Certification Programme ZP 8124 of DVGW CERT GmbH, Bonn

Piping Systems made of PVC-U in accordance with DIN EN ISO 1452 for Water Supply

0 Preliminary Remark

This certification programme (ZP) applies to plastic piping systems made of plasticised polyvinyl chloride (PVC-U) in accordance with DIN EN ISO 1452 for the supply of water with a maximum permissible operating pressure (PFA) of up to and including 25 bar. It continues the certification of pipes and fittings made from PVC-U in accordance with DVGW worksheet GW 335-A1, following its withdrawal in November 2024.

The dimensional groups of DIN CEN/TS 1452-7 apply to pipes and their connections.

1 : Dimension groups for pipes and connections

Dimension group	Nominal diameter d_n [mm]
1	d_n < 75
2	75 ≤ d_n < 250
3	250 ≤ d_n < 710
4	710 ≤ d_n < 1000

The fitting/valve groups and the associated fitting types according to DIN CEN/TS 1452-7 are listed in Table 2.

Table2 : Assignment of fitting types to fitting/valve groups

Fitting/valve groups	Fitting type
1	Elbows
2	Angles, T-pieces
3	Other fittings (reducing sleeves, double sleeves, end caps, transition pieces, etc.)
4	Fittings

1 Certification Procedure

Products Water national (non-harmonised European area)

2 Accreditations

An accreditation No. D-ZE-16028-01 exists for the procedure at German accreditation body (die Deutsche Akkreditierungsstelle GmbH) (DAkkS), Berlin.

3 Certification Marks

DVGW or DIN-DVGW certification mark Products

Registration number scheme:
DW-8124DQ0001 or NW-8124DQ0001

DW = DVGW certification mark for water,
NW = DIN-DVGW certification mark for water,
8124 = Product code, DQ = 2025, 0001 = Serial number

4 Type of Certificate and Test Procedure

Type examination certificate (valid for 5 years)

5 Scope

The following tables contain the product codes within the scope of the ZP for the classification of components.

Table3 : Product codes for PVC pressure pipes within the scope of the ZP

Product group	Product code	Product type
Plastic pressure pipes for supply lines	81 24	PVC-U pipes for water supply, dimension group 1
	81 29	PVC-U pipes for water supply, dimension group 2
	81 34	PVC-U pipes for water supply, dimension group 3
	81 39	PVC-U pipes for water supply, dimension group 4

4 table: Product codes for fittings within the scope of the ZP

Product group	Product code	Product type
Plastic fittings and clamp connectors	86 21	PVC-U moulded fittings for water distribution, size group 1
	86 22	PVC-U fittings for water distribution, size group 2
	86 23	PVC-U fittings for water distribution, size group 3
	86 24	PVC-U fittings for water distribution, size group 4

Table5 : Product codes for tapping shut-off valves within the scope of application of the ZP

Product group	Product code	Product type
Gas and water tapping valves	66 07	Water tapping shut-off fitting for PVC-U pipes, outlet: dimension group 1[1)]
	66 13	Gas-water tapping shut-off valve for PVC pipes, outlet: dimension group 1[1)]

Table6 : Product codes for material transition connectors within the scope of application of the ZP

Product group	Product code	Product type
Material transition connector	75 13	Transition to PVC for drinking water pipes[2)]
	75 14	Transition to PVC-U for gas and drinking water pipes[2)]

Table7 : Product codes for fittings within the scope of the ZP

Product group	Product code	Product type
Fittings for water supply	62 11	Shut-off fittings made of PVC-U

6 Testing Laboratories

Testing laboratories accredited in accordance with EN ISO/IEC 17025 for the relevant test bases and contractually bound to DVGW CERT GmbH.

[1]) DVGW W 336 must be observed when shutting off tapping fittings for PVC pipes.
[2]) DVGW GW 335-B4 must be observed, where applicable.

7 Requirements

7.1 Mechanical Requirements:

The relevant chapters of

- DIN EN ISO 1452-2 for PVC-U pipes,
- DIN EN ISO 1452-3 for PVC-U fittings,
- DIN EN ISO 1452-4 for PVC-U fittings,

in conjunction with

- DIN EN ISO 1452-1 for the compound or moulding compound,
- DIN EN ISO 1452-5 for the suitability for use of the system and
- DIN CEN/TS 1452-7 for conformity assessment.

