# Proposal INSTA-CERT SBC PS 116

April 2024
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# Plastics piping systems for civil engineering drainage — Pipes of polypropylene (PP) and polyethylene (PE) — Specifications for double-wall pipes and their joints.

· INSTA-CERT ·

# Specific rules for certification in accordance with NPG/PS 116

## *Plastics piping systems for civil engineering drainage — Pipes of polypropylene (PP) and polyethylene (PE) —Specifications for double-wall pipes and their joints.*

## Foreword

NPG/PS 116 specifies the requirements for pipes for civil engineering drainage piping system made of polyethylene (PE) and polypropylene (PP).

The following modifications are made in this version of this document:

- In References the latest version of NPG PS 116 has been listed
- The use of virgin and own reworked materials has been reformulated
- The use of pre- and post-consumer materials has been introduced
- Some editorial changes
- Updates acc. to INSTA-CERT SBC Template No. 14

**References**

INSTA-CERT GRC General Rules for Certification provided by INSTA-CERT

NPG/PS 116:2024 Plastics piping systems for civil engineering drainage - Pipes of polypropylene (PP) and polyethylene (PE) - Specifications for double-wall pipes and their joints

## 1 CONDITIONS FOR CERTIFICATION

The issuance of a certificate requires that the applicant commits itself to follow the ”General Rules for Certification provided by INSTA-CERT” (hereafter INSTA-CERT GRC) and the specific rules, but also to make sure that the products mentioned fulfil the requirements in NPG/PS 116.

Pipes covered by this SBC made of virgin materials, own reworked materials and pre- and post-consumer materials can be certified under the INSTA-CERT system.

The use of reworked material from pipes conforming to this standard shall be permitted without limitations. Pipes covered by this SBC made of virgin material, own reworked material or pre- and post-consumer material may be used under the condition that the manufacturer’s quality system allows for traceability of the final compound, i.e. at least type of compound(s) and their respective percentage are recorded (and the corresponding material certificates, if applicable).

Under the INSTA-CERT system the term “reworked material”, as defined in EN 14541-1, refers to plastics material from rejected unused products or trimmings capable of being reclaimed within the legal entity that generated it, i.e. within the same production site or a different production site belonging to the same company.

## 2 APPLICATION FOR A CERTIFICATION

The applicant is free to choose at which certification body (partner of INSTA-CERT) they want to apply, and subsequently a certificate is issued. The application shall be in writing on a separate form, available at www.insta-cert.net. The application shall include information concerning the applicant, as well as information about the characteristics of the pipes mentioned in the application, e.g. dimension, stiffness class, etc..

The application shall include:

- Accredited reports covering type tests (testing and inspection) according to clause 4.1 and a description of each component intended to be covered by the certificate. When appropriate, technical specifications or drawings can be used. The type test report or any other test reports shall be presented in any of the Nordic languages or in English. The reports should preferably not be older than two years.

- Copy of signed and dated statement from the manufacturer that he has carried out all relevant Manufacturer's Type testing according to tables 5A and 6A.
- Information concerning the material in pipes, stating the name of the manufacturer of the raw material.
- If applicable, information concerning the manufacturer and the certification of pipes used for production of swept bends and double sockets.
- If applicable, information concerning the manufacturer and the type of sealing rings, together with documentation that the sealing ring material fulfils the requirements of the relevant standard, EN 681-1 or -2, either as a valid accredited certificate or as accredited test reports as required in the standard.
- Description of the manufacturer's internal control system and instructions for quality assurance of the relevant product according to clause 4.1.2.
- Proposal for marking according to clause 5 and Annex B.

Installation manual/guidance shall be available for products covered by this SBC and be presented in any of the Nordic languages or in English.

An INSTA CERT certificate can only be issued to manufacturers of materials or components in the field of thermoplastics piping and fittings system.

