SUPPLEMENTARY PROVISIONS FOR CERTIFICATION OF PRODUCTS FOR DRINKING WATER SUPPLY

Approved by DK-VAND's steering committee on 19 March 2021.

1. GENERAL INFORMATION

The supplementary provisions for product certification comprise:

Products for drinking water supply

The supplementary provisions for product certification apply as an addendum to Dancert's General terms for certification, inspection and approval (hereinafter referred to as "General terms"), see General terms point 0.3.

The certification system of DK-VAND is managed by Dancert with respect to issuance, renewal and annulment of certificates as well as audit requirements, i.e. scope and frequency.

DK-VAND certificates do not have an expiry date and apply as long as the certification requirements are fulfilled, or the certification basis is not subject to significant changes.

The validity of DK-VAND certificates can be verified at the websites of DK-VAND and Dancert.

2. PURPOSE

The purpose of the certification system is to ensure that documentation is available proving that products used in the drinking water supply systems do not release hazardous substances in amounts exceeding the acceptable threshold limit values of the test provisions and that the products do not release flavour and odour to the drinking water.

3. CERTIFICATION SYSTEM

The certification system comprises the following:

The certification audit consists of:

1. General information:
   - 1.2 Fulfilment of product requirements
   - 1.3 Fulfilment of production control requirements
   - 1.4 Marking and documentation of products (provided or on the website)
   - 1.5 Traceability
   - 1.6 Sampling for type testing

2. The type testing consists of:
   - 2.1 Migration testing in compliance with applicable test provisions
     - 2.1.1 Comprehensive analysis scope in compliance with a test outline
     - 2.1.2 Toxicological assessment of the analysis results
   - 2.2 Decision on certification
   - 2.3 Evaluation of the certification audit and the toxicological assessment
3. Periodic monitoring audit, annually

4. Periodic audit testing of samples selected during the audit
   4.1 Sampling for migration testing according to section 9.

5. Based on the results of the periodic monitoring audits, every three years Dancert must assess whether the certification can still be maintained.

4. TEST BASIS

The migration testing for the type test must be performed in compliance with the applicable version of DK-VAND's test requirements for the products in question.

5. REQUIREMENTS FOR CERTIFIED PRODUCTS

5.1 For the type test, a test outline based on a toxicological assessment of the raw materials must be prepared, including the dominant material, other applied materials and all additives, i.e. antioxidants, auxiliary substances, colouring agents, etc.

5.2 Based on the test results, a positive total toxicological assessment of each analysis result by the toxicological consultant must be available, see the acceptance criteria of the test requirements.

6. REQUIREMENTS FOR THE MANUFACTURER'S PRODUCTION MANAGEMENT

6.1 General information

The manufacturer must establish and maintain a production management system, which ensures that the requirements of the certification basis are met.

6.2 Documentation requirements

The documented system of the manufacturer must as a minimum describe the following:

1. Responsibilities and authorisations in the company.
2. Raw materials used: trade name, production site, batch number.
3. The company's production management including ongoing recording of batch numbers.
4. Assurance by the company that the raw materials and manufacturing parameters[1] are identical with those used for the type tested product.
5. Maintenance and calibration of measuring and test equipment.
6. Handling of deviating products.
7. Handling of complaints and corrective actions.
8. Traceability of products.
9. Storage, marking and delivery of the certified product.

6.3 Self-monitoring

The manufacturer's self-monitoring system must meet the requirements below:

1. Compliance and traceability between the materials used and the DK-VAND certificate.
2. Procedures for handling and storage including assurance that the raw material or the products are not contaminated, e.g. during the packaging of the products.
3. Compliance between the information provided as basis for the certificate and the manufactured products.

[1] The manufacturing parameters are the parameters that are of importance for the migration of substances from the products produced: raw material, melting temperature, extrusion velocity, etc.

4. That the manufacturing parameters used for the product that was migration tested are also used for serial production of the products. The manufacturer must ensure that the variations of the manufacturing parameters stated in the migration test report are not of a size that could lead to changes in the migration.
5. Documented procedures and recording referring to the production of products marked with DK-VAND.

6.4 Traceability

The manufacturer must have an effective system in order to ensure that all deliveries can be traced back to the manufacturer of the product and to the raw material. This serves to ensure that corrective and remedial actions can be taken for deviating products.

7. TYPE TESTING (migration testing)

7.1 General information

Type testing is carried out in compliance with the applicable test requirements. The analyses must be performed by an accredited laboratory, if possible. Prior to the testing and the analysis, the toxicological consultant must be given the opportunity to modify the test outline based on newly acquired information, if relevant.

