

**Specific Rules for Nordic Certification in
accordance with *EN 1329-1 Plastics piping systems
for soil and waste discharge within the building
structure – Unplasticized poly(vinyl chloride) (PVC-U)*
– *Part 1: Specifications for pipes, fittings and the
system***

• INSTA-CERT •

Specific rules for certification in accordance with EN 1329-1

Plastics piping systems for soil and waste discharge within the building structure – Unplasticized poly(vinyl chloride) (PVC-U) – Part 1: Specifications for pipes, fittings and the system

Foreword

EN 1329-1 specifies the requirements for a piping system for soil and waste discharge (low and high temperature) made from PVC. The piping system intended to be used within the building structure (marked with "B") and for waste discharge within and under the building structure (marked with "BD").

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 1329-1 and CEN/TS 1329-2
- New tables for Manufacturers 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
- EN1329-1:2020 Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure. Unplasticized poly(vinyl chloride) (PVC-U) – Part 1: Specifications for pipes, fittings and the system
- CEN/TS 1329-2:2021 Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure. Unplasticized poly(vinyl chloride) (PVC-U). Part 2: Assessment of conformity
- EN 14541-1:2022 Plastics pipes and fittings - Utilisation of thermoplastics recyclates - Part 1: Vocabulary

1 CONDITIONS FOR CERTIFICATION

The issuing of a certificate requires that the applicant commits himself 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 EN 1329-1.

Products made from external pre- and post-consumer materials cannot be certified under the INSTA-CERT system.

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.

Lead stabilised PVC products cannot be certified under the INSTA-CERT system.

By "solid wall piping systems" it is meant that the wall has the same formulation throughout the entire wall.

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 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, 6A and 7A.
- 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 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 1329-1 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 11, 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 11, 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 Table 1.

Table 1 The scope of certification

Application area / S series and dimension (mm)			
BD / S14	BD / S16	B / S14	B / S16
		32	32
		40	40
		50	50
75	75		
90	90		
110	110		
125	125		
160	160		

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

Table 2 Size groups for pipes and fittings

Nominal outside diameter d_n (mm)	Size group
32 - 50	1
75 - 160	2

Fittings are divided into groups according to below Table 3.

Table 3 Fitting groups

Fitting group	Fitting type
1	Bends
2	Branches
3	Other fittings

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

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

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

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 Table 5A, 5B, 6A, 6B, 7A and 7B. 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 the material 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 fulfil the requirements of EN 1329-1 and this SBC.

The internal testing is performed partly as a batch release test (BRT) with the minimum content as stated in Tables 8 and 9 of this SBC, and partly as a process verification test (PVT) performed according to Table 10. The documentation of the testing shall be kept for at least 10 years.

The certificate holder/manufacturer is responsible for ensuring that the instructions concerning the 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
- Formulation identification/designation
- Batch number
- Date of production

If the tested pipes and fittings 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 and fittings shall be performed normally twice per year by an approved 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.
- Check 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 of 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 4.3.2.

4.3.2 Audit testing

The testing shall be performed according to Table 11 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 material 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 action 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 formulation, design or production methods

The certificate holder shall inform the certification body of all changes of formulations, design and production methods in advance. Tables 5A, 5B, 6A, 6B, 7A and 7B describe the extent of the control caused by the changes.

The certificate holder is not allowed to mark any changed product 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 1329-1 clause 13
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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 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 compounds, pipes and fittings according to EN 1329-1 is available on the 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, 6B, 7A and 7B shall be performed for each material used, and when changes of construction, changes of material and/or production method are taking place. Characteristics with given frequency are tested by an approved test laboratory.

8.1.1 Material specification, PVC-U

The raw material requirements specified in this INSTA SBC apply for both B and D applications.

For the purpose of this SBC the material specification consists of a formulation which defines the types of PVC-U and additives and their dosage level. The dosage levels of ingredients shall not exceed the tolerance bands given in Table 4. If any level exceeds the dosage tolerance band, or if a type is changed, this variation in formulation constitutes a change of the material.

Lead stabiliser systems are not included in Table 4 in this SBC and such systems cannot be certified under the INSTA-CERT system.

