Proposal INSTA-CERT SBC EN 14758-1

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Specific rules for Nordic certification in accordance with EN 14758-1 *Plastics piping systems for non-pressure underground drainage and sewerage – Polypropylene with mineral modifiers (PP-MD) – Part 1: Specifications for pipes, fittings and the system*

· INSTA-CERT ·

Specific rules for certification in accordance with EN 14758-1

Plastics piping systems for non-pressure underground drainage and sewerage – Polypropylene with mineral modifiers (PP-MD) – Part 1: Specifications for pipes, fittings and the system

Foreword

EN 14758-1 specifies the requirements for a drainage and sewerage piping system made of PP-MD. The piping system is intended to be used outside the building structure (application area code ”U”) and buried in ground under the building structure and outside the building (marked with ”UD”).

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

- Updated according to IC SBC Template No. 14
- Updated according to latest version of EN 14758-1
- New tables for manufacturer’s type testing have been introduced
- Relevant definition from EN 14541-1 has been introduced

References

INSTA-CERT GRC	General Rules for Certification provided by INSTA-CERT
EN 14758-1:2023	Plastics piping systems for non-pressure underground drainage and sewerage - Polypropylene with mineral modifiers (PP-MD) – Part 1: Specifications for pipes, fittings and the system
CEN/TS 14758-2:2016	Plastics piping systems for non-pressure underground drainage and sewerage. Polypropylene with mineral modifiers (PP-MD). Part 2: Guidance for the assessment of conformity
EN 14541-1	Plastics pipes and fittings - Utilisation of thermoplastics recyclates - Part 1: Vocabulary

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 of EN 14758 -1.

Own reworked 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 CERTIFICATE

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 and fittings mentioned in the application, e.g. dimension, stiffness class, fitting type, etc.
The application shall include:

- Accredited reports covering type tests (testing and inspection) according to clause 4.1 and description of each component intended to be covered in 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 4A, 5A and 6A.
- Information concerning the material in pipes and fittings, 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 the 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 fitting system.

3 CERTIFICATE

The certificate will be issued when the type test reports prove that the requirements of EN 14758-1 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 10, 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 10, Audit test. The certificate may be issued as soon as 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 Table 1.

Table 1 The scope of certification

Application area / Ring stiffness class and dimension (mm)			
UD/SN4	**UD/SN8**	**U/SN4**	**U/SN8**
110	110		
125	125		
160	160		
200	200		
		250	250
		315	315
		400	400
		500	500
		630	630
		800	800
		1000	1000

Pipes and fittings are classified in size groups according to Table 2 below.

Table 2 Size groups for pipes and fittings

Mean outside diameter d_n (mm)	Size group
110 – 200	1
250 - 500	2
630 - 1000	3

Fittings are divided into groups according to Table 3 below.

Table 3 Fitting groups

Fitting type	Fitting group
Bends	1
Branches	2
Other fittings	3

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 at change of production conditions, 4.5

4.1 Type testing and inspection

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

If the mixture ratios of the compound, or some of the material types are changed, exceeding tolerances stated in 8.1.1, it is considered a change of the compound.

The values of the parts (X_i) shall be specified by the manufacturer in the quality system.

4.1.1 Type testing

Pipes and fittings included in the application shall be type tested to the extent stated in tables 4A, 4B, 5A, 5B, 6A, 6B and C 1. 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 and fittings fulfil all the requirements. The type test report shall state the designation of compound and the sealing rings used in the tested pipes and fittings.

4.1.2 Initial inspection

The initial inspection shall be performed by an accredited 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 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 and fittings included in the certificate fulfill the requirements of EN 14758-1 and this SBC.

The internal testing is performed partly as a batch release test (BRT) with the minimum content as stated in tables 7, 8 and C.1, and partly as a process verification test (PVT) performed according to Table 9. 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 and fittings do not fulfill the requirements, the manufacturer/ certificate holder must immediately initiate the necessary corrective actions to ensure that the products fulfill 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 and fittings shall be performed normally twice per 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 test 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 clause 4.1.2.
- Check of availability of installation manual/guidance.
- Check the traceability of own reworked 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 clause 4.3.2.

4.3.2 Audit testing

Testing shall be performed according to tables 10 and C.1 covering pipes and fittings with sizes representative for the manufacturer's production. All test results shall be documented in a report stating the designation of the compound and sealing rings used for the tested pipes and fittings.

