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Test Report

„Type Test (TT) PE 80 pressure pipe - gas“

Short Title:

“Type Test (TT) PE 80 pipe”



Deutsche
Akkreditierungsstelle
D-PL-13119-02-00

Test Report No.: V241/20-2

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

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Test Report No.: V241/20-2

Test Locations: Am Lagerplatz 4, 01099 Dresden / GERMANY

Test Specimen: Pressure pipes for gas
Material: PE 80 INEOS Eltex TUB 172
Product group: EG 44; $\varnothing 75 \text{ mm} \leq d_n < \varnothing 250 \text{ mm}$
Type 1 – single layer pipe

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

The customer Dizayn Technik commissioned the IMA Dresden with the execution of type tests on pressure pipes for gas, made of PE80. The tests were carried out according to the requirements of the DVGW GW 335 – A2 and – A2-B1.

2 Requirements

According to:

- DVGW GW 335 – A2 (2005-11)
- DVGW GW 335 – A2 – B1 (2010-12)

Table 1: Requirements and tests acc. to DVGW GW 335 – A2/-B1

Seq. No.	Attributes	Requirements according to section
1	Marking	GW 335 – A2, 6.1
2	Appearance of surface	GW 335 – A2, 4.4.1 + 4.4.2
3	Colour	GW 335 – A2, 4.4.3
4	Dimensions	GW 335 – A2, 4.4.4
5	Heat treatment	GW 335 – A2, 4.4.5
6	Homogeneity	GW 335 – A2, 4.4.6
7	Hydrostatic pressure test (165 h)	GW 335 – A2, 4.4.7
8	Melt-mass flow rate (MFR)	GW 335 – A2, 4.4.8
9	Elongation at break	GW 335 – A2, 4.4.9

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3 Specimen

The test specimens were provided by the manufacturer. The following specimens were supplied:

- Pipe DN 110 x 10,0 / SDR 11 / Product group 44 / Type 1
- Material: INEOS Eltex TUB 172 (Batch LIA31429)
- Production date: 01.07.2019
- Marking: DIZAYN DOGALGAZ BORUSU PE80 110x10 SDR11 TSE TSEN1555-2
MFI GRUP NO: 10 DVGW DG-8111BT0241 LOT NO 429 01 07 19 C-6
=0006m=
- Manufacturer: Dizayn Teknik Plastic Pipes & Fittings Co
Velimese Beldesi Kazan ve Sanayi Top. Is Kooperatifi 5 Ada 4 Parsel
Corlu/ Tekirdag
TURKEY

4 Results

Table 2: Pressure pipes for gas / Product group: EG 44 / DN 110 x 10,0 mm

Seq. No.	Test	Test equipment / ID-No./ Person in charge	Test result			Evaluation	
1	Marking	M. Lasch	All information existent.			+	
2	Appearance of surface	M. Lasch	Clean, without any damages.			+	
3	Colour	M. Lasch	Continuously yellow (RAL 1018)			+	
4	Dimensions	Vernier Calipers Mitutoyo IMA 9023645 / Circometer 2014 2570 IPT / WDM IMA 9024887 / UFM 2017 3244 / M. Lasch	According to DIN EN ISO 3126:2005-05			+	
			Characteristic	Set value	Actual value		
			Mean outside diameter	d_{em} [mm]	110,0 to 110,7		110,6
			Maximum ovality	Ovality _{max} [mm]	≤ 2,2		1,2
		Minimal wall thickness	$s_{1\ min}$ [mm]	10,0 to 11,1	10,2		
5	Heat treatment	Circulating air oven UT6200/ Digital caliper Mitutoyo / 1600912 / M. Lasch	According to DIN EN ISO 2505:2005-08 Arithmetic average of relative elongation: Set value: ≤ 3,0 % Actual value: 1,5 %			+	

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Seq. No.	Test	Test equipment / ID-No./ Person in charge	Test result	Evaluation									
6	Homogeneity	Measuring microscope Axiolab / dhs-Microcam 1.3 / M. Illing	According to ISO 18553:2002-03	+									
			<table border="1"> <tr> <td>Characteristic</td> <td>Set value</td> <td>Actual value</td> </tr> <tr> <td>Grade of particle and agglomerate size</td> <td>Grade \leq 3</td> <td>2,8</td> </tr> <tr> <td>Rating of dom. Appearance</td> <td>A1, A2, A3 or B</td> <td>B ¹⁾</td> </tr> </table>		Characteristic	Set value	Actual value	Grade of particle and agglomerate size	Grade \leq 3	2,8	Rating of dom. Appearance	A1, A2, A3 or B	B ¹⁾
			Characteristic		Set value	Actual value							
Grade of particle and agglomerate size	Grade \leq 3	2,8											
Rating of dom. Appearance	A1, A2, A3 or B	B ¹⁾											
7A	Hydrostatic pressure test (165 h)	Pressure stations 213/2 / 213/3 / 213/4 / IPT B201 / S. Janowski	According to DIN EN ISO 1167-1/-2:2006-05 Water in water Set value: 80 °C / 4,5 MPa / \geq 165 h Actual value: 80 °C / 4,5 MPa / > 165 h	+									
8	Melt mass-flow rate (MFR)	CEAST MMF 7026 PMK B190 / Microbalance CPA 225D PMK B223 / M. Lasch	According to DIN EN ISO 1133-1:2012-03 Temperature: 190°C Nominal load: 5,0 kg Set value change: \leq 20% Actual value granulate: 0,810 g/10min ²⁾ Actual value pipe: 0,894 g/10min Actual value change: 10%	+									
9	Elongation at break	Micrometer gauge IMA 1600988 / H & P Inspekt AGS-G 10 kN / KMD SSM FBT 10 kN / M. Lasch	According to DIN EN ISO 6259-1:2015-08 and -3:2015-11 Number of test specimens: 5 Sample Type: 1 Test rate: 50 mm/min Set value: $\epsilon_b \geq 350\%$ Actual value: $\epsilon_{bm} > 360\%$	+									

¹⁾: Existence of non-coloured areas (white dots), not included in the assessment

²⁾: Value determined by customer

+: Correspond to the requirement

Reference note:

In the column *Testing equipment / ID-No.* are listed the employed testing resources and their registration by means of ID No. or testing resource card (PMK), in order to guarantee the traceability of the test results.
 The overview of the testing resource cards is a component part in the laboratory-specific specifications of the laboratory for pipe system testing (LSA No. V-1 in the quality management handbook of IMA Dresden).

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5 Summary

The requirements according to DVGW GW 335-A2 and DVGW GW 335-A2-B1 are fulfilled in the product group 44.

Reviewed

Hartmut Rönsch
Department Pipe Systems

Created

Dipl.-Ing. Jule Isabel Isleif
Person in Charge