7.2 Hygiene Requirements:

Materials that come into contact with drinking water must be hygienically safe and must not impair the quality of drinking water as specified in the Drinking Water Ordinance. Products that come into contact with drinking water must have certificates of conformity in accordance with the recommendation of the Federal Environment Agency (UBA): "Recommendation on the confirmation of conformity of the suitability of products for drinking water hygiene". If the products are made of materials that do not fall within the scope of the UBA's assessment basis, the materials must comply with relevant standards and guidelines, provided that these are applicable within the framework of fulfilling the requirements of the Drinking Water Ordinance. If these technical standards or guidelines require tests as proof of suitability for drinking water hygiene, this must be demonstrated by test reports from an accredited testing laboratory.

7.3 Requirements for Product Documentation

For testing and certification, the manufacturer must submit product documentation in German or English with the following scope:

- Drawings with dimensions and tolerances,
- dimension group,
- parts lists with material specifications, material certificates, installation instructions, operating instructions, labelling, etc.,
- Welding parameters and cooling time,
- For heating coil fittings: nominal value of electrical resistance or welding code for automatic welding detection in accordance with ISO 13950, materials and dimensions of the connection,
- Processing parameters for adhesive joints, list of adhesives
- Quality inspection plan for production-accompanying tests for the products in question (see Chapter 9.2)

8 Initial Inspection of the Manufacturing Facility

Before issuing the type examination certificate, an initial inspection of the manufacturing facility must be carried out. The inspector appointed by the certification body must satisfy himself that the manufacturer has the personnel and equipment necessary for the consistent and proper manufacture and Surveillance of the components. An inspection report must be drawn up for this purpose. Existing test reports, e.g. those carried out as part of Surveillance or UBA-BWGL audits on similar products at the manufacturer's plant, may be accepted.
The documentation relating to the tests specified in DIN CEN/TS 1452-7, Table 4 for moulding compounds, Table 5 for pipes, Table 6 for fittings and Table 7 for the serviceability of the system in the "Manufacturer" column must be checked on a random basis during the initial inspection of the production facility.

9 Tests

9.1 Type Examination (Type Testing)

The scope of the tests relevant for certification of moulding compound, component and system is specified by conditions N, D, M, E[3)].

- N for the initial test/type test of a new moulding compound or a new system,
- M for changes to the moulding compound or its preparation,
- D for changes to the design of the component,
- E for the extension of the product group.

According to this, the scope of testing is specified in accordance with DIN CEN/TS 1452-7 for

- the moulding compound in Table 4[4)] ,
- the pipes in Table 5,
- the fittings and accessories in Table 6,
- the serviceability of the system in Table 7.

In the event of changes to the manufacturing process that go beyond the usual internal process settings or adjustments, or in the event of a change of production site, the scope of the tests must be agreed individually between the certifier and the manufacturer, depending on the effects.

The manufacturer shall commission a testing centre that meets the requirements of Chapter 6 of this certification programme to carry out the type test. The scope of the tests is specified in accordance with the "sampling procedure" in DIN CEN/TS 1452-7, Tables 4, 5, 6 and 7. The manufacturer shall generally send test samples to the testing laboratory commissioned to carry out the type test ( ). Alternatively, the testing laboratory may take the samples in consultation with the manufacturer.

3) Nomenclature in accordance with Tables 4 to 7 of DIN CEN/TS 1452-7.
4) With regard to the classification and verification of the material, analyses based on earlier editions of ISO 9080 may be used in accordance with Note 2 in Section 4.4 of DIN EN ISO 1452-1. For stabiliser types tested and positively evaluated within the framework of the GKR test programme 2000, proof of long-term strength in accordance with DIN EN ISO 9080 is deemed to have been provided. The pipe or fitting manufacturer must ensure that proof of long-term stability is provided for all stabiliser types used by them and disclosed to DVGW CERT GmbH.

The testing centre carries out the tests in accordance with the "Certification body" column in Tables 4, 5, 6 and 7 of DIN CEN/TS 1452-7 and prepares a type test report. Existing type test, supplementary test and control test reports in accordance with DVGW GW 335-A 1[5)]for pipes or fittings may be recognised for type testing in accordance with DIN EN ISO 1452 if no changes have been made to the component and system, the production process or the test basis in the meantime. The following time limits apply to the recognition of reports in accordance with DVGW GW 335-A1:

- The last type test report must not be older than 15 years.
- Supplementary test reports must not be older than the last type test report.
- Inspection reports must not be older than 5 years.

If reports on type, supplementary or control tests of an existing certification according to DVGW GW 335-A1 are taken into account for the type test according to DIN EN ISO 1452, the interval until the next complete type test (15 years) is transferred to the certificate according to DIN EN ISO 1452. Supplementary tests for pipes certified in accordance with DVGW GW 335-A1 are specified in Appendix A of this ZP. For fittings that are not manufactured from PVC-U pipes in accordance with DVGW GW 335-A1, a complete type test in accordance with DIN EN ISO 1452-3 and DIN EN ISO 1452-5 is generally required.