Table 4 Formulation of raw material mixture, PVC-U

Component	Type	Range
PVC resin	Nominal K value; as specified	+3 units
Type of stabilizer or master batch	Ca-Zn Sn Ca-Sn Other	$X_1: \pm 25 \%$
Lubricants	All	$X_2: \pm 50 \%$ if $X_2 \leq 0,2$ $X_2: \pm 0,1 \text{ phr}$ if $X_2 > 0,2$
Fillers	CaCO ₃ Others	$X_3: \pm 3 \text{ phr}$ $X_4: \pm 25 \%$
Impact modifiers	All	$X_5: \pm 1 \text{ phr}$
Flow agents	All	$X_6: \pm 25 \%$ if $X_6 \leq 2$ $X_6: \pm 0,5 \text{ phr}$ if $X_6 > 2$
Pigments	No requirements	-
Other components	To be separately specified by the manufacturer	$X_{7\dots n}: \pm 12.5 \%$

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

Characteristic	Reference to clauses and tables of EN 1329-1:2020	Manufacturers 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)		
K-value EN ISO 13229 Min. 64.0		Once / formulation	-	Once / formulation	-		
PVC content	5.1 and 5.2	One calculation / formulation	-	One calculation / formulation	-		
Resistance to internal pressure b)	5.2 – Table 2	Once / formulation / size group	-	Once / formulation / size group	-	3	1
Appearance – covered by BRT	6.1	Once / size	Once / size		Once / new size	1	1
Colour – covered by BRT	6.2	Once / size	Once / size		Once / new size	1	1
Dimensions - covered by BRT Pipe diameter and wall thickness; socket depth, wall thickness and diameters	7.2 and 7.4 – Tables 5, 7, 11, 15, 16 and 17	Once / size	Once / size		Once / new size	1	1
Impact resistance Size group1 (round the clock; at 0 °C)	8.1.1 – Tables 20, 21 and 22	Once / size formulation		Once / formulation	Once / new size		
Impact resistance Size group 2 (staircase method at -10 °C)	8.1.1 – Table 23	Once / formulation		Once / formulation	Once / new size	Min 20	1
Vicat softening temperature (VST)	9.1 – Table 24	Once / formulation		Once / formulation		2	1
Longitudinal reversion	9.1 – Table 24	Once / size		Once / size	Once / new size	3	1
Resistance to dichloromethane at a specified temperature	9.1 – Table 24	Once / size / formulation		Once / formulation	Once / new size	3	1
Sealing rings	11	Control of documentation / material		Control of documentation / material		n.a	n.a
Marking – covered by BRT	13.2 – Table 27	Once / size		Once / size	Once / new size	1	1

a) For definition of change of material, see clause 8.1.1 in this SBC.
 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.

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

Characteristic	Reference to clauses and tables of EN 1329-1:2020	3rd party 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 a)	Extension (new size group)		
K-value EN ISO 13229 Min. 64.0		Once / formulation		Once / formulation			
PVC content	5.1 and 5.2	One calculation / formulation		One calculation / formulation			
Resistance to internal pressure c)	5.2 – Table 2	Once / formulation / size group		Once / formulation / size group		3	1
Appearance	6.1	Pipes from which samples for testing as specified below and in Table 7B is taken				1	1
Colour	6.2						
Dimensions Pipe diameter and wall thickness; socket depth, wall thickness and diameters	7.2 and 7.4 – Tables 5, 7, 11 15 and 16						
Impact resistance Size group 1 (round the clock at 0 °C)	8.1.1 – Tables 20, 21 and 22	1 diameter / size group, but at least two diameters shall be tested		1 diameter / size group, but at least two diameters shall be tested	Once / new size group		
Impact resistance Size group 2 (staircase method at -10 °C)	8.1.1 – Table 23	1 diameter / size group, but at least two diameters shall be tested		1 diameter / size group, but at least two diameters shall be tested	Once / new size group	Min 20	1
Vicat softening temperature (VST)	9.1 – Table 24	Once / formulation		Once / formulation		2	1
Longitudinal reversion	9.1 – Table 24	Once / size group, but at least two diameters shall be tested		Once / size group, but at least two diameters shall be tested	Once / new size group	3	1
Resistance to dichloromethane at a specified temperature	9.1 – Table 24	1 diameter / size group, but at least two diameters shall be tested		1 diameter / size group, but at least two diameters shall be tested	Once / new size group	3	1
Sealing rings	11	Control of documentation / material		Control of documentation / material		n.a	n.a
Marking	13 – Table 27	b)					

a) For definition of change of material, see clause 8.1.1 in this SBC.

