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TECHNICAL OPINION NO 172/BU/17

13 pages

PRINCIPAL (name and address)	BOHAMET - ARMATURA Sp. J Kościelna Street 2, Ciele 86-005 Białe błota
TEST SAMPLE'S (product, object), description and identification	UNDERGROUND HYDRANT DN 100 PN 10/16 type HP - M
PRODUCT MANUFACTURER (testing object)	BOHAMET - ARMATURA Sp. J Kościelna Street 2, Ciele 86-005 Białe błota

Copy of the technical opinion	1
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ZA ZGODNOŚĆ Z ORYGINAŁEM
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Henryk Bogusz

„BOHAMET-ARMATURA” SP.J.

14.03.2018
DATA

POŚCISZ

wspólnik „BOHAMET-ARMATURA” s.j.

Specjalista ds. kontroli jakości i nadzoru BHP
Tomasz Chodera

Jarosław Halarewicz, Henryk Bogusz
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NIP 554-23-42-840 • REGON 092535146
KRS 0000109728

Józefów, 12 of May 2017



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CNBOP - PIB	TECHNICAL OPINION nr 172/BU/17	2/13
------------------------	---------------------------------------	------

1. FORMAL BASIS FOR THE EXAMINATION OF TESTS

The ordering letter of 17 of March 2017.
 The agreement no 172/BU/17 of 26 of April 2017.

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2. TESTING SAMPLES / OBJECTS

2.1. Product/object name, type, size and other indications.

Single-closed underground hydrant DN 100 PN 10/16 type HP
 (optional with extra ball seal).

The single-closed underground hydrant DN 100 PN 10/16 type HP (optional
 with extra ball seal) is intended for the water abstraction with the general
 purpose pipeline with a diameter of minimum 100 mm.

Hydrants are equipped with single closure (the mushroom valve) and
 dehydration (drainage) device, located in the valve body.

The upper part of hydrant has a connection in the form of thread 6", which is
 made of brass and secure the rubber guard with EPDM.

(picture))

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14.03.2018
 DATA PODPIS

2.3. The manner of accepting the sample for the test and the method of its storage.

The principal took 1 sample for testing of parti of 1, by the sampling protocol
 PS/33/30.04.2014 and delivered by forwarding into the lab. According to the
 sampling protocol, it is representative of the current production process.

The samples were received in the laboratory by the delivery and acceptance
 protocol on 4 of April 2017.

The manufacturer attached to the samples:

- list of parts and materials
- technical description of the DN 100PN 10 type HP/M underground hydrant
 B24

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- manufacturer's declaration for underground hydrant type HP-M DN 100



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 NARODOWA STRATEGIA SPÓJNOŚCI



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 KUJAWSKO-POMORSKIE

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Mój region w Europie

CNBOP - PIB	TECHNICAL OPINION nr 172/BU/17	3/13
----------------	--------------------------------	------

3. TEST AND METHODS OF TESTING

3.1. Methods of testing for single-closed underground hydrant DN 100 PN 10/16 type HP-M

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Accepted Standard	GOST P53961 – 2010 underground fire hydrants	
L.p.	Feature tested	Technical requirements. Testing methods. ⁽¹⁾
1	General technical requirements.	5.1
2	Basic parameters and characteristics.	5.2.1, 5.2.2
3	Construction requirements.	
4	Ergonomics requirements	
5	Mechanical strength of the hydrants.	
6	Requirements for materials and semi-finished products	
7	Completeness.	
8	Marking (signing)	
9	Packaging, storage and transport	

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 14.03.2018
 DATA
 PODPIS

Verification of the requirements on the basis of documentation and declarations provided by the manufacturer.

¹⁾ The tests for this Technical Opinion are non-accredited by PCA.

3.3 The date of the test.

Tests were done on days 09-12 of May 2017.

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CNBOP - PIB	TECHNICAL OPINION nr 172/BU/17	4/13
----------------	--------------------------------	------

4. TESTS RESULT.

Single-closed underground hydrant DN 100 PN 10/16 type A.

L.P.	FEATURE TESTED	Requirements according to GOST P 53961-2010	Result	statement of compliance/non-compliance with the requirements
1	Hydrant produced in accordance with the requirements of this standard.	5.1.	positive	compatible
2	1. Operating pressure Pp' Mpa (kgf*cm-2), no more than	5.2.1	PN 10 till PN 16	compatible
	2. the height of the hydrant H, mm		from 500 to 3500 inclusive	
	3. Inner diameter of the body DN		107	
	4. Valve adaptors, mm		from 24 to 30 inclusive	
	5. shank clearance based on by the axis, no more than		0,4	
	6. number of spindle revolutions to fully open the hydrant		14	
	7. hydraulic resistance in a hydrant S, c2*m-5 , no more than*, with H=1000 mm			
	8. hydrant mass at H=1000 mm, kg, not more		35	
Change of hydraulic resistance for every 250 mm of height, no more than 0,05*103*c2 *m-5				
The weight change for every 250 mm height - no more than 10 kg				
The hydrant corresponds to the following reliability indicators:		5.2.2	10 years not less than a year not less than 200 cycles	compatible
full work period				
- preservation of paramenters during storage throughout the period				
fixed quantity of efficient work feasibility (cycles of action)				
3.	The hydrant body construction provides durability at hydraulic pressures exceeding 1.5 times the working pressure	5.3.1	positive no signs of cracking	compatible

