$ Analytical moisture content of the sample ( $M_{ad}$ ) Ash content ( $Ash_d$ ) Volatile matter ( $V_d$ )
B3	Biofuel (conifer bark)	Gross calorific value ( $q_{V,gr,d}$ ) Net calorific value ( $q_{p,net,d}$ ) $C_d, Cl_d, S_d, H_d, N_d$ Analytical moisture content of the sample ( $M_{ad}$ ) Ash content ( $Ash_d$ ) Volatile matter ( $V_d$ )
K1	Coal	Gross calorific value ( $q_{V,gr,d}$ ) Net calorific value ( $q_{p,net,d}$ ) $C_d, Cl_d, F_d, S_d, H_d, N_d$ Analytical moisture content of the sample ( $M_{ad}$ ) Ash content ( $Ash_d$ ) Volatile matter ( $V_d$ ) Emission factor (EF)