9.2 Factory Production Control by the Manufacturer (Self-Surveillance)

The manufacturer must carry out its own production checks in such a way that a reliable assessment of production is possible. To this end, the manufacturer shall draw up a quality inspection plan. The checks in accordance with the quality inspection plan must be documented. The documentation must be kept available for Surveillance checks (external Surveillance).

The scope and frequency of self-Surveillance tests are as follows

- Tapping fittings with shut-off according to DVGW W 336 and
- material transition connectors with PVC-metal transition in accordance with DVGW GW 335-B4.

9.2.1 Batch Release Tests (BRT)

The scope and frequency of the tests for the release test (BRT) are specified for

- moulding compounds in accordance with DIN CEN/TS 1452-7, Table 8[6)] ,
- pipes according to DIN CEN/TS 1452-7, Table 9[7)] and
- Fittings and valves according to DIN CEN/TS 1452-7, Table 10[7)] .

5) Withdrawn in November 2024.
6) Proof of the VCM content of the resin, batch-related by the resin manufacturer, e.g. by means of an acceptance certificate 3.1 in accordance with EN 10204 or an equivalent test report.
7) BRT: Alternative test condition to 1 h at 20 °C in the internal pressure test according to DIN 8061, Table 1 applicable: 11.5 MPa at 60 °C, requirement≥ 165 h.

9.2.2 Process Verification Tests (PVT)

The scope and frequency of process verification (PVT) are specified for

- moulding compounds in accordance with DIN CEN/TS 1452-7, Table 11[8)] ,
- pipes according to DIN CEN/TS 1452-7, Table 12,
- Fittings and valves according to DIN CEN/TS 1452-7, Table 13 and
- the serviceability of the system according to DIN CEN/TS 1452-7, Table 14.

9.3 Surveillance Test / Audit Test (AT – External Surveillance)

The purpose of external Surveillance is to check the manufacturer's internal Surveillance based on its organisation and records and to verify that the manufactured product complies with the original type.

The scope and frequency of the tests for the surveillance test (AT) are specified for

- moulding compounds in accordance with DIN CEN/TS 1452-7, Table 15,
- Pipes according to DIN CEN/TS 1452-7, Table 16,
- Fittings and valves according to DIN CEN/TS 1452-7, Table 17,
- the serviceability of the system in accordance with DIN CEN/TS 1452-7, Table 18,
- tapping fittings with shut-off according to DVGW W 336,
- Material transition connectors with PVC-metal transition according to DVGW GW 335-B4.

Sampling is carried out by a representative of the testing centre, usually at the manufacturer's production facility or central warehouse.

The provisions described in the "Rules of Procedure for the Certification of Products in the Non-Harmonised Area" of DVGW CERT GmbH (hereinafter referred to as the DVGW CERT Rules of Procedure) in the section "Surveillance Procedure" apply. The "control test" procedure is to be used for this certification programme.

10 Labelling

Labelling is carried out in accordance with the requirements of the applicable product standards in the section "Labelling" and supplementary requirements from the DVGW CERT Rules of Procedure in accordance with the section "Labelling".

8) Verification corresponds to PVT for pipes in accordance with Table 12 of DIN CEN/TS 1452-7 and can alternatively be provided by the pipe manufacturer.

11 Applicable Documents

In the case of undated references, the current edition of the following documents applies.

- DVGW CERT GmbH <40014>
  Rules of procedure of DVGW CERT GmbH for the certification of products in the Non-harmonised area
- DVGW CERT GmbH <51000>
  Certification programme ZP 1000 – “Attestation of Conformity of the hygienic Suitability of Drinking Water according to the 1+ System”
- Recommendation of the Federal Environment Agency: Recommendation for attestation of conformity of product hygiene suitability for drinking water. Status: 29 July 2021
- DVGW GW 335-A1:2003-06
  Kunststoff-Rohrleitungssysteme in der Gas- und Wasserverteilung - Anforderungen und Prüfungen - Teil A1: Rohre und daraus gefertigte Formstücke aus PVC-U für die Wasserverteilung, einschließlich Korrekturblatt aus Juni 2006
- DVGW GW 335-B4:2014-04
  Kunststoff-Rohrleitungssysteme in der Gas- und Wasserverteilung - Teil B4: Metallene Formstücke mit mechanischen oder Steckmuffenverbindungen für die Wasserverteilung - Anforderungen und Prüfungen
- DVGW W 336:2013-10
  Wasseranbohrarmaturen; Anforderungen und PrüfungenDIN 8061:2016-05
  Pipes made of unplasticised polyvinyl chloride (PVC-U) – General quality requirements, testing
- DIN EN ISO 1452- :2010-04
  Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure - Unplasticized poly(vinyl chloride) (PVC-U)
  - Part 1: General,
  - Part 2: Pipes,
  - Part 3: Fittings,
  - Part 4: Valves,
  - Part 5: Fitness for purpose of the system,
- DIN CEN/TS 1452-7:2014-05 / DIN SPEC 19675:2014-05
  Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure - Unplasticized poly(vinyl chloride) (PVC-U) - Part 7: Guidance for the assessment of conformity
- Kunststoffrohrverband e.V., Das Langzeitverhalten von PVC-U-Rohren mit unterschiedlicher Stabilisierung, Bonn, Dezember 2005

