12 June 2023

To: Laboratories participating in Proftest Syke proficiency tests

Proficiency test CAL 08/2023 – 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) with the exception of Cl and F measurements.

Sample matrices

Peat, wood pellet, biofuel, and coal.

Timetable

Registration	**12 June – 21 August 2023**
Sample dispatch date (national participants)	5 September 2023 (see Chapter 4 *Sample delivery*)
Analysis of the samples	at the latest by **3 October 2023**
Reporting the participant results	5 September – 4 October 2023

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).

Organizing the proficiency test

1 Organizer

Proftest Syke, Finnish Environment Institute Syke, Research infrastructure
Address: Mustialankatu 3, FI-00790 Helsinki, Finland
Email: 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

Cooperation partner

Eurofins Environmental Testing Finland Oy, Jyväskylä (T039, finas.fi)

Analytical expert

Minna Salonen, Eurofins Environmental Testing Finland Oy, Jyväskylä
Sähköposti: firstname.lastname@eurofins.fi

Subcontracting

Sample homogenization and dividing into subsamples, KVVY Tutkimus Oy, Tampere (T064, finas.fi/sites/en)

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

2 Sample and measurands

The sample matrices in this proficiency test are: peat, wood pellet, biofuel (logging residues, coniferous, 1.1.4: EN ISO 17225-1), and coal. Samples are dried at room temperature and the sample amount is about 20-25 g. In this round measurands Cl and F are available from some samples. Samples and measurands are presented in Appendix 1.

3 Registration

The registration for this proficiency test is open until **21 August 2023**.

Registration is done via the electronic client interface, ProftestWEB: wwwp5.ymparisto.fi/Labtest/en. If there are problems when using ProftestWEB or you need username and password, please contact proftest@syke.fi.

4 Sample delivery

The sample dispatch day for national participants is **5 September 2023**. To ensure timely arrival, the samples are dispatched earlier for participants abroad.

If the sample package does not arrive **at the latest on 8 September 2023**, or there are missing and/or broken sample containers, please contact the provider immediately (proftest@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. Analysis is conducted according to the participant's normal procedures.** Replicated analysis should not be done more than according to the method of analysis or the instructions within the sample letter.

Samples have 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 (Mar)** will be given for the samples by Proftest SYKE along sample delivery.

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

6 Reporting the participant results

The participant results are reported to Proftest Syke at the latest on **4 October 2023**. The results are to be reported on **dry weight basis.**

7 Assigned values, evaluation of the results, and the result reports

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.

Proftest Syke delivers the preliminary result report to the participants latest in the week 42 (16 – 20 October 2023). The final report will be published at the latest in March 2024 and it is then available on ProftestWEB and on Proftest Syke website (syke.fi/proftest/en). The availability of the report will be informed to the participants.

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 (logging residues, coniferous) 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 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 (logging residues, coniferous)	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)