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Managing directors

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Company's registered office Dresden

Register court Amtsgericht Dresden | HRB 5995

Tax identification number DE 155293995



Test Report

Audit Test (AT) 2022 Drinking Water Installation System DW-8511CU0013



Deutsche
Akkreditierungsstelle
D-PL-13119-02-00
D-IS-13119-01-00

Test Report No.: V220/22.1

Order No.: 232300005

Issued by Department Pipe Systems

Laboratory for Pipe Systems 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

Audit Test (AT) 2022 DW-8511CU0013

Test Report No.: V220/21.1



Subject of test: Drinking water installation system consisting of Copper pipes according to DVGW GW392 and Copper and Red Brass Pressfittings, model **"Double Winners Copper Water"**

DVGW-Registration No.: **DW-8511CU0013**

Ordering customer: Taizhou Double Winners Copper Co., Ltd.
Unit B-1605, Joyance Tower, JiaoJiang, Taizhou, Zhejiang, 318000, China

Test laboratory: IMA Materialforschung und Anwendungstechnik GmbH
Wilhelmine-Reichard-Ring 4, 01109 Dresden
Laboratory for Pipe System Testing
Am Lagerplatz 4, 01099 Dresden

Audit test: **2022: Ü 230-20-003_1**

Sampling: 2023-06-03

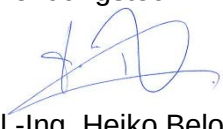
Test period: 2022-06 until 2022-08

Test result: The requirements according to DVGW-Worksheet W 534 and DVGW ZP 8500 are fulfilled by the system "Double Winners Copper Water" in dimensions 22 and 42.

Person in charge: Dipl.-Ing. (BA) Enrico Marusch

Distribution list: 1 x Ordering customer
1 x DVGW
1 x IMA Dresden

Authorized
Dresden, 2022-08-17
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.
The publication of parts of this test report and any reference to tests for advertising purposes is subject to written permission by IMA Materialforschung und Anwendungstechnik GmbH in any case.
The results contained in this report may only be published or passed on to third parties with reference to the IMA Materialforschung und Anwendungstechnik GmbH. The statement of conformity is based on the binary statement for simple acceptance rule ($w=0$) acc. to ILAC G8. The measured values are considered without the measurement uncertainty.

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1 Test requirements

- DVGW-Worksheet W 534 | July 2015
- DVGW ZP 8500 | March 2017

2 Used materials

Modell „Double Winners Copper Water “

- Manufacturer: CW024A (Copper) Products: Linhai Yongsgeng Pipe Co. Ltd., Mechanical Industry Area, Duqiao Town, Linhai, Taizhou, Zhejiang, 317016, China
CC499K (Red Brass) Products: Taizhou Bada Valve Co., Ltd. Lishidai, Fengjiang Str., Luqioa Dist 318054 Taizhou City, Zhejiang, China