## 3 CERTIFICATE

The certificate will be issued when the type test reports prove that the requirements of NPG/PS 116 and this SBC are fulfilled and that other application initiatives according to clause 2 are approved. A certificate according to this SBC only covers one manufacturer and products from one production site.

For a manufacturer extending the scope of certification to another production site with products covered by this SBC, one of the following alternatives shall be followed:

1. Type testing is performed by an approved test laboratory according to Table 9, Audit Test. A certificate may be issued when the approved results are available for the short-time tests.

2. The manufacturer shall carry out a preliminary type test (PTT) according to Table 9, Audit Test. The certificate may be issued as soon as the approved results are available for all tests, and products are submitted for testing at an approved test laboratory.

Both alternatives imply that the production and the quality assurance system for the actual production sites are similar. This is verified through an assessment of the quality system and an initial inspection at the production site. A report shall be available before the certificate can be issued.

The scope of certification will be according to the table 1.

**Table 1 The scope of certification**

| Field of application / nominal ring stiffness / diameter (mm) | | | |
|---|---|---|---|
| SN4 | | SN8 | |
| OD | ID | OD | ID |
| 50 | 48 | 50 | 48 |
| 75 | 69 | 75 | 69 |
| 110 | 100 | 110 | 100 |
| 160 | 125 | 160 | 125 |
| 200 | 150 | 200 | 150 |
| 250 | 200 | 250 | 200 |
| 315 | 250 | 315 | 250 |
| 400 | 300 | 400 | 300 |
| 500 | 400 | 500 | 400 |
| 630 | 500 | 630 | 500 |
| 800 | 600 | 800 | 600 |
| 1000 | 800 | 1000 | 800 |
| 1200 | 1000 | 1200 | 1000 |
| | 1200 | | 1200 |

Pipes are classified in size groups according to Table 2.

**Table 2: Size groups for pipes**

| Mean outside diameter DN/OD and DN/ID (mm) | Size group |
|---|---|
| 50 - ≤ 100 | 1 |
| > 100 - ≤ 200 | 2 |
| > 200 - ≤ 500 | 3 |
| > 500 - ≤ 1200 | 4 |

# 4 TESTING AND INSPECTION

Testing and inspection include:

- Type testing and inspection, 4.1
- Factory production control (BRT, PVT), 4.2
- Audit testing (AT) and inspection, 4.3
- Other testing and/or inspection, 4.4
- Testing and/or inspection by change of production conditions, 4.5

## 4.1 Type testing and inspection

Compound in these specific rules mean specification of raw material grade, additives and their mixture ratios.

### 4.1.1 Type testing

Pipes included in the application shall be type tested to the extent stated in Table 5A, 5B, 6A and 6B. The type test required for the manufacturer may be performed by the manufacturer itself or outsourced to a test laboratory. On request by the applicant, the third party type test shall be performed by an accredited test laboratory. The type test report shall confirm that the relevant pipes fulfil all the requirements. The type test report shall state the designation of the material and the sealing rings used in the tested pipes.

### 4.1.2 Initial inspection

The initial inspection shall be performed by an approved inspection body according to Annex A to this SBC.

The initial inspection forms part of the type test and shall verify that the manufacturer's quality assurance system for the relevant products complies with the below notes and clause 4.2.1.

The documented routines shall cover:

- Disposition of responsibility.
- Documentation shall be available for the personnel involved (manual or document shall refer to INSTA-CERT GRC and this SBC and valid standards for actual products.
- Purchase and receiving inspection and control stocking of raw material.
- Factory production control.
- Recording of the results from the internal inspection including handling records in electronic form.
- Deviations and corrective actions.
- Calibration of measuring and testing equipment with traceability to accredited calibrated instruments.
- Final inspection of finished product.
- Handling of finished product (stocking, packaging and delivery) to prevent damages.
- Claims.
- Traceability of products and used own reworked materials and recycled materials from internal records.

In case the applicant has a valid INSTA-CERT certificate for similar products, this shall be taken into consideration when deciding the extent of the initial inspection.