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 the quality plan in a clear way so that traceability to all necessary data for the material used, process parameters etc. are secured. This marking shall be reflected in the report.

c) 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.

Table 6A Characteristics of fittings that require type testing by the fitting manufacturer

Characteristic	Reference to clauses and tables of EN 1329-1:2020	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 a)	Extension (new size)		
K-value EN ISO 13229 Min. 64.0		Once / formulation		Once / formulation			
PVC content	5.1	One calculation / formulation		One calculation / formulation			
Resistance to internal pressure d)	5.3 – Table 3	Once / formulation / size group		Once / formulation / size group		3	1
Appearance covered by BRT	6.1	Once / each fitting	Once / each fitting		Once / each new fitting	1	1
Colour covered by BRT	6.2					1	1
Dimensions covered by BRT Spigot diameter, length and wall thickness; socket depth, wall thickness and diameters	7.3 and 7.4 – Tables 5, 11, 15, 16 and 17	Once / each fitting	Once / each fitting		Once / each new fitting	1	1
Application area BD Flexibility or mechanical strength b) EN 1401-1:2019 Clause 8.2.2 – Table 13	8.2	Once / each fitting	Once / each fitting	Once / size group / fitting group	Once / each new fitting	1	1
Application area BD Impact resistance (drop test) EN 1401-1:2019 Clause 8.2.2 – Table 13	8.2	Once / each fitting	Once / each fitting		Once / each new fitting	1	1
Vicat softening temperature (VST)	9.2 – Table 25	Once / formulation		Once / formulation		2	1
Effect of heating c)	9.2 – Table 25	Once / each fitting	Once / each fitting	Once / size group / fitting group	Once / each new fitting	3	1
Watertightness b)	9.2 – Table 25	Once / each fitting	Once / each fitting		Once / each new fitting	1	1
Sealing rings	11	Control of documentation / material		Control of documentation / material		n.a	n.a
Marking – covered by BRT	13.3 – Table 28	Once / each fitting		Once / each fitting			

a) For definition of change of material, see clause 8.1.1 in this SBC.
b) Only fabricated fittings.
c) Only for injection-moulded parts.
d) 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

Table 6B Characteristics of fittings that require type testing by the third party

Characteristic	Reference to clauses and tables of EN 1329-1:2020	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 fitting)	Change of formulation a)	Extension (new size group or fitting group BD only)		
K-value EN ISO 13229 Min. 64.0		Once / formulation		Once / formulation	Once / formulation		
PVC content	5.1	One calculation / formulation			One calculation / formulation		
Resistance to internal pressure e)	5.3 – Table 3	Once / formulation		Once / formulation		3	1
Appearance	6.1	Once / fitting group	Once / fitting group		Once / new fitting group	1	1
Colour	6.2	Once / fitting group	Once / fitting group		Once / new fitting group	1	1
Dimensions Spigot diameter, length and wall thickness; socket depth, wall thickness and diameters	7.3 and 7.4 – Tables 5, 11, 15, 16 and 17	Once / size group/fitting group	Once / size group/fitting group	Once / size group/fitting group	Once / new size group and/or new fitting group	1	1
Application area BD Flexibility or mechanical strength b) EN 1401-1:2019 Clause 8.2.2 – Table 13	8.2	Once / size group/fitting group	Once / size group/ fitting group	Once / size group/fitting group	Once / new size group and/or new fitting group	1	1
Application area BD Impact resistance (drop test) EN 1401-1:2019 Clause 8.2.2 – Table 13	8.2	Once / fitting group	Once / fitting group	Once / fitting group	Once / new fitting group or new	1	1
Vicat softening temperature (VST)	9.2 – Table 25	Once / formulation		Once / formulation		2	1
Effect of heating c)	9.2 – Table 25	Once / size group/fitting group	Once / size group/ fitting group	Once / size group/ fitting group	Once / new size group and/or new fitting group	3	1
Watertightness b)	9.2 – Table 25	Once / fitting group	Once / fitting group		Once / fitting group	1	1
Sealing rings	11	Control of documentation / formulation		Control of documentation / formulation			
Marking	13.3 – Table 28	d)					

a) For definition of change of material, see clause 8.1.1.
 b) Only fabricated fittings.
 c) Only for injection-moulded parts.
 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 material used, processing parameters etc. is secured. This marking shall be reflected in the report.
 e) 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.

