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Test Report

„Type test (TT) PP-R fitting“

Short title:

„ Type test (TT) PP-R fitting“



Deutsche
Akkreditierungsstelle
D-PL-13119-02-00

Test Report No.: V241/20-4

Order No.: 402300098

Issued by Department Pipe Systems

Laboratory for Pipe System Testing

Recognised test laboratory of DVGW, DIN CERTCO and DIBt

The recognitions are valid for the test methods stated in the attachments of certificates of approval
DVGW LW-BU0023, DIN CERTCO PL121 and DIBt SAC 08

Test Report

Type Test (TT) PP-R fitting

Test Report No.: V241/20-4

Test Location: Am Lagerplatz 4 / 01099 Dresden
GERMANY

Test Specimen: PP-R fittings, Type S-SK
- Dimension Ø 20 mm: elbow 90°, T-piece, coupling
AG ½", coupling
- Dimension Ø 25 mm: elbow 90°, T-piece, coupling
AG ½", coupling
- Dimension Ø 32 mm: elbow 90°, T-piece, coupling
AG ½", coupling

Customer: Dizayn Teknik Boru ve Ekipmanlari San. Tic. A.S.
Atatürk Mah. İnönü Cad. No. 6
34522 Kirac,Esenyurt / Istanbul
TURKEY

Order no. of the Customer: -

Test Laboratory: IMA Materialforschung und Anwendungstechnik GmbH
Laboratory for Pipe System Testing
Wilhelmine-Reichard-Ring 4 / 01109 Dresden
GERMANY

Sampling: 10.07.2019

Test Specimen received on: 08.11.2019

Test Period: 05.08.2020 – 26.11.2020

Test Result: see page 4 to 6

In Charge: Dipl.-Ing. Jule Isabel Isleif

Distribution List: 1 x Customer
1 x IMA Dresden

Authorized
Dresden, 15.12.2020
IMA Materialforschung und
Anwendungstechnik GmbH



Dipl.-Ing. Heiko Below
Head of Department Pipe Systems

The test results refer exclusively to the specimen under test.

Rounded measurement or calculation values are based on the rule according to ISO 80000-1 Appendix B, Rule B.

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1. Task definition

Type Test based on the standard:

- DVGW Worksheet W 534 (P) (July 2015)

2. Requirements

- DVGW W 534 (P) (July 2015), Annex 8

Table 1: Requirements according to DVGW W 534

Characteristics	Requirements and testing according to section
Hygienic test	-
Marking	DVGW W 534, 13
Appearance and homogeneity	DVGW W 534, 12.2
Dimensions and tolerances	DVGW W 534, 12.1
Melt mass flow rate (MFR)	DVGW W 534, 10.2.4
Resistance to internal pressure	DVGW W 534, 11.2 and 12.10
Low-pressure	DVGW W 534, 12.4
Shock pressure test	DVGW W 534, 12.5
Temperature cycling test	DVGW W 534, 12.6
Reverse bending cycle test	DVGW W 534, 12.9

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3. Test specimen

- Manufacturer: Dizayn Teknik Plastic Pipes & Fittings Co
Velimese Beldesi Kazan ve Sanayi Top. Is Kooperatifi 5 Ada 4 Parsel
Corlu/ Tekirdag
TURKEY
- Material: Borealis RA 130E
- Dimensions: see table 2
- Marking: see table 2

Table 2: Test specimens, dimensions and marking

Dimension	Marking
Ø 20 mm: elbow 90°, T-piece, coupling AG ½", coupling	DIZAYN Ø20 1/2" 5 PPR
Ø 25 mm: elbow 90°, T-piece, coupling AG ½", coupling	DIZAYN Ø25 15 PPR
Ø 32 mm: elbow 90°, T-piece, coupling AG ½", coupling	DIZAYN Ø32 1" 9 PPR

4. Results

4.1 Results dimension Ø 20 mm, Ø 25 mm and Ø 32 mm

Table 3: Results dimension Ø 20 mm, Ø 25 mm and Ø 32 mm

Characteristics	Test equipment / ID-No./ Person in charge	Test result	Evaluation
Hygienic test	/	No test execution	n.a.
Marking	M. Lasch	Corresponds to the demands.	+
Appearance and homogeneity	M. Lasch	The internal and external surfaces of fittings are smooth, clean and free from damages, cavities and other surface defects. Color: white	+

