The Compost Certification Scheme interpretation of PAS100, Compost Quality Protocol and the CCS Scheme Rules requirements

This document has been developed to assist you to comply with the Compost Certification Scheme requirements. The aim of this note is to provide clarification on some of the technical aspects of PAS100, CQP and the CCS Scheme Rules (latest version). The interpretation given in this document have been discussed and agreed with the certification bodies and their inspectors.

Please note that this is an open document and we will add new sections when required.

We recommend that you liaise with your certification body if you need any further clarification.

1 Temperature monitoring system calibration

Clause 8.3 of PAS100 states: 'The composter's appropriate QMS document(s) shall:

a. state the routine frequency and procedure for checks on the temperature monitoring system, those carried out by the composter and any carried out by an organization independent of the composter;'

Annex 1 of CCS Scheme Rules (version 7) provides clarification that:

'Calibration of equipment used for monitoring temperature shall be carried out at least once per year by an independent third party calibration service provider.'

REAL CCS's interpretation

Based on the outcome of the consultation with CCS TAC and the comments provided, clause 8.3 of PAS100 should be interpreted as follows:

The monitoring system, not each single part of the system, needs to be independently calibrated e.g. the composter could send one probe for independent calibration and check all other probes against the calibrated probe. However the whole monitoring system needs to calibrated (not just the probes). The composter need to keep paperwork/records to demonstrate that this had been done, to the satisfaction of the CB auditor.

The equipment should be calibrated according to the manufacturer's instructions.

April 2015

2 Sampling procedures & hand sieving under specific circumstances

Clause 12.1 of PAS 100:2011 states: 'Any batch of the composter's principal compost grade selected for sampling and testing (see Clause 13) shall be sampled and sent for testing:

a. during the week after the batch has completed the minimum composting process applicable to the grade (including a maturation step if applicable);
b. after particle size screening, if applicable [see Note to 9.1 item a)]; and
c. before any blending with wastes, materials, composts, products or additives.

When looking at the definition of screening in PAS 100, this says:

Clause 12.2 states: 'each sample shall be representative of the compost batch from which it is obtained'.

Clause 3.58 defines screening (of composted material) as:

'Process stage that separates compost particles according to their size, in order to achieve one or more separate grades of compost in terms of particle size range'

REAL CCS's interpretation

Based on the above clause, our interpretation is that:

Hand sieving is not specifically referred to or included in the above clauses of PAS 100, which suggests it was not intended to be routinely allowed.

However we consider that, under exceptional circumstances (extreme weather conditions, screen breakdown, considerable space constraints etc.) and following consultation with the relevant CB, hand sieving should be allowed to be carried out for the purpose of sampling provided that:

a. the composter can demonstrate to the CB that the circumstances are exceptional;
b. any hand sieved sample is representative of the batch from which the sample is obtained, and reflects the characteristics of the relevant compost grade normally produced from the mechanical screening step. The type and shape of the holes, the shape of the mesh of the hand sieve must be equivalent to those of the mesh of the mechanical screen.
c. for batches that have been hand sieved, extra samples after mechanical screening must be sampled and tested to verify the content of physical contaminants.

April 2015

3 Stability testing exemption

Clause 14.3 of PAS100: 'Exemption from Table 3 item 10's stability test and upper limit for stability shall be allowed for an additional compost grade if it consists of particles too coarse to pass through a screen with 20 mm apertures (whether square, round or other shaped apertures).

NOTE An example is a coarse mulch grade of compost derived from particles that have passed through a screen with 40 mm apertures, from which most particles smaller than 20 mm are removed by passing through a screen with 20 mm apertures. Such a grade would have a nominal particle size range of 20 mm to 40 mm. If stability tested, its result is expected to be very low and certainly lower than stability results for any compost grade with a higher proportion of particles smaller than 20 mm, such as a 0 mm to 40 mm soil conditioning grade.'

REAL CCS's interpretation

Based on the above clause, our interpretation is that exemption from the stability test and limit is allowed under specific circumstances and following consultation with the relevant certification body, provided that;

a. the laboratory's reports of the particle size distribution test results for samples* of this grade show that it mostly 'consists of particles too coarse to pass through a screen with 20 mm apertures (whether square, round or other shaped apertures)',
b. the composter demonstrates to the certification body that the same appointed laboratory has been unable to stability test the samples* because each one contained insufficient particles of less than 20 mm (for example letters or emails from an appointed laboratory clearly stating that each sample of this grade contained fewer 20 mm particles than is necessary for undergoing the stability test), and
c. the certification body has reviewed all of the evidence and is satisfied that compost grade contains too few less than 20 mm particles to undergo the stability test.

* Regarding point a., b. and c., evidence must be provided and reviewed for a minimum of 3 samples, each taken from a different batch of the same grade of compost. A sufficient quantity of each sample must have been supplied to the laboratory.

Records of the laboratory's evaluations and each sampled and tested compost batch's results for the grade must be kept at the compost production site and made available to the certification body when requested.

We consider that a grade should not become permanently exempt after the certification body grants the initial exemption. This means that if the operator changes their screen

and/or screen settings, they should re-consider whether the grade could now undergo the stability test. This also means that an exemption confirmed in writing by the certification body is only valid for twelve months. Any renewal of an exemption for the same compost grade from the same production process must be based on evidence generated and evaluated during the corresponding assessment period.

November 2015

4 Sampling and testing during process validation / revalidation

Refer to clauses 4.5.3 and section 13 of PAS 100. Refer to clauses 15.1, 15.2, and 15.3 of PAS 100 and section V of the CCS Scheme Rules for non-conforming material.