4.3.3 Results of 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 4A, 4B,5A, 5B, 6A, 6B and C1 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 and fittings included in the certificate shall at least be marked with:

1. The conformity mark, see Annex B
2. Information according to EN 14758-1 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 fees and annual fees can be provided 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/test 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 pipes and fittings according to this SBC EN 14758-1 is available on INSTA-CERT's homepage www.insta-cert.net.

8 TESTING EXTENT

8.1 Type testing

Relevant type testing according to tables 4A, 4B, 5A, 5B, 6A, 6B and C.1 shall be performed for each PP-MD compound, and when changes of 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-MD

The raw material requirements specified in this INSTA-CERT SBC apply for both U and UD application.

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

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

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 compound, it is considered a new compound.

Table 4A Characteristics of pipes that require type testing by the pipe manufacturer

Characteristic	Reference to clauses and tables of EN 14758-1	Manufacturer's type testing frequency				Number of test pieces	Number of measure-ments 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 group, fitting group or new SN)		
Melt mass-flow rate (MFR-value)	4.3	Once / compound		Once / compound		1	1
Resistance to internal pressure b)	4.5 – Table 1	Once / compound / size group		Once / compound / size group		3 (1 for sizes ≥ 250 mm)	1
Appearance – covered by BRT	5.1	Once / size	Once / size		Once / size	1	1
Colour – covered by BRT	5.2	Once / size	Once / size		Once / size	1	1
Geometrical characteristics – covered by BRT Pipe diameter and wall thickness; socket depth, wall thickness and diameters	6.2, 6.4 and 6.5 – tables 2, 3, 4 and 5	Once / size	Once / size		Once / size	1	1
Ring stiffness	7.1 – Table 6	Once / SN class / compound		Once / SN class / compound	Once / new size group and/or SN class	3	1
Ring flexibility	7.1.2	Once / SN class / compound		Once / SN class / compound	Once / new size group and/or SN class	3	1
Impact resistance (staircase method) –10 °C	7.1.3 – Table 7	Once / compound		Once / compound	Once / compound	Min. 20	1
Longitudinal reversion	8.1 – Table 9	Once / size		Once / size	Once / size	3	1
Sealing rings	11	Control of documentation / material		Control of documentation / material			
Marking – covered by BRT	11.2 – Table 12	c)					

a) For definition of change of compound see clause 8.1.1.

b) The pressure test shall be carried out according to EN ISO 1167-1, and the test pressure shall be calculated based on the measured dimensions of each test piece. If several test pieces are connected to the same test position, the highest test pressure shall be used.

c) 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 compound used, processing parameters etc. is secured. This marking shall be reflected in the report.

Table 4B Characteristics of pipes that require type testing by the third party

Characteristic	Reference to clauses and tables of EN 14758-1	3rd part type testing frequency				Number of test pieces	Number of measure-ments per test piece
		New	Change of design (only changes having influence on the jointing and/or performance of the pipe)	Change of compound a)	Extension (New size group or new SN class)		
The content of the minerals (Ash residue) EN ISO 3451-1		Once / compound		Once / compound		1	1
Melt mass-flow rate (MFR-value)	4.3	Once / compound		Once / compound		1	1
Resistance to internal pressure b)	4.5 – Table 1	Once / compound / size group		Once / compound / size group		3 (1 for sizes ≥ 250 mm)	1
Appearance	5.1	Pipes from which samples for testing as specified below and in table 6 is taken				1	1
Colour	5.2						
Geometrical characteristics Pipe diameter and wall thickness; socket depth, wall thickness and diameters	6.2, 6.4 and 6.5 – tables 2, 3, 4 and 5						
Ring stiffness	7.1 – Table 6	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 SN class	3	1
Ring flexibility	7.1.2	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 SN class	3	1
Impact resistance (staircase method) –10 °C	7.1.3 – Table 7	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 SN class	Min. 20	1
Longitudinal reversion	8.1 – Table 9	1 diameter / size group, but at least two diameters shall be tested		1diameter / size group, but at least two diameters shall be tested	1 diameter / new size group and/or SN class	3	1
Sealing rings	11	Control of documentation / material		Control of documentation / material			
Marking	11.2 – Table 12	c)					

a) For definition of change of compound see clause 8.1.1.

b) The pressure test shall be carried out according to EN ISO 1167-1, and the test pressure shall be calculated based on the measured dimensions of each test piece. If several test pieces are connected to the same test position, the highest test pressure shall be used.

c) 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 compound used, processing parameters etc. is secured. This marking shall be reflected in the report.