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Characteristics	Test equipment / ID-No./ Person in charge	Test result	Evaluation			
Dimensions and tolerances	WDM 369137 / UFM 2017/3244 IPT / M. Lasch	Test according to DIN EN ISO 3126:2005-03	+			
		Characteristic		Set value	Actual value	
		Middle inside diameter of the socket mouth		D _{1 min} [mm]	19,2 to 19,5	19,3
		Mean inside diameter of the socket root		D _{2 min} [mm]	19,0 to 19,3	19,2
		Minimum diameter of the flow channel		D _{3 min} [mm]	≥ 15,2	17,1
		Maximum ovality		ovality _{max} [mm]	≤ 0,4	0,2
		Minimum socket length		L _{1 min} [mm]	≥ 14,5	15,1
Melt mass flow rate (MFR)	CEAST MMF 7026 / M. Lasch	Test according to DIN EN ISO 1133-1:2012-03 Temperature: 230°C Nominal load: 2,16 kg Actual value granulate: 0,270 g/10min ¹⁾ Actual value fitting: 0,260 g/10min Set value change: ≤ 30% < 0,2 g/10 min Actual value change: 4% 0,01 g/10 min	+			
Resistance to internal pressure / strength of plastic fitting body	Pipe test apparatus - PMK B122/22-B2 / pressure stations 134/1 / 109/01 / 119/1 /115/1 / S. Janowski	Test according to DIN EN ISO 1167-1/-2:2006-05 / water-in-water Set value: 20,0°C / 64 bar / ≥ 1 h Actual value: 20,0°C / 64 bar / > 1 h Set value: 95,0°C / 14 bar / ≥ 1.000 h Actual value: 95,0°C / 14 bar / > 1.000 h Set value: 95,0°C / 5 MPa / ≥ 1 h Actual value: 95,0°C / 5 MPa / > 1 h Set value: 95,0°C / 3,5 MPa / ≥ 1.000 h Actual value: 95,0°C / 3,5 MPa / > 1.000 h	+			
Leak-tightness under vacuum	Pipe test apparatus - PMK B173/1 - B2 / S. Janowski	Test according to DVGW W 534, 12.4 Set value: 23,0°C / -0,8 bar / ≥ 1 h Actual value: 23,0°C / -0,8 bar / > 1 h	+			

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Characteristics	Test equipment / ID-No./ Person in charge	Test result	Evaluation
Shock pressure test	Pressure cycling device PMK B173/B2 / S. Janowski	Test according to DVGW W 534, 12.5 Test temperature: (23,0±2)°C Test pressure minimum: (1±0,5) bar Test pressure maximum: (25±0,5) bar Frequency of cycles: (30±5) min ⁻¹ Set value: ≥ 10.000 cycles Actual value: 10.000 cycles	+
Temperature cycling test	Temperature cycling device TWPA+, PMK B198-B2 / J. Drechsel	Test according to DVGW W 534, 12.6 Test temperature cold: (20,0±2)°C Test temperature warm: (93,0±2)°C Pressure value: (Frequency of cycles: (30±2) min ⁻¹ Set value: ≥ 5.000 cycles Actual value: 5.000 cycles	+
Reverse bending cycle test	Pressure cycling device, PMK B173/3-B2 / V. Clauß	Test according to DVGW W 534, 12.9 Test temperature: (20,0±5)°C Test pressure: (15±0,15) bar Deflection: ±10 mm Frequency: (15±1) Hz Load time: (20±5) s Stationary time: (120±5) s Set value: ≥ 100.000 cycles Actual value: 100.000 cycles	+

¹⁾: Value determined by customer

+: Correspond to the requirement

Reference note: The used measuring devices and their registration are listed through a test card (PMK) or ID-No. to ensure the traceability of the results. An overview of the test cards is part of the specific information of the laboratory for pipe system testing (LSA No. V-1 in the quality management handbook of IMA Dresden).

4.5 Proof of self-monitoring

The customer possesses all test equipment to perform the required tests for internal production control and the personnel is qualified and trained to perform and evaluate these tests.

5. Summary

The requirements according to DVGW W 534 (P) are fulfilled. Hygienic tests were not considered.

Reviewed
Hartmut Rönsch
Department Pipe Systems

Created
Dipl.-Ing. Jule Isabel Isleif
Person in Charge