REAL CCS's interpretation

Based on the above clauses, our interpretation is that during process validation or process revalidation, the full suite of PAS 100 tests need to be requested and three consecutive passes obtained on all PAS 100 parameters. However, if there is a failure on a parameter for one of the three different batches then the producer could test for just that failed parameter to achieve three passes in a row for that parameter. The producer has to continue sampling and testing more batches for the relevant parameters only, in accordance with clause 15 of PAS 100 until three passes in a row are achieved for each parameter.

Following process validation/revalidation, the testing regime would begin again from the point of validation of that particular parameter and in accordance with the minimum frequencies required in Table 2 of PAS 100 ('After validation').

Important note: only one sample can be tested representative of one batch. 'Retesting' cannot take place following a failure unless corrective actions have been implemented.

Example

One site is sampling and testing to verify the continued efficacy of their PAS 100 quality management system and compost compliance with PAS 100 minimum quality criteria. The producer decides to reduce their process time from 20 weeks to 8 weeks. This is considered a significant change by their certification body so they are required to revalidate their process and make changes to their quality management system. They then begin sampling and testing batches for the full suite of PAS 100 tests to achieve revalidation.

During process revalidation they had passed on all parameters, except *E. coli* on their third test report. So they begin their investigation to explore the cause for this failure. They discover that the sampling equipment had not been sanitised so they implement a corrective action on the process by introducing a sanitising step on their equipment and then they implement a corrective action on the failed batch by using the sanitized equipment for re-sampling. They then test for *E. coli* only on a sample taken from the failed batch, and they get a pass. Thus they are able to dispatch the initially failed batch as PAS 100 compliant. However, they need to test a further three samples in order to achieve three passes in a row for *all parameters,* as required. Since other parameters (not *E. coli*) have already achieved three passes in a row, they are required to test for *E. coli* only in the next three batches in order to achieve the full suite of passes.

Once three passes in a row have been achieved for *all parameters*, the process completed revalidation. The producer could then begin sampling and testing again to verify the continued efficacy of the revised PAS 100 quality management system in accordance to section 13 of PAS 100. They had to begin from the point of revalidation following three passes in a row for *E. coli*.

April 2018

5 Reprocessing oversize arising from the composting process

Note 2 under Clause 14.3 of PAS100 states: 'the oversize, woody particles that arise when screening compost can be dispatched for disposal, supplied for use as non-PAS 100 conforming material, or reprocessed if physical contamination is low or is reduced before reprocessing.'

REAL CCS's interpretation

BSI PAS 100:2018 does not list 'oversize' in its Terms and Definitions of Section 3. However, 'oversize' is considered to be the residual material that is left at the end of a composting process after separation of pre-defined grades. The oversize does not form part of any pre-defined grades and usually consists of large woody particles and residual contamination such as plastics.

As set in PAS 100 above, there are three options for dealing with oversize:

1. disposal,
2. dispatch as non-conforming material, or
3. reprocessing, providing the level of contamination is low or reduced.

Based on the above clause, our interpretation is that in order to reprocess oversize, it should be virtually free from contaminants such as plastics, and any other non-compostable materials. The assessment of oversize to establish the level of contamination before reprocessing should be carried out using the same input materials acceptance criteria. If the level of contamination is found to be high, it could be reduced in order to be able to accept the material back into the process as input.

August 2018

6 Splitting samples for pathogen testing

Clause 11.3 in PAS 100:2018 states: 'Each sample shall be representative of the compost batch from which it is obtained'. Refer also to Table 2 for the minimum frequencies for routine compost sampling and testing.

REAL CCS's interpretation

Based on the above clauses, our interpretation is that only single representative samples can be sent for analysis to an appointed laboratory and the approach of splitting representative samples for specific test(s) is not considered acceptable for certification purposes. Table 2 shows that for routine compost sampling and testing (both for and after validation), 1 sample should be taken for all relevant parameters.

A subsample of a single representative sample might not be representative of the whole and therefore it would not be compliant with PAS 100. Splitting samples on site and sending a subsample for specific test(s) also creates a situation where the subsample could be manipulated in order to pass the requirements of specific test(s) (e.g. pathogens).

To ensure these single samples are representative of the sampled batch, they should be taken in accordance with PAS 100 and the sampling guidance available on the CCS website at www.qualitycompost.org.uk/upload/files/f40_32_Compost_sampling_guidelines.pdf.

Subsampling of a representative sample for the various analytical tests is carried out by competent personnel at the appointed laboratory, following standard operating procedures.

August 2018

7 Principal compost grade

The definition of principal compost grade in clause 3.54 of PAS 100:2018 states: 'grade of compost for which PAS 100 conformance is claimed, or intended to be claimed, normally the one that is composted for the shortest total time and includes sufficient particles less than 2 mm to support plant germination and growth.

NOTE For example, the principal grade could not be a 10 mm to 40 mm mulch grade because it would not contain the fine particles that are necessary for plant response and weed seed tests. Although not necessarily made from every batch of compost production, the principal grade should be made on a frequent basis and the quantity made over a year should be at least as much as any additional compost grade (see 3.4) for which PAS 100 conformance is claimed.'

REAL CCS's interpretation

Based on the above definition, our interpretation is that the principal grade should be produced in larger to or equal quantities over a year as any additional compost grades, and contain sufficient fine particles to support plant growth. Additional compost grade(s) should not be produced in larger volumes than the principal compost grade.

August 2018