SUPPLEMENTARY PROVISIONS FOR CERTIFICATION OF PLASTIC PIPES FOR DRINKING WATER

0. GENERAL INFORMATION

The supplementary provisions for product certification comprise:

Plastic pipes for drinking water manufactured from PE or PVC materials with or without protective cap materials.

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

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

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.

1. PURPOSE

The purpose of the certification system is to ensure documentation that plastic pipes used in the drinking water supply do not release harmful substances in amounts exceeding the acceptable threshold limit values of the test provisions and that the pipes do not release taste and odour to the drinking water.

2. 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, annual

4. Periodic audit testing of samples sampled during the audit
   - 4.1 Sampling for migration testing in compliance with 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.

3. TEST BASIS

The migration testing for the type test must be performed in compliance with the current version of DK-VAND - Test provisions for PE and PVC pipes.

4. REQUIREMENTS FOR CERTIFIED PRODUCTS

4.1 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 here: http://www.insta-cert.net/.

4.2 For the type test, a test outline based on a toxicological assessment of the raw material, which consists of the polymer and all additives, i.e. oxidants, auxiliary substances, colouring agents, etc. must be prepared.

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

5. REQUIREMENTS FOR THE MANUFACTURER'S PRODUCTION MANAGEMENT

5.1 General information

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

5.2 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 no.
3. The company's production management including ongoing recording of the 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.

5.3 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 pipes.
3. Compliance between dimensions and SDR groups stated in the certificate and the products manufactured.
4. That the manufacturing parameters used for the pipe that was migration tested are also used for the serial production of the pipes. The manufacturer must ensure that 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 pipes marked with DK-VAND.

5.4 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 the raw material. This serves to ensure that corrective and remedial actions can be taken for deviating pipes.

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

6. TYPE TESTING (migration testing)

7.1 General information

Type test is carried out in compliance with the valid test provisions. The analyses must be performed by an accredited laboratory, if possible. Prior to testing and analysis, the toxicological consultant must have 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 samples for the migration analysis.

7. SURVEILLANCE AUDIT

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

8. AUDIT TESTING

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, see the figure below. The result of the migration test must be available at the latest 11 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
A = Audit
AP = Audit and sampling

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

1. Product name
2. Product number or ID
3. Dimension or pressure class
4. Production site, batch no. and production date
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 no. and manufacturing date of the raw material. In case of a PVC mixture, the recipe ID must be stated as well.
9. Sampling procedures (from storage or production)
10. Person responsible for the sampling

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 (points 1-10) must be provided, and the documentation must be assessed during the following audit.

When sampled, the samples must not be older than 60 days as a maximum.

9.1 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 is subject to 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.

9.2 Pipe 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]	Qty.
1	1100	16
2	1100	4
3-4	1100	2

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.

9.3 Scope of analysis for audit testing (surveillance testing)

Scope of analysis for PE pipes without protective caps:

The analysis programme performed is developed by the toxicological consultant for the type test. The analysis programme 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:
   - 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 concludes - based on the recipe or newly acquired information - that other substances are relevant, these have to be included in the form part of the analysis programme.

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 concludes - based on the recipe or newly acquired information - that other substances are relevant, these have to be included in the analysis programme.

REPORTING

10.1 Reporting of the migration testing and audit

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

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

10.2 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.

11 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 certificate number of the certificate issued by Dancert.