Table 7A Characteristics of fitness for purpose of the system that require type testing by the manufacturer

Characteristic	Reference to clauses and tables of EN 1329-1:2020	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	Extension (new size)		
Watertightness a)	10 – Table 26	Once / size / joint design b)	Once / size / joint design b)		Once / new size / joint design b)	1	1
Airtightness a)	10 – Table 26	Once / size / joint design b)	Once / size / joint design b)		Once / new size / joint design b)	1	1
Application area BD Tightness of elastomeric sealing ring joints a) c)	10 – Table 26	Once / size / joint design on the smallest produced wall thickness b)	Once / size / joint design on the smallest produced wall thickness b)		Once / new size / joint design on the smallest produced wall thickness b)	1	1
Application area B Elevated temperature cycling	10 – Table 26	Once / formulation / joint design on the smallest produced wall thickness b)	Once / formulation / joint design on the smallest produced wall thickness b)	Once / formulation / joint design on the smallest produced wall thickness b)		1 set	1
Application area BD Elevated temperature cycling	10 – Table 26	Once / formulation / joint design on the smallest produced wall thickness b)	Once / formulation / joint design on the smallest produced wall thickness b)	Once / formulation / joint design on the smallest produced wall thickness b)		1 set	1

a) 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

b) Joint design at least includes seal design, groove geometry, sealing material and seal hardness (± 5 IRHD)

c) The tightness test shall be carried out using EN 1277 or 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.

Table 7B Characteristics of fitness for purpose of the system that require type testing by the third party

Characteristic	Reference to clauses and tables of EN 1329-1:2020	3rd party 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 fitting)	Change of formulation	Extension (new size group or fitting group)		
Water tightness a)	9 – Table 24	Once / size / joint design b)	Once / size / joint design b)		Once / new size / joint design b)	1	1
Air tightness a)	9 – Table 24	Once / size / joint design b)	Once / size / joint design b)		Once / new size / joint design b)	1	1
Application area BD Tightness of elastomeric sealing ring joints a) c)	9 – Table 24	Once / size / joint design b)	Once / size / joint design b)		Once / new size / joint design b)	1	1
Application area B Elevated temperature cycling	9 – Table 24	Once / material / joint design on the lowest stiffness produced b)	Once / material / joint design on the lowest stiffness produced b)	Once / material / joint design on the lowest stiffness produced b)	Once / material / joint design if lower stiffness b)	1 set	1
Application area BD Elevated temperature cycling	9 – Table 24	Once / material / joint design on the lowest stiffness produced b)	Once / material / joint design on the lowest stiffness produced b)	Once / material / joint design on the lowest stiffness produced b)	Once / material / joint design on lowest stiffness produced b)	1 set	1
Application area BD Resistance to combined temp. cycling and external loading – EN ISO13260:2011/A1: 2017 d) e) f)		One pipe and one branch from dimension 110, 125 or 160 / formulation	One pipe and one branch from dimension 110, 125 or 160 / formulation	One pipe and one branch from dimension 110, 125 or 160 / formulation		1	1
<p>a) A certificate covering a size group may be issued when one size in that size group has been successfully tested. The other sizes shall be tested at the first production</p> <p>b) Joint design at least includes seal design, groove geometry, sealing material and seal hardness (± 5 IHRD).</p> <p>c) The tightness test shall be carried out using EN 1277 or 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.</p> <p>d) The following requirements apply: - vertical deformation: $\leq 9\%$ - deviation from surface evenness in bottom: ≤ 3 mm - radius of bottom: $\geq 80\%$ of original - opening of weld line: $\leq 20\%$ of wall thickness - tightness at 0.35 bar/15 minutes: No leakage allowed</p> <p>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.</p> <p>f) For approval of new and/or modified sealing rings the Resistance to combined temp. cycling and external loading test is not required.</p>							

8.2 Batch Release Test, BRT

Batch release testing shall be performed by the manufacturer and includes determination of the characteristics listed in tables 8 and 9 with the specified minimum sampling frequencies.