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 14.03.2018
 DATA
 PODPIS

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CNBOP - PIB	TECHNICAL OPINION nr 172/BU/17	5/13
----------------	---------------------------------------	------

The hydrant construction in place keeps hermetic connections and seals under operating pressure	5.3.2	no signs of leakage or dripping of liquids through the walls of the body parts, as well as in places of movable connections and by sealing the stem/ positive result	compatible
Hydrant construction	5.3.3	ensures its opening and closing during the whole working pressure range	compatible
Hydrant equipped with a device for draining water left after work	5.3.4	quantity remaining water 0,00 ml / positive result	compatible
hydrant valve and hydrant drive	5.3.5	can withstand axial force not less than 3*104 H (3*103kgf)	compatible
construction and fixing of the hydrant connector	5.3.6	excludes turning the fitting when screwing in the fire rack in accordance with the National Standard P 53250 positive result	compatible
threaded part of the hydrant connector	5.3.7	Equipped with a hinged lid. The construction of the lid does not interfere with the free installation of the fire protection rack positive result	compatible

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CNBOP - PIB	TECHNICAL OPINION nr 172/BU/17	6/13
----------------	---------------------------------------	------

	The square of stem for connecting the hydrant with the fire rack key	5.3.8	22 x 22 mm; square dimensions - accurate to the 12th degree of accuracy of the State Standard 25347. The square surface has a hardness of ~28HRC.	compatible
4.	Controls for closing devices.	5.4.1	The hydrant moves smoothly when working within a set range. Positive result.	compatible
	Open / close force of the hydrant valve with the fire rack key (or threaded valve with a special key).	5.4.2	Does not exceed 90 Nm. Positive result.	compatible
5.	Production under specific climatic conditions.	5.5.1	Temperate and cold climate, State Standard 15150 category 1.1. Positive result.	compatible
	Sets and parts of a hydrant: the cycle should be understood as: full opening of the hydrant; work within no less than 1 min at operating pressure; full hydrant closure; draining the water through the drain valve.	5.5.2	Manufactured from materials with mechanical and anti-corrosive properties that ensure the ability to work with water when operating under specified operating conditions. Positive result.	compatible
	The hydrant valve ring.	5.5.3	Manufactured from frost-proof NBR rubber with an increased hardness of 70± Sh according to the State Standard 7338. Positive result.	compatible

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Mój region w Europie

CNBOP - PIB	TECHNICAL OPINION nr 172/BU/17	7/13
----------------	---------------------------------------	------

Arrangements with the orderer.	5.5.4	The manufacturer does not use additional protective coatings (painting with powder varnish).	compatible
Varnish coatings of the external surface of the hydrant.	5.5.5	In accordance with National Standard 9.032, with a class not lower than VI for operating conditions in temperate and cold climates, 4 according to the State Standard 9.104. Preparation of metal surfaces before painting - according to the National Standard 9.402. Positive result.	compatible
Welding of hydrant flanges. Other welded joints of steel structures	5.5.6	In accordance with State Standard 16037, In accordance with State Standard 5264 and Manufacturer's Technical Documentation Sticking, spouts of welds, flooding, arson, shifting of welded parts, as well as other defects that affect the quality and reliability of hydrants do not occur. Positive result.	compatible

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Specjalista ds. kontroli jakości i nadzoru BHP
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Mój region w Europie

CNBOP - PIB	TECHNICAL OPINION nr 172/BU/17	8/13
------------------------	---------------------------------------	------

6.	Supplied materials and products used in the production of hydrant parts.	5.6.1	Accepted by the input control with checking their quality and necessary documentation. Positive result.	compatible
	Materials used. Chemical-physical properties of starting materials, hardness and roughness of their surface.	5.6.2	They have certificates or labels confirming their compliance with standards, technical conditions or other normative documentation. They correspond to the standards, technical conditions of their production, as well as the purpose and conditions of work of the parts of hydrants produced from them. Positive result.	compatible
	Moulding (casting) hydrant. Deviations in the dimensions and weight of gray cast iron castings	5.6.3	According to the State Standard 26358. According to the 3rd class accuracy of State Standards P 53464. Positive result.	compatible
	On the friction surfaces are machined die-cast parts (flanges, bodies, connector, valve body).	5.6.4	No occurrence of dentures, slag impurities, cracks and other defects of the cast.	compatible

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Specjalista ds. kontroli jakości i nadzoru BHP
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PROGRAM REGIONALNY
 NARODOWA STRATEGIA SPÓJNOŚCI

ZA ZGODNOŚĆ Z ORYGINAŁEM
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 14.03.2018
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Mój region w Europie