Table 5A Characteristics of fittings that require type testing by the fitting manufacturer

Characteristic	Reference to clauses and tables of EN 14758-1	Manufacturer's type testing frequency				Number of test pieces	Number of measur e-ments per test piece
		New	Change of design (only changes influencing the jointing and/or performance of the pipe)	Change of compound e)	Extension (New size group, fitting group or new SN)		
The content of the minerals (Ash residue) EN ISO 3451-1		Once / compound		Once / compound		1	1
Melt mass-flow rate (MFR-value) d)	4.3	Once / compound		Once / compound		1	1
Resistance to internal pressure a) d)	4.5 – Table 1	Once / compound		Once / compound		3	1
Appearance – covered by BRT	5.1	Once / each fitting	Once / each fitting		Once / each fitting	1	1
Colour – covered by BRT	5.2	Once / each fitting	Once / each fitting		Once / each fitting	1	1
Geometrical characteristics – covered by BRT Spigot diameter, length and wall thickness; socket depth, wall thickness and diameters	6.2, 6.4 and 6.5 – tables 2, 3, 4 and 5	Once / each fitting	Once / each fitting		Once / each fitting	1	1
Ring stiffness	7.2 - Table 8	Once / each fitting	Once / each fitting	Once / each fitting	Once / each fitting	3	1
Flexibility or mechanical strength c)	7.2 - Table 8	Once / each fitting	Once / each fitting	Once / size group / fitting group	Once / each fitting	3	1
Impact resistance (drop test)	7.2 - Table 8	Once / each fitting	Once / each fitting		Once / each fitting	3	1
Effect of heating b)	8.2 – Table 10	Once / each fitting	Once / each fitting	Once / each fitting	Once / each fitting	3	1
Sealing rings	11	Control of documentation / material		Control of documentation / material		n.a.	n.a.
Marking – covered by BRT	11.3 – Table 13	Once / each fitting			Once / each fitting	1	1

a) On an optional diameter.
b) Only for injection-moulded parts.
c) Only fabricated fittings
d) Where the fitting compound is the same as the pipe compound, this test shall only be done once.
e) For definition of change of material see clause 8.1.1.

Table 5B Characteristics of fittings that require type testing by the third party

Characteristic	Reference to clauses and tables of EN 14758-1	3rd part type testing frequency				Number of test pieces	Number of measure - ments per test piece
		New	Change of design (Only changes having influence on the jointing and/or performance of the fitting)	Change of compound f)	Extension (New size group, fitting group or new SN class)		
The content of the minerals (Ash residue) EN ISO 3451-1		Once / compound		Once / compound		1	1
Melt mass-flow rate (MFR-value) f)	4.3	Once / compound		Once / compound		1	1
Resistance to internal pressure a) e)	4.5 – Table 1	Once / compound		Once / compound		3	1
Appearance	5.1	Once / size group / fitting group	Once / size group/ fitting group	Once / size group / fitting group	Once / new size group / fitting group and/or SN class	1	1
Colour	5.2	Once / size group /fitting group	Once / size group / fitting group	Once / size group / fitting group	Once / new size group / fitting group and/or SN class	1	1
Geometrical characteristics Spigot diameter, length and wall thickness; socket depth, wall thickness and diameters	6.2, 6.4 and 6.5 – tables 2, 3, 4 and 5	Once / size group / fitting group	Once / size group / fitting group	Once / size group / fitting group	Once / new size group / fitting group and/or SN class	1	1
Ring stiffness	7.2 - Table 8	Once / size group / fitting group	Once / size group / fitting group	Once / size group / fitting group	Once / new size group / fitting group and/or SN class	3	1
Flexibility or mechanical strength c)	7.2 - Table 8	Once / size group/ fitting group	Once / size group/ fitting group	Once / size group / fitting group	Once / new size group / fitting group and/or SN class	3	1
Impact resistance (drop test)	7.2 - Table 8	Once / size group / fitting group	Once / size group / fitting group	Once / size group / fitting group	Once / new size group / fitting group	3	1
Effect of heating b)	8.2 – Table 10	Once / size group / fitting group	Once / size group / fitting group	Once / size group / fitting group	Once / new size group / fitting group and/or SN class	3	1
Sealing rings	11	Control of documentation / material		Control of documentation / material			
Marking	11.3 – Table 13	d)					