During the initial inspection it shall be evaluated if the resources of the manufacturer are sufficient to ensure the required quality level of the products and to perform the internal testing according to clause 4.2.1. It shall also be checked that an installation manual/guidance is readily available for the end users.

## 4.2 Factory production control

### 4.2.1 Internal testing

Through described procedures and written instructions the manufacturer is responsible for demonstrating that INSTA-CERT marked pipes included in the certification fulfil the requirements of NPG/PS 116 and this SBC.

The internal testing is performed partly as a batch release test (BRT) with the minimum content as stated in Table 7 of this SBC, and partly as a process verification test (PVT) performed according to Table 8. The documentation of the testing shall be kept for at least 10 years.

The certificate holder/manufacturer is responsible for ensuring that instructions concerning internal quality inspection are available for the personnel in the language of the country concerned. Records of the internal testing shall be signed, dated and shall be available for the external inspector according to clause 4.3.1.

The records shall include information of, or traceability to:

- Type of raw material
- Certificate of raw material
- Compound identification / designation
- Batch number
- Date of production

If the tested pipes do not fulfil the requirements, the manufacturer/certificate holder must immediately initiate the necessary corrective actions to ensure that the products fulfil the requirements, see clause 8.2, batch release tests, in this SBC. It shall be prevented that defective products bearing the conformity mark are put on the market.

## 4.3 Audit testing and inspection

Audit testing and inspection of pipes shall be performed normally twice a year by an approved accredited inspection body and an accredited test laboratory according to Annex A to this SBC.

#### 4.3.1 Inspection

The inspection includes:

- Review of the manufacturer's documentation of the internal control according to clause 4.2.1, including inspection of records as well as inspection of the manufacturer's test equipment and calibration of measuring and testing equipment used.
- Checking of production, storage, packaging and delivery of final products. In addition, random surveillance of the quality insurance routines is carried out according to 4.1.2.
- Check of availability of installation manual/guidance.
- Check the traceability of own reworked materials and recycled materials used.
- Sampling of certified products from the manufacturer's stock. The samples shall be signed by the inspector and subsequently the samples shall be sent to the test laboratory for testing according to 4.3.2.

#### 4.3.2 Audit testing

The testing shall be performed according to Table 9 covering pipes with sizes representative for the manufacturer's production. All test results shall be documented in a report stating the designation of material and sealing rings used for the tested pipes.

#### 4.3.3 Results from inspection and testing

If the requirements are not fulfilled, the certification body decides - if necessary, in consent with the inspection body and/or test laboratory concerned – the actions to be taken.

Deficiencies in the results of the external or internal testing or inspection may cause withdrawal of the right to use the conformity mark until sufficient actions have been taken to ensure the quality. Additionally, the certification body may increase the number of external inspections for a certain period of time.

### 4.4 Other testing and inspection

Other testing and inspection may be performed according to the conditions stated in INSTA-CERT GRC.

### 4.5 Control at change of compound, design or production methods

The certificate holder shall inform the certification body of all changes of compounds, design and production methods in advance. Tables 5A, 5B, 6A and 6B describe the extent of the control caused by the changes.

The certificate holder is not allowed to mark any changed products with the conformity mark without a written permission from the certification body.

## 5 MARKING

The pipes included in the certification shall at least be marked with:

1. The conformity mark, see Annex B
2. Information according to NPG/PS 116 clause 11

Marking according to items 1 to 2 shall be approved by the certification body.

Any additional marking shall not be in conflict with the marking according to items 1 to 2.

## 6 FEES

Information about application and annual fees can be given by the members of INSTA-CERT.

The costs for type testing and initial inspection, as well as for audit testing and inspection, are paid by the applicant/certificate holder directly to the inspection body/testing laboratory.

Costs related to other kind of testing and/or inspection shall be paid according to the conditions stated in INSTA-CERT GRC.