CNBOP - PIB	TECHNICAL OPINION nr 172/BU/17	9/13
------------------------	---------------------------------------	------

Mechanical and anti-corrosion properties, material of the threaded part of the junction.	5.6.5	They have the same good properties as the "LK1" brass properties of the State Standard or the "Br 05C5S5" bronze of the State Standard. Positive result.	compatible
Material of the hydrant stem.	5.6.6	Steel 1.4021 is just as good as marji steel 30x13 State Standard 5632.	compatible
Valve seals (bead seat).	5.6.7	Made of a material with basic properties not lower than that of the "LK1" brand of the State Standard or bronze standard brand "Br 05C5S5" of the State Standard.	compatible
Production technology of hydrantes with one typical size.	5.7	It secures full volatility of it's assembly units and parts.	compatible
Hydrants's components.	5.8	No traces of corrosion, dents, dints, cracks and other mechanical damage. Acute angles and the edges of the parts are polished.	compatible

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Specjalista ds. kontroli jakości i nadzoru BHP
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PROGRAM REGIONALNY
 NARODOWA STRATEGIA SPÓJNOŚCI

ZA ZGODNOŚĆ Z ORYGINAŁEM
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Mój region w Europie

CNBOP - PIB	TECHNICAL OPINION nr 172/BU/17	10/13
------------------------	---------------------------------------	-------

	Metric threads:	5.9	<p>Made in accordance with the 24705 State Standard with tolerance fields according to the 16093 State Standard.</p> <p>Made in accordance with the 24705 State Standard with tolerance fields according to the 16093 State Standard.</p> <p>Made in accordance with the 24738 State Standard.</p> <p>Cracks, local interruptions and irregularities on the surface of the threads do not occur if their depth goes beyond the limits of the average thread diameter and their overall length exceeds half the length of the convolution.</p>	compatible
	Internal threads – 7H			
	External threads -8 g; (trapezoidal threads)			
	Fastening of individual parts, assembly units.	5.10	Excludes their automatic loosening and unscrewing when using a hydrant.	compatible
7.	The complete delivery of the hydrant includes:	5.11	Assembly products, provided for in the Product Technical Documentation, certificate, technical description, operating manual or one document replacing them, prepared in accordance with the State Standard. Positive result.	compatible

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8.	Labeling.	5.12.1	The hydrants's labeling corresponds to the requirements of the manufacturer's Technical Documentation. Positive result.	compatible
	The label should contain the following information: Manufacturer's name or trade mark; contractual hydrant designation, according to the procudent system; Serial number; Height of the hydrant, mm; Inner diameter of the DN body; Year of production; Producer's country name	5.12.2	BOHAMET - ARMATURA UNDERGROUND HYDRANT DN 100 PN 10/16 type HP - M cat. no 11.291.100-1250 1250 mm DN 100 2017 Poland Positive result.	compatible
9.	Cleansing and drying.	5.13.1	Before packaging, the hydrant is cleaned, the flue liners are dried.	compatible
	Exposed threads and unpainted surfaces of metal parts.	5.13.2	Covered with Press-Solidol, in accordance with the 4366 State Standard, variant of protection B3-I, B3-2. The period of validity of the hydrant maintenance is 24 months. The usage documentation should include: date of maintenance, set period of protection without re-maintenance and degreasing method. Positive result.	compatible

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PROGRAM REGIONALNY
 NARODOWA STRATEGIA SPÓJNOŚCI



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 ROZWOJU REGIONALNEGO



Mój region w Europie

CNBOP - PIB	TECHNICAL OPINION nr 172/BU/17	12/13
----------------	---------------------------------------	-------

Maintenance.	5.13.3	The top hole is covered with a plug and the bottom opening remains open for easier assembly.	compatible
Packing.	5.13.4	The hydrant is wrapped in a scrim foil, sealed with tape, and then placed on a pallet with wooden spacers. Other packaging may be used to ensure product safety during transport and storage. Packing is done to exclude shifting of the hydrant in the packaging during loading, transport and unloading.	compatible
Package.	5.13.5	It has the labeling in accordance with the requirements of the 14192 State Standards.	compatible
Technical and operational documentation.	5.13.6	Placed in a watertight container with a hydrant with the inscription: "Documentation".	compatible

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PROGRAM REGIONALNY
 NARODOWA STRATEGIA SPÓJNOŚCI



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Mój region w Europie

CNBOP - PIB	TECHNICAL OPINION nr 172/BU/17	13/13
----------------	---------------------------------------	-------

5. DECLARATIONS AND RESERVATIONS

The test results refer only to the tested sample of the product / test object. Without the written permission of the Laboratories Team, the report may not be reproduced (copied), otherwise than in its entirety.

The test report has been prepared in 3 copies.

THE END.

Technical documentation was prepared by:	tech. Krzysztof Bocian	12.05.2017
	qualification, name and surname	date and signature
The person approving the technical opinion:	inż.. Daria Kubis	12.05.2017
	qualification, name and surname	date and signature

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PROGRAM REGIONALNY
NARODOWA STRATEGIA SPÓJNOŚCI



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ROZWOJU REGIONALNEGO



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