a) On an optional diameter.
b) Only for injection-moulded parts.
c) Only fabricated fittings
d) 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 compound used, processing parameters etc. is secured. This marking shall be reflected in the report.
e) Where the fitting compound is the same as the pipe compound, this test shall only be done once.
f) For definition of change of material see clause 8.1.1.

Table 6A Characteristics of fitness for purpose of the system that require type testing by the manufacturer

Characteristic	Reference to clauses and tables of EN 14758-1	Manufacturer's type testing frequency				Number of test pieces	Number of measure-ments per test piece
		New	Change of design (only changes having influence on the jointing)	Change of compound	Extension (New size group, fitting group or new SN)		
Tightness of elastomeric sealing ring joints a) b)	9 – Table 11	Once / size / joint design c)	Once / size / joint design c)		Once / size / joint design c)	1	1
Elevated temperature cycling	9 – Table 11	Once / compound / joint design on the smallest SN produced in size group 1 c)	Once / compound / joint design on the smallest SN produced in size group 1 c)	Once / compound / joint design on the smallest SN produced in size group 1 c)		1 set	1

a) The tightness test shall be carried out using EN ISO 13259 Condition D with 10% deformation of the socket and 15% deformation on the spigot and the angular deflection specified in the standard.

b) A certificate covering a size group may be issued when one size group has been successfully tested. The other sizes and classes shall be tested at the first production of the particular size / class

c) Joint design at least includes seal design, groove geometry and seal hardness (± 5 IHRD).

Table 6B Characteristics of fitness for purpose of the system that require type testing by the third party

Characteristic	Reference to clauses and tables of EN 14758-1	3rd part type testing frequency				Number of test pieces	Number of measure-ments per test piece
		New	Change of design (Only changes having influence on the jointing)	Change of compound	Extension (New size group, fitting group or new SN class)		
Tightness of elastomeric sealing ring joints a) b)	9 – Table 11	Once / pipe series / size / joint design c)	Once / pipe series / size / joint design c)		Once / new SN class / size / joint design c)	1	1
Elevated temperature cycling	9 – Table 11	Once / compound/ joint design on the smallest SN produced in size group 1 c)	Once / compound/ joint design on the smallest SN produced in size group 1 c)	Once / compound/ joint design on the smallest SN produced in size group 1 c)	If the new size group is 1 or a lower SN is introduced: Once / compound/ joint design on the smallest SN produced c)	1 set	1
Resistance to combined temp. cycling and external loading – Method A EN ISO 13260 d) e) f)		One pipe and one branch from size group 1 with lowest SN / compound	One pipe and one branch from size group1 with lowest SN / compound	One pipe and one branch from size group 1 with lowest SN / compound	If the new size group is 1: One pipe and one branch dimension 110, 160 or 200 with lowest SN / compound	1	1

a) The tightness test shall be carried out using EN ISO 13259 Condition D with 10% deformation of the socket and 15% deformation on the spigot and the angular deflection specified in the standard.
b) A certificate covering a size group may be issued when one size has been successfully tested. The other sizes and classes shall be tested at the first production of the particular size/class.
c) Joint design at least includes seal design, groove geometry, sealing material and seal hardness (± 5 IRHD).
d) The following requirements apply:
   - vertical deformation: ≤ 9%
   - deviation from surface evenness in bottom: ≤ 3 mm
   - radius of bottom: ≥ 80% of original
   - opening of weld line: ≤ 20% of wall thickness
   - tightness at 0.35 bar/15 minutes: No leakage allowed.
e) If there are no branches in the programme the bend with the largest angle shall be used. If there are no fittings in the programme a pipe joint shall be tested.
f) For approval of new and/or modified sealing rings the Resistance to combined temperature cycling and external load test is not required.

8.2 Batch Release Test, BRT

Batch release testing shall be performed by the manufacturer and includes determination of the characteristics listed in tables 7 and 8 with the specified minimum sampling frequencies. For fittings made of approved pipes, the BRT shall be performed in accordance with Table C.1.