# 7 REGISTER

A register of approved compounds and pipes according to NPG/PS 116 is available on INSTA-CERT's homepage www.insta-cert.net.

# 8 EXTENT OF TESTING

## 8.1 Type testing

Relevant type testing according to tables 5A, 5B, 6A and 6B shall be performed for each material type used, PP or PE, and when changes in construction, changes of compound and/or production method are taking place. Characteristics with given frequency are tested by an accredited test laboratory.

### 8.1.1 Material specification, PP

#### 8.1.1.1 Pipes manufactured of PP virgin material and of PP own reworked material

For the purpose of this SBC, the material specification consists of a compound having a polypropylene with specific product name (grade), additives, type of mineral modifier (if applicable) and own reworked material with a known dosage level as specified.

If the content of the mineral modifier is increased with more than 3% by mass, or a new type of mineral modifier is used compared to the type tested material, it is considered as a new material.

The manufacturer defines the mixture in the quality system.

Change of colour is not considered as a change of compound.

#### 8.1.1.2 Pipes manufactured of external non-virgin PP material

Requirements for external non-virgin PP materials used for manufacturing of pipes are specified in Table 3.

**Table 3 PP Pre- and postconsumer material**

| Component | Type | Range |
|---|---|---|
| Pre- and post-consumer material | With an agreed specification [1)] | Clause 4.2.2 and Annex B in NPG/PS 116 |
| [1)] The agreed specification(s) shall be declared by the manufacturer to the certification body | | |

### 8.1.2 Material specification, PE

#### 8.1.2.1 Pipes manufactured of PE virgin material and of PE own reworked material

For the purpose of this SBC, the material specification consists of a compound having a polyethylene with specific product name (grade), additives, type of mineral modifier (if applicable) and own reworked material with a known dosage level as specified.

If the content of the mineral modifier is increased with more than 3% by mass, or a new type of mineral modifier is used compared to the type tested material, it is considered as a new material.

The manufacturer defines the mixture in the quality system.

Change of colour is not considered as a change of compound.

#### 8.1.2.2 Pipes manufactured of external non-virgin PE material

Requirements for external non-virgin PE materials used for manufacturing of pipes are specified in Table 4.

**Table 4 Pre- and postconsumer material of PE**

| Component | Type | Range |
|---|---|---|
| Pre- and post-consumer material | With an agreed specification [1)] | Clause 4.3.2 and Annex D in NPG/PS 116 |
| [1)] The agreed specification(s) shall be declared by the manufacturer to the certification body | | |

**Table 5A Characteristics of pipes that require type testing by the pipe manufacturer**

| Characteristic | Reference to clauses and tables of NPG/PS 116 | Manufacturer's type testing frequency | | | | Number of test pieces | Number of measurements per test piece |
|---|---|---|---|---|---|---|---|
| | | New | Change of design (only changes influencing the jointing and / or performance of the pipe) | Change of compound a) | Extension (new size) | | |
| Resistance to internal pressure | PP: 4.2.2 - Table 1<br>PE: 4.3.2 - Table 2 | Once / PP-PE compound | | Once / PP-PE compound | | 3 | 1 |
| Melt mass flow rate | PP: 4.2.2 – Table 1<br>PE: 4.3.2 - Table 2 | Once / PP-PE compound | | Once / PP –PE compound | | 1 | 1 |
| Thermal stability, OIT | PP: 4.2.2 – Table 1<br>PE: 4.3.2 - Table 2 | Once / PP-PE compound | | Once / PP-PE compound | | 1 | 1 |
| Appearance – covered by BRT | 6 | Once / size | Once / size | | Once / size | 1 | 1 |
| Colour – Covered by BRT | 7 | Once / size | Once / size | | Once / size | 1 | 1 |
| Dimensions covered by BRT Pipe diameter, length and wall thickness; socket depth, wall thickness and diameters | 8.2 and 8.3 – tables 3, 4, 5, 6 and 7 | Once / size | Once / size | | Once / size | 1 | 1 |
| Dimensions intake openings – covered by BRT | 8.4 and tables 8 and 9 | Once / size | Once / size | | Once / size | 1 | 1 |
| Intake area – covered by BRT | 8.4.1.3 | Once / size | Once /size | | Once / size | 1 | 1 |
| Ring stiffness socket, if applicable | 8.3.3.2.1 | Once / size / compound | | Once / size / compound | Once / size / compound | 1 | 1 |
| Impact resistance | 9.1 – Table 10 | Once / size / compound | | Once / size / compound | Once / size / compound | min. 20 | 1 |
| Ring stiffness | 9.1 – Table 10 | Once / size / compound | | Once / size / compound | Once / size / compound | 3 | 1 |
| Ring Flexibility | 9.1 – Table 10 | Once / size / compound | | Once / size / compound | Once / size / compound | 3 | 1 |
| Creep Ratio | 9.1 – Table 10 | Once / size / compound | | One / size / compound | Once / size / compound | 3 | 1 |
| Sealing ring | 4.5 | Check of documentation / material | | Check of documentation / material | | n.a. | n.a. |
| Marking – covered by BRT | 11 – Table 12 | b) | | | | | |