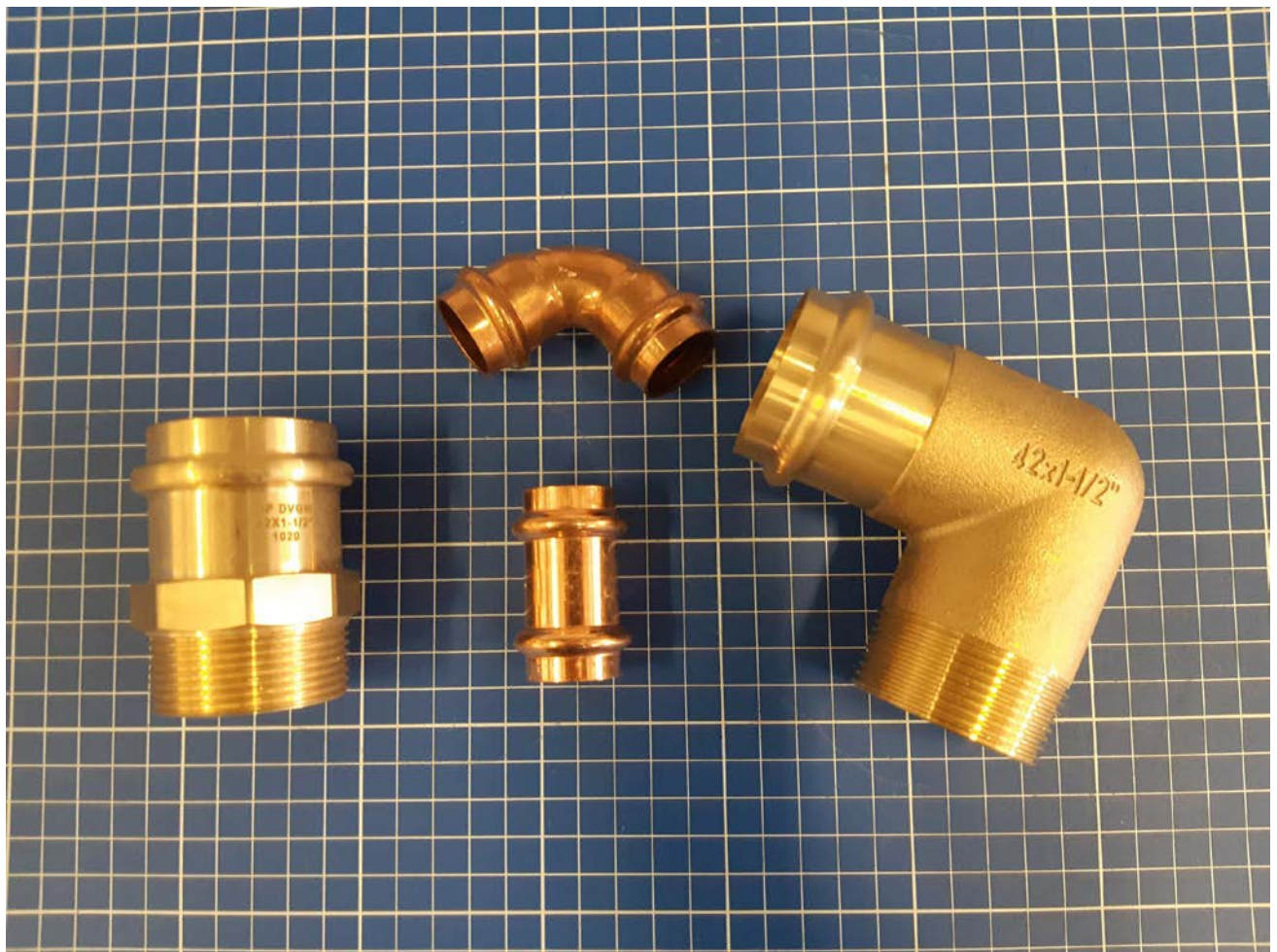


Figure 1: Test items

- Marking:
Press body: GP DVGW 22 0322 (copper articles)
GP DVGW 42X1-1/2" 1020 / GP 1020 DVGW 42x1-1/2" (red brass articles)

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Figure 2: marking of copper articles



Figure 3: marking of brass article



Figure 4: marking of brass article



Figure 5: marking of brass article

- Material:
Basic body: Copper CW024A; Red Brass CC499K
O-ring: 70EP111p / EPDM
(BodeDynamic GmbH; DW-5253CP0542)

Copper pipes according to DVGW GW392

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3 Test results according to datasheet 1, type M-MM

Table 1: Test results - dimension 22, copper CW024A; coupling equal straight, 90° elbow