A production batch shall be released for delivery only when the BRT shows conformity with the requirements of EN 14758-1 and this SBC. The maximum extent of a production batch without change of material or dimension is seven days for pipes and seven days for fittings.

If a product is rejected due to lack of the quality stated in tables 7, 8 or C.1, the batch shall be scrapped or a re-test 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 requirements specified in EN 14758-1 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 plan.

Table 7 Characteristics of pipes and minimum sampling frequencies for BRT

Characteristic	Reference to clauses and tables of EN 14758-1	Sampling procedure (minimum sampling)
Appearance / colour	5.1 and 5.2	At start up and change of compound and/colour. Then continuously, but no registration
Mean outside diameter	6.2 – tables 2 and 3	At start up and continuously or every 8 h
Wall thickness	6.2 – Table 4	At start up and continuously or every 8 h
Socket dimensions – socket depth, wall thickness and diameter a)	6.5 – Table 5	At start up
Impact resistance (staircase method) at -10 °C If 5 samples are tested at 1,5 meter fall height without failure all full test is not necessary	7.1. - Table 6	At start up and week
Ring stiffness	7.1. – Table 6	At the first production of a size not included in the type test
Ring flexibility	7.1.2 – Table 6	At the first production of a size not included in the type test
Longitudinal reversion	8.1 – Table 9	At start up and week
Marking	11.2 – Table 12	At start up and week. Then continuously, but no registration
a) For dimensions which are influenced by the process.		

Table 8 Characteristics of fittings and minimum sampling frequencies for BRT

Characteristic	Reference to clauses and tables of EN 14758-1	Sampling procedure (minimum sampling)
Appearance / colour	5.1 and 5.2	Once / cavity / 8 h
Spigot dimensions – wall thickness and diameter a)	6.4 – tables 2, 3 and 4	Once / cavity / 8 h
Socket dimensions – socket wall thickness and diameter a)	6.5 – Table 5	Once / cavity / 8 h
Ring stiffness	8.2 – Table 8	At the first production of a product not included in the type test.
Water tightness b)	9.2 – Table 10	One sample for each batch / 8 h
Marking	11.3 – Table 13	Once per cavity at start up and by change of marking
a) For dimensions which are influenced by the process b) Only fabricated fittings		

8.3 Process verification test, PVT

Process verification testing shall be performed by the manufacturer and includes determination of the characteristics listed in Table 9 with the specified minimum sampling frequencies. For fittings made of approved pipes, the PVT shall be performed in accordance with Table C.1.

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 9, 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 system.

Table 9 Characteristics and minimum sampling frequencies for PVT

Characteristic	Reference to clauses and tables of EN 14758-1	Sampling procedure (minimum sampling)
Pipes		
Melt mass-flow rate (MFR-value)	4.3	Once / year /compound
Resistance to internal pressure a)	4.5 – Table 1	Once / year / varying compounds
Ring stiffness	7.1 – Table 8	Once / year / size group / stiffness class / compound
Fittings		
Melt mass-flow rate (MFR-value) b)	4.3	Once / year / compound
Resistance to internal pressure a) b)	4.5 – Table 1	Once / year / compound
Effect of heating d)	8.2 – Table 10	Once / year / size group / fitting group
The system		
Tightness of elastomeric sealing ring joints c) e)	9 – Table 11	Once / 2 year / stiffness class / dimension / joint design

a) To be tested in pipe form on an optional diameter.
b) Where the fitting compound is the same as the pipe compound, this test shall only be done once.
c) Joint design at least includes seal design, groove geometry and seal hardness (± 5 IHRD)
d) Only for injection moulded parts.
e) The tightness test shall be carried out using EN ISO 13259 Condition D with 10% deformation of the socket and 15% deformation on the spigot and the angular deflection specified in the standard.

8.4 Audit test, AT

Audit testing shall be performed by the testing laboratory on behalf of the certification body and includes determination of the characteristics listed in Table 10 with the specified minimum sampling frequencies. For fittings made of approved pipes, the AT shall be carried out in accordance with Table C.1.