a) For definition of change of material, see 8.1.1 or 8.1.2 as applicable for PP or PE respectively.
b) Products for type testing do not need to be marked as requested in the referring standard. The manufacturer shall mark such products according to his quality plan in a clear way so traceability to all necessary data for the material used, processing parameters etc. is secured. This marking shall be reflected in the report.

**Table 5B Characteristics of pipes that require type testing per pipe wall construction and material by the third party**

| Characteristic | Reference to clauses and tables of NPG/PS 116 | 3rd part type testing frequency | | | | Number of test pieces | Number of measurements per test piece |
|---|---|---|---|---|---|---|---|
| | | New | Change of design (only changes having influence on the jointing and/or performance of the pipe) | Change of material a) | Extension (new size group or new SN) | | |
| Resistance to internal pressure | PP: 4.2.2 – Table 1<br>PE: 4.3.2 – Table 2 | Once / PP-PE compound | | Once / PP-PE compound | | 3 | 1 |
| Melt mass flow rate | PP: 4.2.2 – Table 1<br>PE: 4.3.2 - Table 2 | Once / PP-PE compound | | Once / PP–PE compound | | 1 | 1 |
| Thermal stability, OIT | PP: 4.2.2 – Table 1<br>PE: 4.3.2 - Table 2 | Once / PP-PE compound | | Once / PP-PE compound | | 1 | 1 |
| Appearance | 6 | Pipes from which samples for testing as specified below is taken | | | | 1 | 1 |
| Colour | 7 | | | | | | |
| Dimensions<br>Pipe diameter, length and wall thickness; socket depth, wall thickness and diameters | 8.2 and 8.3 – tables 3, 4, 5, 6 and 7 | | | | | | |
| Dimensions intake openings | 8.4 and tables 8 and 9 | Once / perforation type for sizes taken for testing as specified below and in table 6 | Once / perforation type for sizes taken for testing as specified below and in table 6 | Once / perforation type for sizes taken for testing as specified below and in table 6 | Once / perforation type for sizes taken for testing as specified below and in table 6 | | |
| Intake area | 8.4.1.3 | | | | | | |
| Ring stiffness socket, if applicable | 8.3.3.2.1 | 1 diameter / size group, but at least two diameters shall be tested | | 1 diameter / size group, but at least two diameters shall be tested | 1 diameter / new size group and / or stiffness class | 1 | 1 |
| Impact resistance | 9.1 – Table 10 | 1 diameter / size group, but at least two diameters shall be tested | | 1 diameter / size group, but at least two diameters shall be tested | 1 diameter / new size group and/or stiffness class | min. 20 | 1 |
| Ring stiffness | 9.1 – Table 10 | 1 diameter / size group, but at least two diameters shall be tested | | 1 diameter / size group, but at least two diameters shall be tested | 1 diameter / new size group and/or stiffness class | 3 | 1 |
| Ring Flexibility | 9.1 – Table 10 | 1 diameter / size group, but at least two diameters shall be tested | | 1 diameter / size group, but at least two diameters shall be tested | 1 diameter / new size group and/or stiffness class | 3 | 1 |
| Creep Ratio | 9.1 – Table 10 | One size / material | | One size / material | | 3 | 1 |
| Sealing ring | 4.5 | Check of documentation / material | | Check of documentation / material | | | |
| Marking | 11 – Table 12 | b) | | | | | |