Seq. No.	Test	Test equipment/ ID- No./ Person in charge	Test result	Evaluation
1	KTW	-	O-ring is DVGW certified product (see annex 1 of report "DW-5253CP0542")	+
2	Materials of metal	SPEKTROMAXx/ 129100, ID: 004966 / T. Stiegel	Material analysis results meet requirements (see annex 2 of report)	+
3	Elastomers	-	O-ring is DVGW certified product (see annex 1 of report "DW-5253CP0542")	+
4	Sealing material for threaded connections	-	No sealing material used for thread connections	n.a.
5	Dimensions	Measuring microscope MM1 9026365, Digital caliper 1023011, Outside caliper 007649, Wall thickness meter 209-607 / A. Müller	The essential dimensions are within the tolerance ranges of the constructional drawings	+
6	Surface condition, homogeneity	A. Müller	Smooth inner and external surfaces	+
7	Labelling	A. Müller	Labelling is durable, legible and meets the requirements	+

Table 2: Test results - dimension 42, red brass CC499K; 90° elbow, transition to male thread

Seq. No.	Test	Test equipment/ ID- No./ Person in charge	Test result	Evaluation
1	KTW	-	O-ring is DVGW certified product (see annex 1 of report "DW-5253CP0542")	+
2	Materials of metal	SPEKTROMAXx/ 129100, ID: 004966 / T. Stiegel	Material analysis results meet requirements (see annex 3 of report)	+
3	Elastomers	-	O-ring is DVGW certified product (see annex 1 of report "DW-5253CP0542")	+

Test Report

Audit Test (AT) 2022 DW-8511CU0013

Test Report No.: V220/21.1



Seq. No.	Test	Test equipment/ ID- No./ Person in charge	Test result	Evaluation
4	Sealing material for threaded connections	-	No thread sealing function existing	n.a.
5	Dimensions	Measuring microscope MM1 9026365, Digital caliper 1023011, Outside caliper 007649, Wall thickness meter 209-607 / A. Müller	The essential dimensions are within the tolerance ranges of the constructional drawings	+
6	Surface condition, homogeneity	A. Müller	Smooth inner and external surfaces	+
7	Labelling	A. Müller	Labelling is durable, legible and meets the requirements	+

+ meets requirements
n.a. not applicable

Reference note:

In the column *Testing resource / ID-No.* the employed testing resources and their registration by means of ID No. or testing resource card (PMK) are listed, 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 Systems Testing (LSA No. V-1 in the quality management handbook of IMA Dresden).
The statement of conformity is based on the binary statement for simple acceptance rule ($w=0$) acc. to ILAC G8. The measured values are considered without the measurement uncertainty.

4 Surveillance of the Factory Production Control (FPC)

The inspection of FPC was performed at manufacturing site, dated 2022-05-31.

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

The FPC ensures a production in accordance with DVGW-Worksheet W 534 and DVGW ZP 8500.

Reviewed

gez. Dipl.-Ing. (BA) Carsten Dietze
Pipe Systems Testing

Created

gez. Dipl.-Ing. (BA) Enrico Marusch
Project Manager

Annex 1 O-ring certificate

Audit Test (AT) 2022 DW-8511CU0013

Test Report No.: A1 V220/22.1



CERT

DVGW type examination certificate

DVGW-Baumusterprüfzertifikat

DW-5253CP0542

Registration Number
Registriernummer

Field of Application <i>Anwendungsbereich</i>	products of water supply <i>Produkte der Wasserversorgung</i>
Owner of Certificate <i>Zertifikatinhaber</i>	BodeDynamic GmbH Kirchweg 114, D-24558 Henstedt-Ulzburg
Distributor <i>Vertreiber</i>	BodeDynamic GmbH Kirchweg 114, D-24558 Henstedt-Ulzburg
Product Category <i>Produktart</i>	materials and components for drinking water: sealing material for drinking water installations (5253)
Product Description <i>Produktbezeichnung</i>	sealing material for drinking water installations
Model <i>Modell</i>	70EP111p
Test Reports <i>Prüfberichte</i>	laboratory control test: K 19 0759.5 from 26.04.2019 (MPD) type testing: 22 0002404 2014-2 from 08.07.2014 (MPK) UBA-Guideline: K-277472-16-Ko from 04.10.2016 (WHY) hygienic testing: W-277670-16-Si/Ni from 14.11.2016 (WHY)
Test Basis <i>Prüfgrundlagen</i>	DIN EN 681-1 (01.11.2006) DVGW W 534-10.3 (01.05.2004) UBA ELASTOM (16.03.2016) DVGW W 270 (01.11.2007)

