Dutch Accreditation Council (RvA)

Accreditation of sampling

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A current version of the Explanatory notes is available through the website of the RvA. (www.rva.nl).

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1 Introduction

The RvA has accredited a number of organisations for sampling. This can be inspection bodies with an accreditation based on EN ISO/IEC 17020 as well as test laboratories with an accreditation based on EN ISO/IEC 17025.

The importance of sampling within inspection or testing activities is such that the RvA wishes to meet the need in the market to accredit these activities as a separate activity. In doing so, the RvA also follows the working method agreed internationally within EA:

> **EA Resolution 2022 (52) 11**
> **EN ISO/IEC 17025, the preferred standard for sampling activities**
> The preferred standard for the accreditation of bodies performing sampling as a stand-alone activity is EN ISO/IEC 17025. EN ISO/IEC 17020 – Conformity assessment — Requirements for the operation of various types of bodies performing inspection could be considered to be also appropriate provided that all the corresponding requirements of the preferred standard are used as additional requirements within the accreditation process.
> (Note: This resolution amends EA Resolution 2015 (35) 20.)

In this explanatory document the RvA has recorded the conditions under which sampling can be accredited as a separate activity.

2 The inspection and test activities

The schedule below shows that sampling has an important position in both inspection and testing. However, sampling is not covered by the accredited activities in all cases or is undertaken by third parties. A schematic representation of a number of possibilities is given below.

Potential situations	Activities in the inspection and test process			
	1. Establishing inspection/measuring strategy	2. Sampling	3. Measurements, analysis	4. Interpretation and conclusions
1	Inspection EN ISO/IEC 17020			
2		Inspection EN ISO/IEC 17020		
3			Inspection EN ISO/IEC 17020	
4	Inspection EN ISO/IEC 17020			
5		Inspection EN ISO/IEC 17020		
6	Test EN ISO/IEC 17025			
7		Test EN ISO/IEC 17025		
8			Test EN ISO/IEC 17025	
9	Test EN ISO/IEC 17025			
10		Test EN ISO/IEC 17025		

Situation 1: The inspection body (IB) is responsible for the entire process. The report of inspection results must contain a justification for the selected inspection strategy.

Situation 2: The IB does not establish the sampling strategy directly but works on the basis of the strategy pre-defined by the client, or in accordance with a prescriptive document. The report of inspection results must make reference to the inspection strategy prescribed by the client, or to the prescriptive document.

Situation 3: The IB inspects the objects supplied and is not responsible for the sampling. The report clearly states that an opinion is only provided in respect of the objects provided and, for example, not about a batch of objects.

Situation 4: The IB is responsible for the sampling strategy and sampling. Sampling should be carried out for the purpose of further analysis.

Situation 5: The client shall have the inspection body carry out the sampling, based on a given strategy or normative document. The reporting of the results shall refer to the measurement strategy prescribed by the client. Sampling shall be carried out for the purpose of further analysis.

Situation 6: The laboratory is responsible for the entire process. The report of test results must contain a justification for the measuring strategy selected however the opinion of the laboratory must not extend beyond whether the object/batch does or does not meet the pre-defined specifications.

Situation 7: On the basis of a specified strategy or prescriptive document, the client arranges for the laboratory to take samples and to measure. In the report of test results reference is made to the measuring strategy prescribed by the client or to the prescriptive document.

Situation 8: The laboratory conducts tests on a sample that has been supplied. The report clearly states that the results only concern the sample that has been provided.

Situation 9: The laboratory is responsible for the sampling strategy and sampling. Sampling should be carried out for the purpose of further analysis.

Situation 10: The client shall have the laboratory carry out the sampling, based on a given strategy or normative document. The reporting of the results shall refer to the measurement strategy prescribed by the client. Sampling shall be carried out for the purpose of further analysis.

Also see RvA-T015 concerning how to deal with 'opinions and interpretations' and ‘declarations of conformity’.