a) For definition of change of material, see 8.1.1 or 8.1.2 as applicable for PP or PE respectively.
b) Products for type testing do not need to be marked as requested in the referring standard. The manufacturer shall mark such products according to his quality plan in a clear way so traceability to all necessary data for the material used, processing parameters etc. is secured. This marking shall be reflected in the report.

**Table 6A Characteristics of fitness for purpose of the type TP pipe joints that require type testing per wall design and material by the pipe manufacturer**

| Characteristic | Reference to clauses and tables of NPG/PS 116 | Manufacturer's type testing frequency | | | | Number of test pieces | Number of measurements per test piece |
|---|---|---|---|---|---|---|---|
| | | New | Change of design (only changes influencing the jointing and/or performance of the pipe) | Change of formulation / compound | Extension (new size group, fitting group or new SN) | | |
| Tightness of elastomeric sealing ring joints a) b) c) | 10 – Table 11 | Once per size / stiffness class / joint design | Once per size / stiffness class / joint design | | Once per size / stiffness class / joint design | 1 | 1 |

When testing fitness for purpose characteristics of pipes and their joints they shall be mounted in accordance with the system suppliers mounting and installation instructions.

a) Joint design at least includes seal design, groove geometry, seal ring material and seal hardness (± 5 IHRD).
b) A licence covering a size group may be issued when one size in that size group has been successfully tested. The other sizes and classes shall be tested at the first production of the particular size / class.
c) The test shall be carried out using EN ISO 13259 Condition D with 10% deformation of the socket and 15% deformation of the spigot and the angular deflection specified in the standard.

**Table 6B Characteristics of fitness for purpose of the type TP pipe joints that require type testing per wall design and material by the third party**

| Characteristic | Reference to clauses and tables of NPG/PS 116 | 3rd part type testing frequency | | | | Number of test pieces | Number of measurements per test piece |
|---|---|---|---|---|---|---|---|
| | | New | Change of design (only changes having influence on the jointing and/or performance of the pipe) | Change of material | Extension (new size group or new SN) | | |
| Tightness of elastomeric sealing ring joints a) b) c) | 10 – Table 11 | Once per new size / stiffness class / joint design | Once per new size / stiffness class / joint design | | Once per new size / stiffness class / joint design | 1 | 1 |

When testing fitness for purpose characteristics of pipes and their joints they shall be mounted in accordance with the system suppliers mounting and installation instructions.

a) Joint design at least includes seal design, groove geometry, seal ring material and seal hardness (± 5 IHRD).
b) A licence covering a size group may be issued when one size in that size group has been successfully tested. The other sizes and classes shall be tested at the first production of the particular size / class.
c) The test shall be carried out using EN ISO 13259 Condition D with 10% deformation of the socket and 15% deformation of the spigot and the angular deflection specified in the standard.

## 8.2 BATCH RELEASE TEST, BRT

Batch release testing shall be performed by the manufacturer and includes determination of the characteristics listed in Table 7 with the specified minimum sampling frequencies.

A production batch shall be released for delivery only when the BRT shows conformity with the requirements of NPG/PS 116 and this SBC. The maximum extent of a production batch without change of material or dimension is seven days.

