Appendix II: Provisions for fittings

The owner of a Nordic Poly Mark through an INSTA-CERT certificate can apply for a 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, 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/.

The use of “Size group” in DK-VAND certificates, see note.

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.[1])
6. Trade name of the raw material

[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.

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:
   - 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.

Note. The use of dimension groups (“size groups”) in DK-VAND certificates for fittings
Although DK-VAND’s provisions for fittings do not refer to dimension groups, these are nevertheless specified in DK-VAD certificates.
The reason for this is that only fittings whose mechanical properties were tested with positive results, can be approved in accordance with the DK-VAND provisions.
The intention in indicating the dimension groups is to clarify which products are covered be the DK-VAND certificate.
Dimension groups in DK-VAND certificates correspond to those specified in the relevant INSTA-CERT SBC and/or EN standard.