Date of Expiry / File No. 08.07.2024 / 19-0287-WNV
Ablaufdatum / Aktenzeichen

24.06.2019 Fk A-1/2

Date, Issued by, Sheet, Head of Certification Body
Datum, Bearbeiter, Blatt, Leiter der Zertifizierungsstelle

DVGW CERT GmbH is an accredited body by DAkkS according to DIN EN ISO/IEC 17065:2013 for certification of products for energy and water supply industry.

DVGW CERT GmbH ist von der DAkkS nach DIN EN ISO/IEC 17065:2013 akkreditierte Stelle für die Zertifizierung von Produkten der Energie- und Wasserversorgung.



Deutsche
Akkreditierungsstelle
D-ZE-16028-01-05

DVGW CERT GmbH
Zertifizierungsstelle

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53123 Bonn

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Fax +49 228 91 88 - 993

www.dvgw-cert.com
info@dvgw-cert.com

Annex 1 O-ring certificate

Audit Test (AT) 2022 DW-8511CU0013

Test Report No.: A1 V220/22.1

A-2/2

DW-5253CP0542

Type	Technical Data	Remarks
<i>Typ</i>	<i>Technische Daten</i>	<i>Bemerkungen</i>
70EP111p	classification of hardness: 70 type: WA/WB (acc. to DIN EN 681-1)	

Annex 2 Results of material analysis „CW024A”



Audit Test (AT) 2022 DW-8511CU0013

Test Report No.: A2 V220/22.1

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Homepage www.ima-dresden.de

Managing directors
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Company's registered office Dresden
Register court Amtsgericht Dresden | HRB 5995
Tax identification number DE 155293995



Test Protocol

General information:

Test No.: V220/22.1
Order No.: P232300005
Customer: Taizhou Double Winners Copper Co., Ltd.
Specimen receipt: 2022-06-03
Specimen type: Coupling in dimension 22 mm
Specimen material: CW024A
Specimen No.: V220/22.1.1.2

Test request: Determination of chemical composition by optical emission spectroscopy
Test specification: DIN EN 15079:2015-07
Specimen preparation: As delivered, acc. to test specification
Test location: Wilhelmine-Reichard-Ring 4, 01109 Dresden, Germany
Test equipment: Spark emission spectrometer SPECTROMAXx 129100, ID: 004966
Test date: 2022-07-07

Test results and normative comparisons:

	Chemical composition in wt.-%, No. of measurements: 4	
	Cu	P
V220/22.1-1-2	99.9	0.020
Cu-DHP (CW024A) UBA BWGL, metallic materials, 1.2.1 (unknown analysis type)	≥ 99.90	0.015 - 0.040

The determined material composition meets the requirements for Cu-DHP (CW024A) according to the "Evaluation criteria for metallic materials in contact with drinking water" (UBA BWGL metallic materials) published by the Federal Ministry for Environment, Nature Conservation and Nuclear Safety (UBA), Germany, 25 May 2021 - notified acc. to EU guideline 2015/1535:

☒ Yes ☐ No

The statement of conformity is based on the measured values without consideration of the measurement uncertainty.

Test operator:
Tino Stiegel / 2022-07-07

Department Metals
Materialography

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. Opinions and interpretations are not part of the accreditation. The results contained in this report may only be published or passed on to third parties with reference to the IMA Materialforschung und Anwendungstechnik GmbH.

