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

The owner of a Nordic Poly Mark through an INSTA-CERT certificate can apply for DK-VAND certification. Alternatively, a company must by other means provide documentation of the same properties and lifespan of their products, and that the quality in production is maintained over a period of time.

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	20
2	1100	8
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. [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, for each material.

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 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)

[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.

4.7 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.