12 Period of Validity

This certification programme is valid from 10.09.2025.

13 Annex A (informative): Supplementary Tests for Pipes Certified according to GW 335-A1

Comparison of type testing/design type testing of PVC-U **pipes** according to DVGW GW 335-A1, Table 5 incl. correction sheet vs. DIN CEN/TS 1452-7, Table 5.
The additional scope of testing can be seen in the fields marked with .
For certification according to this ZP, the scope of testing according to DIN CEN/TS 1452-7 must be verified.

Standard	**DVGW GW 335-A1 + correction sheet** a)			**DIN CEN/TS 1452-7**			
Requirements for materials / moulding compounds	x			x: - VCM content of the resin < 1 ppm b) - Contact with drinking water, see section 7.2 - Classification, see footnote4)			
Requirements/tests on the pipe	EG1	EG 2	EG 3	AG 1	AG 2	AG 3	AG 4
Properties / Surface properties	x	x	x	x	x	x	x
Colour	x	x	x	x	x	x	x
Dimensions / geometric properties	x	x	x	x	x	x	x
External impact stress according to EN 744[9])	x	x	x	x	x	x	x
Warm storage / longitudinal shrinkage	x	x	x	x	x	x	x
Dichloromethane resistance / Degree of gelation	x c)	x c)	x c)	x	x	x	x
Vicat softening temperature DIN EN 727/ DIN EN ISO 2507-1	x	x	x	x d)			
Creep internal pressure test (60 °C / 1,000 h) DIN EN ISO 1167-1/-2	x	x	x	x	x	x	x
Creep internal pressure test (60 °C / 5 h) DIN EN ISO 1167-1/-2	x	x	x	-	-	-	-
Creep internal pressure test (60 °C / 1 h) DIN EN ISO 1167-1/-2	x	x	x	-	-	-	-
Creep internal pressure test (20 °C / 1 h) DIN EN ISO 1167-1/-2	x	x	x	x	x	x	x
Creep internal pressure test (20 °C / 100 h) DIN EN ISO 1167-1/-2	x	x	x	-	-	-	-
Creep internal pressure test (20 °C / 1000 h) DIN EN ISO 1167-1/-2	x	x	x	-	-	-	-
Creep internal pressure test, moulded sockets (20 °C / 1 h) DIN EN ISO 1167-1/-2	-	-	-	x e)	x e)	x e)	x e)
Density ISO 1183-1	-	-	-	x	x	x	x
Material classification / MRS value	x			x f)			
Sealing rings according to EN 681-1	-			x g)	x g)	x g)	x g)
Adhesives according to ISO 1452-5 and ISO 93111	-			x			
Requirements for moulding compounds/preparations for components in contact with drinking water	x	x	x	x h)	x	x	x

[9]) Replaced by DIN EN ISO 3127

Opacity of pipes for above-ground transport of water	-	-	-	x	x	x	x

EC Product group
AG Dimension group

Key:

x	This is a requirement specified in the standard.
-	No requirement is specified in the standard.

	The requirements specified in both standards are identical. No additional tests are required.
	There are differences between the two standards, but no additional tests are required because, for example, no or fewer requirements are specified in DIN CEN/TS 1452-7.
	There are differences between the two standards that require additional tests.

Further details on tests are specified in the following footnotes.

Footnotes:

a) Including correction sheet from June 2006 for GW 335-A1
b) Verification of manufacturer results
c) according to procedure B
d) Testing of 3 test specimens. The number of test specimens must be specified in the manufacturer's quality control plan.
e) For $d_n \leq 90$ mm: p = 4.2 x PN; for $d_n \geq 90$ mm: p = 3.36 x PN
f) Not necessary if already carried out by the manufacturer of the starting material or if the formula is covered by the KRV programme. See also footnote 3.
g) Per ring material. Only applies to pipes with push-fit socket connections. Requirements according to EN 681-1 must be met.
h) Reference to requirements of national regulations