


# BS6920 Test Report

REPORT NO. MA7992/I

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**Ethylene Propylene Rubber (EPR)**

**Hydrofirm**

<b>CLIENT:</b>	Wilo (UK) Ltd Second Avenue, Centrum 100 Burton-on-Trent Staffordshire DE14 2WJ
<b>CLIENT'S REFERENCE:</b>	PO84627
<b>PHOENIX NUMBER:</b>	UK760-0032662
<b>DATE</b>	<b>3 August 2023</b>
<b>WRITTEN BY:</b>  <b>MATTHEW BRIDGE</b> <b>ANALYST</b>	<b>REVIEWED BY:</b>  <b>HANNAH TODD</b> <b>LABORATORY SUPERVISOR</b>

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation



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Company Registration number in England and Wales.

SML-F-16 Version 12

**SUITABILITY OF NON-METALLIC PRODUCTS FOR USE IN CONTACT WITH WATER INTENDED FOR  
HUMAN CONSUMPTION WITH REGARD TO THEIR EFFECT ON THE QUALITY OF THE WATER  
WRAS TESTS OF EFFECT ON WATER QUALITY (BS 6920: 2014)**

**INFORMATION AND GUIDANCE NOTE**

**WATER REGULATIONS APPROVAL SCHEME**

The Scheme wishes to draw to the attention of product manufacturers and users that reports issued by accredited test laboratories do not of themselves constitute approval by the Scheme or the test laboratory. Only a letter from the Scheme, citing a Directory Reference Number, can be regarded as indicating approval.

<b>1. SAMPLES FOR TESTING</b>		
<b>General composition of product</b>		ethylene propylene rubber (EPR)
<b>Trade name and reference of material</b>		Hydrofirm Blue Borehole Cable Sheath
<b>Material manufacturer</b>		Prysmian, Germany
<b>Submitting organisation</b>		Wilo (UK) Ltd
<b>Component name/ref</b>		Hydrofirm
<b>Component manufacturer</b>		Prysmian, Germany
<b>Batch number of product</b>		BL70-19-01-23
<b>Date of manufacture of product</b>		19 January 2023
<b>Method of manufacture of sample</b>		extrusion
<b>Sampling procedure</b>		random sample from manufacturing
<b>Description of sample</b>		blue opaque smooth matt cable with exposed metallic ends covered with silicone sealant
<b>Surface area of test piece</b>		14997mm <sup>2</sup>
<b>Number of articles constituting a test piece</b>		1
<b>Dimensions of test piece:</b>	<b>ext./int. diameter/length: in-radius (as measured):</b>	4.07mm/1.98mm/788.00mm 0.52mm
<b>Calibration mark of test containers</b>		1 litre
<b>Date of application</b>		26 January 2023
<b>Date of receipt of test samples</b>		26 January 2023
<b>Condition of samples on receipt</b>		satisfactory
<b>Method of packaging</b>		plastic
<b>Conditions of storage of the samples between receipt and testing</b>		as instructed in BS6920-2.1: 2014: clause 5.2
<b>Proposed use of the product</b>		borehole power cable sheath

## 2. ODOUR AND FLAVOUR OF WATER

Number of tasters in the taste panel – 3

Extraction temperature – 23°C

Date test commenced – 24 July 2023

Extract 1

(i) chlorine free test water:

TASTER	ODOUR DESCRIPTION	FLAVOUR DESCRIPTION	FLAVOUR DILUTION NUMBER
1	nil	nil	<1
2	nil	nil	<1
3	nil	nil	<1

(ii) chlorinated test water:

TASTER	ODOUR DESCRIPTION	FLAVOUR DESCRIPTION	FLAVOUR DILUTION NUMBER
1	nil	nil	<1
2	nil	nil	<1
3	cardboard	nil	<1

Comment - thus the samples of this product have been found to comply with the requirements of BS 6920: Part 1: clause 4 when extracted at 23°C.

## 3. APPEARANCE OF WATER

Extraction temperature – 23°C

Date test commenced – 11 July 2023

Extract 1

	COLOUR (HAZEN UNITS)	TURBIDITY (FORMAZINE NEPHELOMETRIC UNITS)
Test container (product)	<2.5	0.05
Blank	<2.5	0.03
Net increase	nil	0.02

Comment - thus the sample of this product has been found to comply with the requirements of BS 6920: Part 1: clause 5 when extracted at 23°C.