Annex 3 Results of material analysis „CC499K”

Audit Test (AT) 2022 DW-8511CU0013

Test Report No.: A3 V220/22.1



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Tel.: +49(0)351 8837-0
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E-Mail: ima@ima-dresden.de
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Managing directors:
Prof. Dr.-Ing. Thomas Fleischer (Spokesman),
Dr.-Ing. Ron Buchholz, Dr.-Ing. Toni Ehrig, Marcos Martja Ortiz
Company's registered office Dresden
Register court Amtsgericht Dresden | HRB 5995
Tax identification number DE 155293995



Test Protocol

General information:

Test No.: V220/22.1
Order No.: P232300005
Customer: Taizhou Double Winners Copper Co., Ltd.
Specimen receipt: 2022-06-03
Specimen type: 90° angle with one side male thread
Specimen material: CC499K
Specimen No.: V220/22.1-2-3

Test request: Determination of chemical composition by optical emission spectroscopy
Test specification: DIN EN 15079:2015-07
Specimen preparation: As delivered, acc. to test specification
Test location: Wilhelmine-Reichard-Ring 4, 01109 Dresden, Germany
Test equipment: Spark emission spectrometer SPECTROMAXx 129100, ID: 004966
Test date: 2022-07-06

Test results and normative comparisons:

	Chemical composition in wt.-%, No. of measurements: 4								
	Cu	Sn	Zn	Pb	Ni	Fe	P	S	Sb
V220/21.1-2-3	86.0	4.5	6.0	2.8	0.27	0.03	0.01	0.02	0.05
CC499K (CuSn5Zn5Pb2-C) UBA BWGL, metallic materials, 2.13.3.1 (unknown analysis type)	84.0 - 88.0	4.0 - 6.0	4.0 - 6.0	0.2 - 3.0	0.1 - 0.60	≤ 0.30	≤ 0.04	≤ 0.04	≤ 0.10

The determined material composition meets the requirements for CC499K (CuSn5Zn5Pb2-C) according to the "Evaluation criteria for metallic materials in contact with drinking water" (UBA BWGL metallic materials) published by the Federal Ministry for Environment, Nature Conservation and Nuclear Safety (UBA), Germany, 25 May 2021 - notified acc. to EU guideline 2015/1535:

☒ Yes ☐ No

The statement of conformity is based on the measured values without consideration of the measurement uncertainty.

Test operator:
Tino Stiegel / 2022-07-06

Department Metals
Materialography

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. Opinions and interpretations are not part of the accreditation. The results contained in this report may only be published or passed on to third parties with reference to the IMA Materialforschung und Anwendungstechnik GmbH.

Annex 4 Technical drawings and dimensions

Audit Test (AT) 2022 DW-8511CU0013

Test Report No.: A4 V220/22.1



台州市双赢铜业有限公司

TAIZHOU DOUBLE WINNERS COPPER CO., LTD

Address: Unit B-1605, Joyance Tower, Jiaojiang Taizhou Zhejiang 318000 China.

Tel: 0086-576-88220319 Fax: 0086-576-88203455

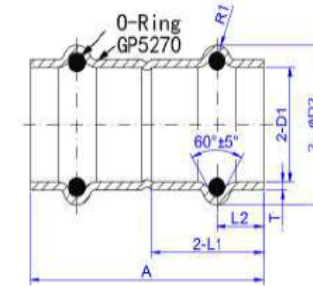
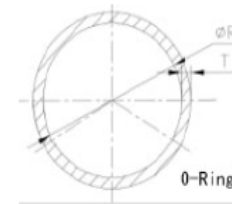
Web: www.double-winners.com Email: info@double-winners.com