The sampling is carried out in the same way as for the audit test, see section 9.

The certification body must select the samples for the migration analysis.

8. SURVEILLANCE AUDIT

Ordinary surveillance audits are conducted annually by an audit body recognised by Dancert. These surveillance audits are carried out to ensure that the certificate owner still meets the requirements of the certification basis.

9. AUDIT TESTING

Prior to audit testing, the toxicological consultant must be given the opportunity to modify the test outline, if relevant.

Sampling must be carried out by the auditor who must ensure, e.g. by sealing, that the samples cannot be replaced by other samples. The certificate owner must submit the samples in time for the migration testing. Information on recording appears from the appendices mentioned below.

Appendix I: Provisions for plastic pipes made from PE or PVC materials with or without protective cap materials
Appendix II: Provisions for plastic fittings

If the auditor is not able to carry out the sampling due to lack of production, the certificate owner may select the samples as an exception. However, documentation for the sampling must be provided, and the documentation must be assessed during the following audit.

The test samples must not be more than 60 days old when sampled at the manufacturer. The test must be commenced not later than 60 days after the analysis laboratory has received the test sample. The test must be completed not later than 90 days after the analysis laboratory has commenced the test.

10. TEMPORARY PROVISIONS

During the transition to these provisions, samples for audit are selected based on the date of the type test. If the type test was performed one year ago, the work is continued as of year 2. If the company must perform a new type test after three years, the test is continued as of year 1. The toxicological consultant must, however, prepare a new test outline based on the test.

See the examples in Appendix 1 - Examples.

11. REPORTING

11.1 Reporting of the migration testing and audit

The toxicological consultant assesses the results and, if the results are acceptable, the consultant issues a note for Dancert.

Audit reports, migration test reports and toxicological assessment reports must be submitted to Dancert. The certificate owner is responsible for submitting the reports to Dancert in time.

11.2 Deviations during migration testing

If the analyses show migrations exceeding the acceptable level, a new sampling must be carried out by the auditor, and a complete migration analysis must be carried out.

12. MARKING

Marking with DK-VAND must be performed in compliance with DK-VAND's instructions: https://dk-vand.org/brug-af-dk-vand-maerket/.

The DK-VAND mark must be followed by the number of the certificate issued by Dancert.

Appendix I: Provisions for plastic pipes made from PE or PVC materials with or without protective cap materials

Solely the owner of a Nordic Poly Mark through an INSTA-CERT certificate can apply for DK-VAND certification.

An INSTA-CERT certification of the product must be available, cf. the applicable SBC (special provisions for certification). Information on Nordic Poly Mark via an INSTA-CERT certification and relevant SBCs can be found on: http://www.insta-cert.net/.

TEST BASIS

The migration testing for the type test must be performed in compliance with the applicable version of DK-VAND – Test requirements for pipes.

1. Samples for migration testing

The first year, a pipe dimension from the dimension groups can be selected at will. During the following years, a pipe dimension from one of the other dimension groups must be selected, so that during the surveillance period of three years, migration tests of pipes from all dimension groups are carried out.

Sampling for testing must be performed in such a way as to ensure that there is a maximum of four years between the tests of a specific product. The aim is to achieve sampling every third year.

Number of pipe samples for migration testing according to the table below:

Dimension groups	Pipe length [mm]	Quantity
1	1100	16
2	1100	4
3-4	1100	2

In the course of a surveillance period of three years, sampling for migration testing must be carried out each year following the date of the certificate issuance according to the table below. The result of the migration test must be available at the latest 5 months later.

Dim. group	Type testing	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6 -
1	AP X #	AP X (#)	A	A	AP X (#)	A	A
2	AP X #	A	AP X (#)	A	A	AP X (#)	A
3	AP X #	A	A	AP X (#)	A	A	APX (#)

X = Migration testing
= Toxicological assessment
(#) = Update of toxicological test outline
A = Audit
AP = Audit and sampling

Packaging: 800 x 1200 mm euro-pallet with frames, cardboard or wood at the bottom and the top. No plastic packaging.

The entire pipe marking must be legible.

2. Samples for audit testing

During the sampling, the following information must be recorded for each individual sample and be included in the analysis report:

1. Product name
2. Product number or ID
3. Dimension or pressure class
4. Production site, batch number and date of manufacture
5. Manufacturing parameters (temperature, velocity, pressure, etc., see foot note 1)
6. Trade name of the raw material
7. Manufacturer of the raw material
8. Batch number and date of manufacture of the raw material. For PVC mixtures, the recipe ID must be stated as well.
9. Sampling procedures (from storage or production)
10. Person responsible for the sampling

3. Scope of analysis for audit testing (surveillance testing)

The analyses are carried out according to the test outline completed by the toxicological consultant for the type test. The test outline must be updated in connection with the audit test due to potential changes based on newly acquired information, see point 5 in the list below.