## 4. GROWTH OF AQUATIC MICROORGANISMS

Date test commenced – 20 February 2023

Mean dissolved oxygen differences –

Test container (product)	0.5mg/l
Negative reference (glass) sample	0.0mg/l
Positive reference (wax) sample	6.7mg/l
Mean dissolved oxygen concentration of the test control	8.8mg/l

Note - At the end of this test the test piece showed no changes in colour and appearance.

Comment - thus the sample of this product has been found to comply with the requirements of BS 6920: Part 1: clause 6.

## 5. THE EXTRACTION OF SUBSTANCES THAT MAY BE OF CONCERN TO PUBLIC HEALTH

Extracts were tested using Monkey African Green Kidney CITES (Lot 10F019)

Extraction temperature – 23°C

Date test commenced – 16 May 2023

EXTRACT	GROWTH OF CELL TISSUE (MONOLAYER)
Reagent blank	healthy, confluent
Zinc sulphate validation solution (cytotoxic)	cell death
Sample	healthy, confluent

Comment - thus the sample of this product has been found to give a non-cytotoxic response and therefore it has been found to comply with the requirements of BS 6920: Part 1: clause 7 when extracted at 23°C.

## 6. THE EXTRACTION OF METALS

Extraction temperature – 23°C

Date test commenced – 9 May 2023

Number of extracts – 1

All analyses carried out on duplicate samples of the product as specified below

Aluminium, Antimony, Arsenic, Boron, Cadmium, Chromium, Iron, Lead, Manganese, Mercury, Nickel, Selenium:  
Inductively coupled plasma – mass spectrometry (ICP-MS)

### Extract 1

METAL	EXPRESSION OF THE RESULTS	MAX. ADMISSIBLE CONCENTRATION	REPORTING LIMIT	CONCENTRATION FINAL EXTRACT		DETERMINED REAGENT BLANKS
				I	II	
Aluminium	Al µg/L	200	20.0	< 20.0	< 20.0	< 20.0
Antimony	Sb µg/L	5	0.5	< 0.5	< 0.5	< 0.5
Arsenic	As µg/L	10	1.0	< 1.0	< 1.0	< 1.0
Boron	B µg/L	1000	100.0	< 100.0	< 100.0	<100.0
Cadmium	Cd µg/L	5	0.5	< 0.5	< 0.5	< 0.5
Chromium	Cr µg/L	50	5.0	< 5.0	< 5.0	< 5.0
Iron	Fe µg/L	200	20.0	< 20.0	< 20.0	< 20.0
Lead	Pb µg/L	10	1.0	< 1.0	< 1.0	< 1.0
Manganese	Mn µg/L	50	5.0	< 5.0	< 5.0	< 5.0
Mercury	Hg µg/L	1	0.1	< 0.1	< 0.1	< 0.1
Nickel	Ni µg/L	20	2.0	< 2.0	< 2.0	< 2.0
Selenium	Se µg/L	10	1.0	< 1.0	< 1.0	< 1.0

Comment - thus the samples of this product have been found to comply with the requirements of BS 6920: Part 1: clause 8 when extracted at 23°C.

## CONCLUSION

The samples of the products referred to in this report have been tested in accordance with the methods specified in BS 6920: Part 2: 2014 "Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water: Methods of test" and the requirements of the Water Regulations Approval Scheme WRAS Material Guidance, Version 3.0 issued 3 May 2022.

**This product has satisfied the criteria set out in BS 6920: Part 1: 2014 "Specification" and thus complies with the requirements of the Water Regulations Approval Scheme Tests of Effect on Water Quality (BS 6920: 2014): Cold Water Tests (23°C). It is suitable for use with cold but not hot water.**

N.B      The results specified in this report relate only to the sample of the product submitted for testing. Any changes in the nature or source of ingredients and the process of manufacture or application could affect the suitability of the product for use in contact with potable water.

Materials and products intended for use by a public water supply company in the preparation or conveyance of water may need to satisfy more comprehensive toxicological requirements as set specified by the Drinking Water Inspectorate. These additional requirements are necessary to ensure legal compliance with Regulation 31 of Water Supply (Water Quality) Regulations 2000.

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