Table 10 Characteristics and minimum sampling frequencies for AT

Characteristic	Reference to clauses and tables of EN 14758-1	Sampling procedure (minimum sampling)
Pipes		
The content of the minerals (Ash residue) EN ISO 3451-1 g)		Once / year / compound
Melt mass-flow rate (MFR-value)	4.3	Once / year
Resistance to internal pressure	4.5 – Table 1	Once / year / size group
Appearance and colour	5.1 and 5.2	Once / year / size group / stiffness class
Geometrical characteristics Pipe diameter and wall thickness; socket depth, wall thickness and diameters	6.2, 6.4 and 6.5 – tables 2, 3, 4 and 5	Once / year / size group / stiffness class
Impact resistance (staircase method) –10 °C	7.1. – Table 6	Once / year / size group / stiffness class

Ring stiffness	7.1. – Table 6	Once / year / size group / stiffness class
Ring flexibility	7.1.2 – Table 6	Once / year / size group / stiffness class
Longitudinal reversion	8.1 – Table 9	Once / year / size group / stiffness class
Sealing rings	11	Control of documentation / material
Marking	11.2 – Table 12	Once / year / size group / stiffness class
Fittings		
The content of the minerals (Ash residue) EN ISO 3451-1 g)		Once / year / compound
Melt mass-flow rate (MFR-value)	4.3	Once / year
Resistance to internal pressure a) b)	4.5 – Table 1	Once / year varying compounds
Appearance and colour	5.1 and 5.2	Once / year / size group / fitting group
Geometrical characteristics Spigot diameter, length and wall thickness; socket depth, wall thickness and diameters	6.4.1 and 6.4.3 – tables 2, 3, 4, 5	Once / year / size group / fitting group
Drop test	7. 2 – Table 8	Once / 2 years / size group / fitting group / stiffness class
Flexibility or mechanical strength – fabricated fittings d)	7. 2 – Table 8	Once / 2 years / size group / fitting group
Effect of heating e)	8.2 – Table 10	Once / year / size group / fitting group
Sealing rings	11	Control of documentation / material
Marking	11.3 - Table 13	Once / year / size group / fitting group
The system		
Tightness of elastomeric sealing ring joints c) f)	9 – Table 11	Once / year / size group / joint design
Elevated temperature cycling c)	9 – Table 11	Once / 2 year / joint design

a) To be tested in pipe form on the smallest diameter produced.

b) Not to be repeated for fitting compound when the compound is the same as for pipes and already tested for that purpose.

c) Joint design at least includes seal design, groove geometry and seal hardness (± 5 IHRD)

d) Only for fabricated fittings.

e) Only for injection moulded parts.

f) The tightness test shall be carried out using EN ISO 13259 Condition D with 10% deformation of the socket and 15% deformation on the spigot and the angular deflection specified in the standard.

g) Comparison with the filler content of the type tested compound and the tolerance given in 8.1.1.

9 ANNEXES

Annex A Inspection bodies and test laboratories

Annex B Nordic marking

Annex C Testing and inspection of swept bends and double sockets made of pipes

ANNEX A

This annex forms part of the Specific Rules.

INSPECTION BODIES AND TEST 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 and fittings for certification in conformity with the requirements of EN 14758-1 shall be performed by a test laboratory accredited according to ISO 17025.

The accreditation shall include the test standards stated in EN 14758-1.

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

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

RISE Research Institute of Sweden AB
Certification (I)
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
Built Environment– Pipe centre (P/I)
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

ANNEX C

This annex forms part of the Specific Rules.

Testing and inspection of swept bends and double sockets made of pipes

C.1 Grouping

For the purpose of this Annex, the groups specified in Clause 3 apply.

C.2 Testing and inspection

The pipes used for manufacturing of swept bends and double sockets shall be certified by INSTA-CERT according to EN 14758-1. The testing and inspection described in Table C.1 must be fulfilled.

Table C.1 Testing of swept bends and double sockets

Characteristic	Reference to part and clause of EN 14758-1	Type testing	BRT	PVT	AT
Appearance	5.1	Once per size group	At start up and once per production batch	n.a.	Once per size group/ year
Colour	5.2	Once per size group	At start up and once per production batch	n.a.	Once per size group/ year
Geometrical characteristics – Pipe diameter and wall thickness Socket depth, wall thicknesses and diameters	6.2 and 6.5	Once per size group	At start up and once per production batch	n.a.	Once per size group/ year
Marking	11.3	Once per size group	At start up and once per production batch	n.a.	Once per size group/ year