In addition to the fact that the organisation can be exclusively responsible for part of the process, elements can also be subcontracted or a client can arrange for different elements to be undertaken by separate organisations. In the latter case, ambiguity can arise about the responsibility for the test and inspection results and the interfaces must be considered more critically. However, provided the report clearly states which activities have been undertaken under the responsibility and which accreditation of the laboratory or the inspection body then accreditation contributes towards clarity for the client or the subsequent user of a report.

3 Scope

Sampling will be explicitly mentioned on the scope (see SAP-L000).

4 Standards for accreditation in relation to sampling

Standards EN-ISO/IEC 17020 and EN-ISO/IEC 17025 can be used for the accreditation of sampling. However, EN ISO/IEC 17025 contains the most concrete criteria for sampling.

The EN-ISO/IEC 17025 mentions the scope of application of the standard: 'tests and/or calibrations, including sampling'. Criterion 7.3 of EN ISO/IEC 17025 sets out extensive requirements for sampling and criteria 7.8.1, 7.8.2 and 7.8.5 of EN ISO/IEC 17025 for reporting results of sampling.

The RvA will therefore apply to EN ISO/IEC 17020-accredited organisation the relevant criteria of EN ISO/IEC 17025 when accrediting sampling, in line with EA Resolution 2022 (52) 11 (see Chapter 1).

5 Requirements for sampling

The RvA has formulated specific explanatory notes for the accreditation requirements relating to the following topics:

- personnel competence (5.1);
- technical resources (5.2);
- methods to be used (5.3);
- determination of measurement uncertainty (5.4);
- acceptance of assignment (5.5);
- guaranteeing the quality of the sampling (5.6);
- reporting the sampling (5.7).

6.1 Personnel

The requirements set out in EN ISO/IEC 17025, criterion 6.2, relating to the availability and competence of personnel are applicable in full to organisations taking samples.

When determining the required qualifications it is necessary to take into account the question about whether the sampling strategy is prescribed in standardised methods, or whether this strategy has to be determined directly by the organisation. In the latter case, the organisations must possess knowledge relating to the statistical validations of sampling.

The personnel coordinating and undertaking the sampling must in all cases have adequate, demonstrable knowledge about the objects to be sampled and the processes or systems. This is required in order to determine the suitability of the place and time of sampling, and in order to be able to determine the effects of the circumstances under which the sample is to be taken on the suitability of the sample.

5.2 Environmental conditions an technical resources

The requirements set out in EN ISO/IEC 17025, paragraphs 6.3 and 6.4, relating to the environmental conditions and the availability and suitability of resources are applicable in full to organisations taking samples.

The organisation must implement specific measures, where relevant, to guarantee the sterility and inertness of materials used for the tests or inspections to be carried out. Contamination by and adsorption to materials should be avoided, as well as other possible forms of influencing the properties of the sampling object.

5.3 Methods

The requirements set out in EN ISO/IEC 17025, paragraph 7.2, relating to the methods used are applicable in full to organisations taking samples. The requirements contained in EN ISO/IEC 17025, paragraph 7.3, are particularly applicable.

Sampling requires clearly recorded methods that are matched to the purpose of the tests or inspections. In practice, sampling is often undertaken in accordance with methods set out in prescriptive documents that have been agreed in and for a specific sector.
The laboratory or the inspection body can determine the strategy for sampling. If, on request of the client, the strategy determined by the laboratory or inspection body is to be deviated from, then the laboratory or inspection body must record this in the report, together with a statement about whether – in the opinion of the laboratory or the inspection body – the sampling is still representative.
If the sampling is not undertaken in accordance with standardised methods then the organisations must itself demonstrate the validation of the method used. As a minimum, this means it is to be demonstrated that the method:

- guarantees the representativeness of the samples taken;
- does not change the properties of the test or inspection object in such a way that the results of the test or inspection are influenced.