If a product is rejected due to lack of the quality stated in Table 7, the batch shall be scrapped or a retest procedure shall be performed for the specific characteristic / part of the product that has been rejected.

The following procedures shall then be performed:

1. The latest product which fulfils all the requirements specified in NPG/PS 116 shall be traced.
2. The products which have been produced before this date can be released, and the products which have been produced after this date shall be rejected.
3. Routines for handling deviating products shall be described in the manufacturer's quality system.

**Table 7 Characteristics of pipes and minimum sampling frequencies for BRT**

| Characteristic | Reference to clauses and tables of NPG/PS116 | Sampling procedure (minimum sampling) |
|---|---|---|
| Appearance/colour | 6 and 7 | At start up and change of compound and / or colour. Then continuously, but no registration |
| Mean outside diameter | 8.3 and tables 3 and 4, as applicable | At start up and continuously or every 8 h |
| Wall thickness | 8.3 and tables 3 and 4, as applicable | At start up and continuously or every 8 h |
| Socket dimensions – socket depth, wall thickness and diameter a) | 8.3.3 and tables 5, 6 and 7 as applicable | At start up and continuously or every 8 h |
| Dimensions of intake openings | 8.4.1.2 tables 8 and 9 as applicable | At start up and continuously or every 8 h |
| Impact resistance for sizes ≤ DN/OD315 and DN/ID 300 | 9.1 – Table 10 | At start up |
| Ring Stiffness | 9.1 – Table 10 | At start up and week |
| Ring flexibility | 9.1 – Table 10 | At start up and week |
| Marking | 11 – Table 12 | At start up. Then continuously, but no registration |
| For dimensions that are influenced by the process. | | |

## 8.3 Process verification test, PVT

Process verification testing shall be performed by the manufacturer and includes determination of the characteristics listed in Table 8 with the specified minimum sampling frequencies.

For products having been audit tested in the same period, the process verification test does not need to be repeated.

If the product does not conform with the requirements in respect of any characteristic in Table 8, the retest procedures detailed in the manufacturer's quality system shall be performed.

If, during the retest procedure, the product does not conform with the requirements, then the process shall be investigated and corrected in accordance with the procedures in the manufacturer's quality plan.

**Table 8 Characteristics and minimum sampling frequencies for PVT**

| Characteristic | Reference to clauses and tables NPG/PS116 | Sampling procedure (minimum sampling) |
|---|---|---|
| **Pipes** | | |
| Resistance to internal pressure a) | PP: 4.2.2 – Table 1<br>PE: 4.3.2 - Table 2 | Once / year / PP - PE used compound<br>Once / 6 month per non-virgin PP-PE used compound |
| Melt mass flow rate PP and PE | PP: 4.2.2 – Table 1<br>PE: 4.3.2 - Table 2 | Once / year / PP – PE used compound |
| Thermal stability, OIT | PP: 4.2.2 – Table 1<br>PE: 4.3.2 - Table 2 | Once / year/ PP-PE used compound |
| Impact resistance for sizes<br>> DN/OD 315 ≤ DN/OD 630 and<br>> DN/ID 300 ≤ DN/ID 600 | 9.1 – Table 10 | Once / size group / stiffness class/year |
| **The joints of type TP pipes** | | |
| Tightness of elastomeric sealing ring joints b) c) | 10 – Table 11 | Once / 2 year / stiffness class / size group / joint design |

a) To be tested in pipe form on one optional diameter
b) Joint design at least includes: seal design, groove geometry, sealing ring material and seal hardness (± 5 IHRD).
c) The test shall be carried out using EN ISO 13259 Condition D with 10% deformation of the socket and 15% deformation of the spigot and the angular deflection specified in the standard.

### 8.4 Audit test, AT

Audit testing shall be performed by the test laboratory on behalf of the certification body and includes determination of the characteristics listed in Table 9 with the specified minimum sampling frequencies.