受控

Model: GP5270

Apply: GAS/Water

O-Ring: GAS:Yellow Water: Black



GP Artikel Nr.	规格	GP5270sMaterial/Surface Treatment	O-Ring Material	O-Ring QTY	R±0.3	T±0.8	D1		D2		L1		L2	A		R1	T ±0.10
							尺寸	公差	尺寸	公差	尺寸	公差		尺寸	公差		
GP5270 01200000	12mm	CW024/copper color	EPDM	2	12.2	2.4	12.2	+0.00 +0.15	19.3	±0.15	18	±0.5	7	38	±1.5	2.6	1.25
GP5270 01500000	15mm	CW024/copper color	EPDM	2	15.2	2.5	15.2	+0.00 +0.15	22.8	±0.15	22	±0.5	9.4	46	±1.5	2.7	1.3
GP5270 01800000	18mm	CW024/copper color	EPDM	2	18.2	2.5	18.2	+0.00 +0.15	25.9	±0.15	22	±1.0	9.6	48	±1.5	2.75	1.3
GP5270 02200000	22mm	CW024/copper color	EPDM	2	22.3	3.2	22.2	+0.00 +0.20	31	+0.20 -0.10	23	±0.5	9.6	50	±1.5	3.1	1.4
GP5270 02800000	28mm	CW024/copper color	EPDM	2	28.3	3	28.2	+0.00 +0.20	37	±0.15	24	±1.0	10	52	±1.5	3.05	1.4
GP5270 03500000	35mm	CW024/copper color	EPDM	2	35.4	3	35.2	±0.20	44	±0.15	26	±1.0	10	57	±1.5	3.05	1.4
GP5270 04200000	42mm	CW024/copper color	EPDM	2	42.4	4	42.25	+0.00 +0.25	53.8	±0.15	36	±1.0	13	75	±1.5	3.93	1.7
GP5270 05400000	54mm	CW024/copper color	EPDM	2	54.4	4	54.25	+0.00 +0.25	65.7	±0.15	40	±1.0	16	82	±1.5	3.93	1.7

制表: 王锋

审核: 金崇明

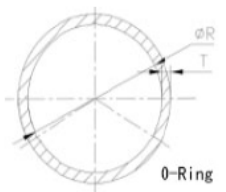
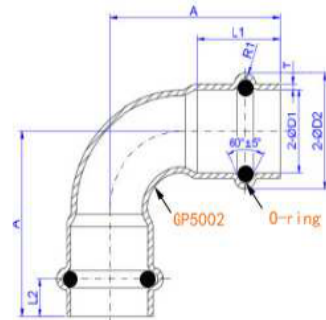
核准: 冯建敏

Annex 4 Technical drawings and dimensions

Audit Test (AT) 2022 DW-8511CU0013

Test Report No.: A4 V220/22.1



 台州市双赢铜业有限公司 TAIZHOU DOUBLE WINNERS COPPER CO., LTD Address: Unit B-1605, Joyance Tower, Jiaojiang Taizhou Zhejiang 318000 China. Tel: 0086-576-88220319 Fax: 0086-576-88203455 Web: www.double-winners.com Email: info@double-winners.com 受控 Model: GP5002 Apply: GAS/Water O-Ring: GAS:Yellow Water: Black  																	
GP Artikel Nr.	规格	GP5002 Material/Surface Treatment	O-Ring Material	O-Ring QTY	R±0.3	T±0.8	D1		D2		L1		L2	A		R1	T min
							尺寸	公差	尺寸	公差	尺寸	公差		尺寸	公差		
GP5002 01200000	12mm	CW024/copper color	EPDM	2	12.2	2.4	12.2	+0.00 +0.15	19.3	±0.15	18	±0.5	7	32.5	±2.0	2.6	1.25
GP5002 01500000	15mm	CW024/copper color	EPDM	2	15.2	2.5	15.2	+0.00 +0.15	22.8	±0.15	22	±0.5	9.4	40	±2.0	2.7	1.3
GP5002 01800000	18mm	CW024/copper color	EPDM	2	18.2	2.5	18.2	+0.00 +0.15	25.9	±0.15	22	±1.0	9.6	40	±2.0	2.75	1.3
GP5002 02200000	22mm	CW024/copper color	EPDM	2	22.3	3.2	22.2	+0.00 +0.20	31	+0.20 -0.10	23	±0.5	9.6	48.5	±2.0	3.1	1.4
GP5002 02800000	28mm	CW024/copper color	EPDM	2	28.3	3	28.2	+0.00 +0.20	37	±0.15	24	±1.0	10	53	±2.0	3.05	1.4
GP5002 03500000	35mm	CW024/copper color	EPDM	2	35.4	3	35.2	±0.20	44	±0.15	26	±1.0	10	68	±2.0	3.05	1.4
GP5002 04200000	42mm	CW024/copper color	EPDM	2	42.4	4	42.25	+0.00 +0.25	53.8	±0.15	36	±1.0	13	86	±2.0	3.93	1.7
GP5002 05400000	54mm	CW024/copper color	EPDM	2	54.4	4	54.25	+0.00 +0.25	65.7	±0.15	40	±1.0	16	104.5	±2.0	3.93	1.7