A production batch shall be released for delivery only when the BRT shows conformity with the requirements of EN 1329-1 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 8 and 9, 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 the requirements specified in EN 1329-1 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 8 Characteristics of pipes and minimum sampling frequencies for BRT

Characteristic	Reference to clauses and tables of EN 1329-1:2020	Sampling procedure (minimum sampling)
Appearance/colour	6.1 and 6.2	At start up and then every 8h
Mean outside diameter	7.2.1- Table 5	At start up and continuously or every 8 h
Wall thickness	7.2.5 – Table 7	At start up and continuously or every 8 h
Socket dimensions – socket depth, wall thickness and diameter a)	7.3.4.3 Table 11 and 7.4.2 – Tables, 15, 16 and 17	At start up and every 8h
Impact resistance (round the clock) at 0 °C Size group 1	8.1.1 – Tables 20 and 21	At start up and 24 h
Impact resistance (staircase method) at -10 °C Size group 2 If 5 samples are tested at 1.5 meter fall height without failure all full test is not necessary	8.1.2 – Table 23	At start up and 24 h
Longitudinal reversion	9.1 – Table 24	At start up and week
Resistance to dichloromethane at a specified temperature	9.1 – Table 24	At start up and 24 h
Marking	13.2- Table 27	At start up and week. Then continuously, but no registration
a) For dimensions which are influenced by the process.		

Table 9 Characteristics of fittings and minimum sampling frequencies for BRT

Characteristic	Reference to clauses and tables of EN 1329-1:2020	Sampling procedure (minimum sampling)
Appearance/colour	6.1 and 6.2	Once per cavity at start up and then every 8 h
Spigot dimensions – wall thickness and diameter a)	7.3.2 Table 5 and 7.3.4 Table 9	Once per cavity at start up and then every 8 h
Socket dimensions – wall thickness and diameters a)	7.3.4.3 Table 11 and 7.4.2 tables 15, 16 and 17	Once per cavity at start up and then every 8 h
Spigot length and socket depth	7.4.2 – tables 15, 16 and 17	Once per cavity at start up and then every 8 h
Effect of heating c)	9.2 – Table 25	Once per cavity at start up and then every 24 h
Water tightness b)	9.2	One sample for each fitting group per 8h
Marking	13.3 - Table 28	Once per cavity at start up and by change of marking
a) For dimensions which are influenced by the process. b) Only fabricated fittings c) Only for injection moulded parts		

8.3 Process verification test, PVT

Process verification testing shall be performed by the manufacturer and includes determination of the characteristics listed in Table 10 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 10, the retest procedures detailed in the manufacturer’s quality plan 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 10 Characteristics and minimum sampling frequencies for PVT

Characteristic	Reference to clauses and tables of EN 1329-1:2020	Sampling procedure (minimum sampling)
Pipes		
Resistance to internal pressure	5.2 – Table 2	Once / year / formulation varying size groups
Vicat softening temperature (VST)	9.1 – Table 24	Once / year / formulation
Fittings		
Resistance to internal pressure a)	5.3– Table 3	Once / year / formulation
Vicat softening temperature (VST)	9.2 – Table 25	Once / year / formulation
The system		
Water tightness c)	10 – Table 26	Once / 2 years / dimension / joint design
Air tightness c)	10 – Table 26	Once / 2 years / dimension / joint design
Application area BD Tightness of elastomeric sealing ring joints b) c)	10 – Table 26	Once / 2 years / formulation / joint design / applicable series with lowest wall thickness
a) To be tested in pipe form on an optimal diameter. b) 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 c) Joint design at least includes seal design, groove geometry, sealing material and seal hardness (± 5 IHRD).		

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 11 with the specified minimum sampling frequencies.