The toxicological consultant must consider which of the substances below that must be included in the analysis.

Scope of analysis for PE pipes:

1. TOC
2. Organoleptic evaluation (TON and TFN)
3. Phenol
4. Degradation substances:
   - 4.1 5-methyl-2-hexanone (110-12-3)
   - 4.2 4-ethylphenol (123-07-9)
   - 4.3 4-tert-butylphenol (98-54-4)
   - 4.4 4 butoxyphenol (122-94-1)
   - 4.5 2,6-di-tert-butyl-1,4-benxoquinone (719-22-2)
   - 4.6 2,4-di-tert-butylphenol (96-76-4)
   - 4.7 2,6-bis (1,1-dimethyl)-4-methylphenol (128-37-0)
   - 4.8 3,5-di-tert-butyl-4-hydroxystyrene (52858-87-4)
   - 4.9 3,5-di-tert-butyl-4-hydroxybenzaldehyde (1620-98-0)
   - 4.10 3,5-di-tert-butyl-4-hydroxyacetophenon (14035-33-7)
   - 4.11 7,9-di-tert-butyl-1-oxaspiro (4,5) decra-6,9-diene-2,8-dione (82304-66-3)
   - 4.12 3-methyl-3,5-di-tert-butyl-4-hydroxyphenolpropanoate (6386-38-5)
5. If the toxicological consultant assesses - based on the recipe or newly acquired information - that other substances are relevant, these must be included in the test outline.

Scope of analysis for PVC pipes:

1. TOC
2. Organoleptic evaluation (TON and TFN)
3. Phenol
4. Formaldehyde (50-00-0)
5. Vinyl chloride (75-01-4)
6. Acrylamide (79-06-1)
7. If the toxicological consultant assesses - based on the recipe or newly acquired information - that other substances are relevant, these must be included in the test outline.

Appendix II: Provisions for fittings

Solely the owner of a Nordic Poly Mark through an INSTA-CERT certificate can apply for a DK-VAND certification.

An INSTA-CERT certification of the product must be available, see the applicable SBC (special provisions for certification). Information on Nordic Poly Mark via an INSTA-CERT certification and relevant SBCs can be found on: http://www.insta-cert.net/.

TEST BASIS

The migration testing for the type test must be performed in compliance with the applicable version of DK-VAND – Test requirements for fittings.

1. Samples for migration testing

For the first certification and the subsequent audit tests, one sample for each material for each manufacturing site must be selected. If the products are manufactured by both injection moulding and extrusion, one sample from each process must be selected.

The test must always be performed on the plastic fitting with the lowest SDR value, i.e. the largest wall thickness, e.g. PE100 d40 SDR11 (ø40 x3.6 mm). This fitting validates all plastic fittings with identical or higher SDR values. SDR (Standard Dimension Ratio) is the ratio of the outside diameter of the plastic fitting to the wall thickness.

If a plastic fitting is manufactured only in dimensions larger than ø40 mm (inside diameter), it is accepted that test samples of the same material are specifically manufactured in a smaller dimension. It is also accepted that another type of fitting is sampled, provided that - due to practical reasons - it is not possible to perform the migration test based on the required S/V ratio.

For audit testing, the aim is to test a representative segment of the fitting groups over the course of some years.

2. Samples for audit testing

During the sampling, the following information must be recorded for each individual sample and be included in the analysis report:

1. Product name
2. Product number or ID
3. Dimension or pressure class
4. Production site, batch number and date of manufacture
5. Manufacturing parameters (temperature, velocity, pressure, etc., see foot note 1)
6. Trade name of the raw material
7. Manufacturer of the raw material
8. Batch number and date of manufacture of the raw material. For PVC mixtures, the recipe ID must be stated as well.
9. Sampling procedures (from storage or production)
10. Person responsible for the sampling

Samples for audit testing must be selected every third year.

The samples must not be packed in plastic packaging.

3. Scope of analysis for audit testing (surveillance testing)

The analyses are carried out according to the test outline completed by the toxicological consultant for the type test. The test outline must be updated in connection with the audit test due to potential changes based on newly acquired information, see point 5 in the list below.

The toxicological consultant must consider which of the substances below that must be included in the analyses.

1. TOC
2. Organoleptic evaluation (TON and TFN)
3. Phenol
4. Degradation substances:
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5. If the toxicological consultant assesses - based on the recipe or newly acquired information - that other substances are relevant, these must be included in the test outline.