制表: 王锋

审核: 朱崇明

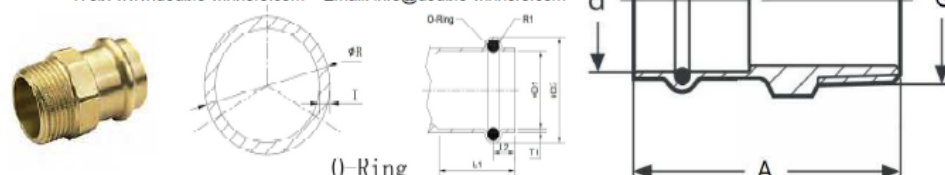
核准: 冯建航

Annex 4 Technical drawings and dimensions

Audit Test (AT) 2022 DW-8511CU0013

Test Report No.: A4 V220/22.1



 DOUBLE WINNERS		台州市双赢铜业有限公司 TAIZHOU DOUBLE WINNERS COPPER CO. Address: Unit B-1605, Joyance Tower, Jiaojiang Taizhou Zhejiang 318001 Tel: 0086-576-88220319 Fax: 0086-576-88203455 Web: www.double-winners.com Email: info@double-winners.com																	
Model: GPG4243G Apply: GAS/Water O-Ring: GAS:Yellow Water: Black																			
GP Artikel Nr.	规格 dXG	GP4243GMaterial/Su rface Treatment	O-Ring Material	O- Ring QTY	R±0.5	T ±0.5	D1		D2		L1		L2	A		R1	T1 min	G	
							尺寸	公差	尺寸	公差	尺寸	公差		尺寸	公差				
GPG4243G0120300	GPG4243G 12 x 3/8 AG Rg	CC499K/copper color	EPDM	1	12.2	2.4	12.3	±0.05	19.6	±0.1	18	±0.5	7	38	±2.0	1.2	1.3	3/8	
GPG4243G0120400	GPG4243G 12 x 1/2 AG Rg	CC499K/copper color	EPDM	1	12.2	2.4	12.3	±0.05	19.6	±0.1	18	±0.5	7	38	±2.0	1.2	1.3	1/2	
GPG4243G0150300	GPG4243G 15 x 3/8 AG Rg	CC500K/copper color	EPDM	1	15.2	2.5	15.3	±0.05	22.8	±0.1	22	±0.5	10	41	±2.0	1.3	1.4	3/8	
GPG4243G0150400	GPG4243G 15 x 1/2 AG Rg	CC499K/copper color	EPDM	1	15.2	2.5	15.3	±0.05	22.8	±0.1	22	±0.5	10	41	±2.0	1.3	1.4	1/2	
GPG4243G0150600	GPG4243G 15 x 3/4 AG Rg	CC499K/copper color	EPDM	1	15.2	2.5	15.3	±0.05	22.8	±0.1	22	±0.5	10	41	±2.0	1.3	1.4	3/4	
GPG4243G0180400	GPG4243G 18 x 1/2 AG Rg	CC499K/copper color	EPDM	1	18.2	2.5	18.3	±0.05	26	±0.1	23	±0.5	10	41	±2.0	1.35	1.4	1/2	
GPG4243G0180600	GPG4243G 18 x 3/4 AG Rg	CC499K/copper color	EPDM	1	18.2	2.5	18.3	±0.05	26	±0.1	23	±0.5	10	41	±2.0	1.35	1.4	3/4	