**Table 9 Characteristics and minimum sampling frequencies for AT**

| Characteristic | Reference to clauses and tables of NPG/PS116 | Sampling procedure (minimum sampling) |
|---|---|---|
| **Pipes** | | |
| Resistance to internal pressure<br>a) | PP: 4.3.2 – Table 2<br>PE: 4.4.2 - Table 3 | Once / year / used compound |
| Melt mass flow rate | PP: 4.3.2 – Table 2<br>PE: 4.4.2 - Table 3 | Once / year / used compound |
| Appearance and colour | 6 and 7 | Once / year / size group / stiffness class |
| Dimensions<br>Pipe diameter and wall thickness; socket depth, wall thickness and diameters | 8 – tables 3, 4, 5, 6 and 7 | Once / year / size group / stiffness class |
| Dimensions of intake openings | 8.4.1.2 Table 8 and 9 as applicable | Once / year / size group / stiffness class |
| Intake area | 8.4.1.3 | Once / year / size group / stiffness class |
| Impact resistance | 9 – Table 10 | Once / year / size group |
| Ring stiffness | 9 – Table 10 | Once / year / size group |
| Ring flexibility | 9 – Table 10 | Once / year / size group |
| Sealing ring | 4.5 | Check of documentation / material |
| Marking | 11- Table 12 | Once / year / size group / stiffness class |
| **The joints of type TP pipes** | | |
| Tightness of elastomeric sealing ring joints<br>b) c) | 10 – Table 11 | Once / 2 year / size group / joint design |
| When testing fitness for purpose characteristics of pipes and their joints they shall be mounted in accordance with the system suppliers mounting and installation instructions.<br>To be tested in pipe form on an optional diameter<br>Joint design at least includes seal design, groove geometry, sealing ring material and seal hardness (± 5 IHRD).<br>The test shall be carried out using EN ISO 13259 Condition D with 10% deformation of the socket and 15% deformation of the spigot and the angular deflection specified in the standard. | | |

## 9 ANNEXES

Annex A Inspection bodies and test laboratories
Annex B Nordic marking

# ANNEX A

This annex forms part of the Specific Rules.

## INSPECTION BODIES AND TESTING LABORATORIES

### 1 Inspection body

An inspection body accredited according to ISO 17020 shall assess the manufacturer's internal routines specified in clause 4.1.2 and 4.3.1.

The certification body is responsible for the approval of the inspection body.

### 2 Test laboratories

Type testing and audit testing of plastic pipes for certification in conformity with the requirements of NPG/PS 116 shall be performed by a test laboratory accredited according to ISO 17025.

The accreditation shall include the test standards stated in NPG/PS 116.

In case no test laboratory mentioned in Annex A can perform one or more tests accredited, these tests can be accepted as non-accredited, if agreed with INSTA-CERT.

### 3 Organisations approved for inspection (I) and testing (P)

Norner AS (I)
Dokkvegen 20

NO-3920 Porsgrunn
www.norner.no

Inspecta Sertifiointi Oy (I)
Sörnäistenkatu 2
P.O Box 1000
FI-00581 Helsinki
www.kiwa.com/fi

RISE Research Institutes of Sweden AB (I)
Certification
Box 857
SE-515 15 Borås
www.ri.se

Dancert A/S (I)

Gregersenvej 4
DK-2630 Taastrup
www.dancert.dk

RISE Research Institutes of Sweden AB (P/I)
Built Environment – Pipe centre
Box 24036
SE-400 22 Göteborg
www.ri.se

Eurofins Expert Services Oy (P/I)

P.O. Box 47
FI-02151 Espoo
www.eurofins.fi/expertservices

Danish Technological Institute (DTI) (P/I)
Energy and Climate
VA Testing and Inspection
Kongsvang Alle 29
DK-8000 Aarhus C
www.dti.dk

## ANNEX B

This annex forms part of the Specific Rules.

Nordic conformity mark for products according to this
INSTA-CERT SBC
is