Table 11 Characteristics and minimum sampling frequencies for AT

Characteristic	Reference to clauses and tables of EN 1329-1:2014	Sampling procedure (minimum sampling)
Pipes		
K-value - EN ISO 13229 Min. 64.0	-	Once / year / formulation (check of documentation)
PVC content	5.1 Table 1	Once / year / formulation (check of recipe)
Resistance to internal pressure	5.2 – Table2	Once / year / size group
Appearance and colour	6.1 and 6.2	Once / year / size group
Dimensions Pipe diameter and wall thickness; socket depth, wall thickness and diameters	7.2.1 Table 5, 7.2.5 Table 7, 7.3.4.3 Table 11 and 7.4.2 tables 15, 16 and 17	Once / year / size group
Impact resistance Size group 1 (round the clock method; 0°C)	8.1.1 – tables 20 and 21	Once / year / size group
Impact resistance Size group 2 (staircase method; -10°C)	8.1.2 Table 23	Once / year / size group
Vicat softening temperature (VST)	9.1 – Table 24	Once / year
Longitudinal reversion	9.1 – Table24	Once / year / size group
Resistance to dichloromethane at a specified temperature	9.1 – Table 24	Once / year / size group
Sealing ring	11	Check of documentation/material
Marking	13.2- Table 27	Once / year / size group
Fittings		
K-value - EN ISO 13229 Min. 64.0	-	Once / year / formulation (check of documentation)
PVC content	5.1 Table 1	Once / year / formulation (check of recipe)
Resistance to internal pressure	5.3 – Table 3	Once / year
Appearance and colour	6.1 and 6.2	Once / year / size group / fitting group
Dimensions Spigot diameter, length and wall thickness; socket depth, wall thickness and diameters	7.3.2 Table 5, 7.3.4.3 Table 11 and 7.4.2 tables 15, 16 and 17	Once / year size group / fitting group
Application area BD Impact resistance (drop test) EN 1401-1:2019 Clause 8.2.2 – Table 13	-	Once / 2 years size group / fitting group
Vicat softening temperature (VST)	9.2 – Table 25	Once / year
Application area BD Flexibility or mechanical strength a) EN 1401-1:2019 Clause 8.2.2 – Table 13		Once / year / size group / fitting group
Effect of heating b)	9.2 – Table 25	Once / year / size group / fitting group
Sealing ring	11	Check of documentation / material
Marking	13.3 – Table 28	Once / year / size group / fitting group

The system		
Water tightness	10 – Table 26	Once year / size group
Air tightness	10 – Table 26	Once / year / size group
Application area BD Tightness of elastomeric sealing ring joints c) d)	10 – Table26	Once / year / size group / joint design
Application area B Elevated temperature cycling d)	10 – Table26	Once / 2 years / joint design
Application area BD Elevated temperature cycling	10 – Table 26	Once / 2 years / joint design on the smallest wall thickness produced
a) Only fabricated fittings b) Only for injection moulded parts. 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. d) Joint design at least includes seal design, groove geometry, sealing material and seal hardness (± 5 IHRD).		

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 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 in EN 1329-1 shall be performed by a testing laboratory accredited according to ISO 17025.

The accreditation shall include the testing standards stated in EN 1329-1.

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 Dokkvegen 20 NO-3920 Porsgrunn www.norner.no	(I)	Inspecta Sertifiointi Oy Sörnäistenkatu 2 P.O Box 1000 FI-00581 Helsinki www.kiwa.com/fi	(I)
RISE Research Institutes of Sweden AB Certifiering Box 857 SE-515 15 Borås www.ri.se	(I)	Dancert A/S Gregersenvej 4 DK-2630 Taastrup www.dancert.dk	(I)
RISE Research Institutes of Sweden AB Built Environment – Pipe centre Box 24036 SE-400 22 Göteborg www.ri.se	(P/I)	Eurofins Expert Services Oy P.O. Box 47 FI-02151 Espoo www.eurofins.fi/expertservices	(P/I)
Danish Technological Institute (DTI) Energy and Climate VA Testing and Inspection Kongsvang Alle 29 DK-8000 Aarhus C www.dti.dk	(P/I)		

ANNEX B

This annex forms part of the Specific Rules.

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