GPG4243G0220400	GPG4243G 22 x 1/2 AG Rg	CC499K/copper color	EPDM	1	22.3	3.2	22.3	±0.10	31	±0.1	24	±0.5	10	45	±2.0	1.6	1.4	1/2	
GPG4243G0220600	GPG4243G 22 x 3/4 AG Rg	CC499K/copper color	EPDM	1	22.3	3.2	22.3	±0.10	31	±0.1	24	±0.5	10	47	±2.0	1.6	1.4	3/4	
GPG4243G0220800	GPG4243G 22 x 1 AG Rg	CC499K/copper color	EPDM	1	22.3	3.2	22.3	±0.10	31	±0.1	24	±0.5	10	47	±2.0	1.6	1.4	1	
GPG4243G0280600	GPG4243G 28 x 3/4 AG Rg	CC499K/copper color	EPDM	1	28.3	3	28.3	±0.10	37	±0.1	25	±0.5	10	49	±2.0	1.55	1.4	3/4	
GPG4243G0280800	GPG4243G 28 x 1 AG Rg	CC499K/copper color	EPDM	1	28.3	3	28.3	±0.10	37	±0.1	25	±0.5	10	51	±2.0	1.55	1.4	1	
GPG4243G0281000	GPG4243G 28 x 1 1/4 AG Rg	CC499K/copper color	EPDM	1	28.3	3	28.3	±0.10	37	±0.1	25	±0.5	10	58	±2.0	1.55	1.5	1-1/4	
GPG4243G0350800	GPG4243G 35 x 1 AG Rg	CC499K/copper color	EPDM	1	35.4	3	35.3	±0.10	44	±0.1	26	±0.5	10	52	±2.0	1.55	1.5	1	
GPG4243G0351000	GPG4243G 35 x 1 1/4 AG Rg	CC499K/copper color	EPDM	1	35.4	3	35.3	±0.10	44	±0.1	26	±0.5	10	60	±2.0	1.55	1.5	1-1/4	
GPG4243G0351200	GPG4243G 35 x 1 1/2 AG Rg	CC499K/copper color	EPDM	1	35.4	3	35.3	±0.10	44	±0.1	26	±0.5	10	60	±2.0	1.55	1.5	1-1/2	
GPG4243G0421000	GPG4243G 42 x 1 1/4 AG Rg	CC499K/copper color	EPDM	1	42.4	4	42.3	+0.00 +0.10	53.9	±0.1	36	±0.5	13	70	±2.0	2.13	1.8	1-1/4	
GPG4243G0421200	GPG4243G 42 x 1 1/2 AG Rg	CC499K/copper color	EPDM	1	42.4	4	42.3	+0.00 +0.10	53.9	±0.1	36	±0.5	13	70	±2.0	2.13	1.8	1-1/2	
GPG4243G0541200	GPG4243G 54 x 1 1/2 AG Rg	CC499K/copper color	EPDM	1	54.4	4	54.3	+0.00 +0.10	65.9	±0.1	40	±0.5	16	78	±2.0	2.13	1.8	1-1/2	
GPG4243G0541800	GPG4243G 54 x 2 AG Rg	CC499K/copper color	EPDM	1	54.4	4	54.3	+0.00 +0.10	65.9	±0.1	40	±0.5	16	70	±2.0	2.13	1.8	2	

制表:

王锋

审核:

余崇明

核准:

邓建敏