5.4 Determination of measurement uncertainty

The requirements laid down in EN ISO/IEC 17025, criterion 7.6.1, regarding measurement uncertainty apply in full to sampling organisations.

Based on criterion 7.2.1.1 of EN-ISO/IEC 17025, the laboratory shall use suitable methods and procedures for determining measurement uncertainty.

Within the Netherlands, NEN 7776 - Contribution of sampling to measurement uncertainty has been developed for this purpose. However, the scope of this standard is limited to environment, food, animal feed, mineral solid fuels and solid biofuels. Laboratories should therefore check for themselves whether this standard is also suitable outside the indicated scope. Note that it is not mandatory to use

this standard, but applying this standard does give substance to the determination of measurement uncertainty with regard to sampling.

If the sampling and/or sampling strategy is part of a method with which the subsequent analysis is also performed, it will have to be checked whether the performance characteristics have been validated/verified including the sampling (and sampling strategy) or excluding the sampling (and sampling strategy) . The standard or legal basis used should be mentioned on the (sampling)report.

Only inspection bodies are not required to determine the measurement uncertainty themselves if it is demonstrably included in the (legal) assessment criteria, if demonstrable agreements have been made about this in the sector or by law, or if the client and contractor have explicitly agreed that the measurement uncertainty need not be taken into account.

Publications outside the Netherlands that may be useful:

- EURACHEM/CITAC Guide, Measurement uncertainty arising from sampling: A guide to methods and approaches, 2nd edition, 2019;

5.5 Acceptance of assignments

The requirements set out in EN ISO/IEC 17025, criterion 7.1, relating to assessing requests and assignments are applicable in full to organisations taking samples.

The instruction for sampling must clearly record whether the sampling has to be undertaken in accordance with a prescribed standard or whether the sampling plan has to be drawn up directly by the organisation taking the samples.

Every sampling must be undertaken in accordance with a pre-defined sampling plan which clearly records the conditions under which and the degree to which deviations from the plan are permitted during the sampling.

The assignment must state unambiguously that the sampling is being undertaken within the framework of accredited inspection or testing.

5.6 Guaranteeing the quality of sampling

The requirements set out in EN ISO/IEC 17025, criterion 7.7, relating to quality control are also applicable to organisations taking samples. The organisation must have demonstrably implemented procedures which, as a minimum, provide:

- Clear verification points for the execution of the activities by the person taking the sample. These verification points must be determined on the basis of the critical steps in the sampling process. The execution of the prescribed verifications by the person undertaking the work must, where possible, be recorded;

- Supervision of the execution of the sampling by persons who are competent in the relevant sampling methods and who are aware of the aims of the sampling. This supervision must be undertaken in a systematic and planned manner. Amongst other things, the supervision must focus on correct observance of the instructions, working in accordance with the sampling plan and the recording and reporting of any deviations; This relates to criterion 6.2.5f of EN ISO/IEC 17025;
- Assessment of the result of every sampling activity by an authorised member of staff designated for that purpose. This relates to criterion 6.2.6c of EN ISO/IEC 17025.
  In doing so, this employee will have to determine whether the requirements have been met based on, among other things, the registrations;
- Periodic mutual agreement of the procedures between the various samplers of the organisation.

6 Reporting of sampling - specific requirements

The requirements regarding reporting of sampling are laid down in EN ISO/IEC 17025 criterion 7.8.5. These apply to separate reporting of sampling, but are also mandatory on analysis and/or inspection reports if necessary for the interpretation of results.

7 Changes compared with the previous version

The following changes have been made compared to version 5 of February 6th, 2019:

- References to EN ISO/IEC 17025 :2005 have been deleted;
- Explanation of the use of the accreditation mark has been deleted;
- Scope samples have been removed;
- Table in chapter 2 extended with "Stand-alone" sampling.
- Addition of requirements and reference document on measurement uncertainty regarding sampling.