

TESTING CENTER OF CABLE PRODUCTS

Autogennaya str. 7, Kharkov, 61099, Ukraine,
 Phone: +38 057 754 52 75
 E-mail: lab@yuzhcable.com.ua

Accredited by:
 National Accreditation Agency of Ukraine - A national accreditation body of Ukraine
 Certificate of Accreditation № 20353 dated January 16, 2024; Valid until January 15, 2029

TEST REPORT

Report reference number **14**
 Tested by **Andrew Konoplev, Alina Shurupova**
 Approved by **Nikolay Zykov**
 Date of issue **19-Jan-26**
 Testing laboratory **Testing center of cable products,**
 Address **Autogennaya str. 7, Kharkov, 61099, Ukraine,**
Phone: +38 057 754 52 75, E-mail: lab@yuzhcable.com.ua
 Manufacturer **YUZH CABLE WORKS, PJSC**
 Address **Autogennaya str. 7, Kharkov, 61099, Ukraine**
 Standard **IEC 60502-1:2004 Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) - Part 1: Cables for rated voltages of 1 kV (Um = 1,2 kV) and 3 kV (Um = 3,6 kV)**
 Test procedure **Tests**
 Cable type **АПвБ6Шп-1 5×16**
 Trade mark **YUZH CABLE**
 Rating(s) Uo/U **0,6/1**
 Dates of receipt of test item **06-Jan-26**
 Dates of performance of tests **From 07-Jan-26 to 16-Jan-26**
 Summary of test results **PASS**

Ref No.	Tests	Prescribed	Observed					Verdict
1	Electrical tests							
			GR	BU	BN	BK	GY	
1.1	Resistance of conductors (Ω/km)	Max. 1,91	1,88	1,87	1,85	1,85	1,88	Pass
1.2	Volume resistivity of insulation at (90±2)°C (Ω·cm)	Min. 10 ¹²	5,63	5,64	5,75	6,02	5,98	Pass
	Insulation resistance constant K _i at (90±2)°C (MΩ·km)	Min. 3,67	7,95	8,15	8,22	8,28	7,99	Pass
1.3	Voltage test 3,5 kV/5 min	No breakdown of the insulation	No breakdown of the insulation					Pass
2	Non-electrical tests							
2.1	Measurement of thickness of insulation - nominal value (mm)	0,7	0,74	0,74	0,75	0,73	0,75	Pass
2.2	Measurement of thickness of extruded inner covering - nominal value (mm)	1,0	1,15					Pass
2.3	Measurement of thickness of the armour galvanized steel tapes - value (mm)	0,5	0,5					Pass
2.4	Measurement of thickness of sheath - nominal value (mm)	1,7	1,85					Pass

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Ref No.	Tests	Prescribed	Observed					Verdict	
2.6	Mechanical properties of insulation								
	<i>Without ageing:</i>								
	Tensile strength	(N/mm ²)	Min. 12,5	18,8	19,4	18,5	19,8	18,0	Pass
	Elongation-at-break	(%)	Min. 200	545	540	600	520	520	Pass
	<i>After ageing in air oven:</i>								
	Duration (h) / Temperature (°C)		168/(135±3)						
	Tensile strength variation	(%)	Max. ±25	-4,9	-4,4	-5,1	-3,8	-5,7	Pass
	Elongation-at-break variation	(%)	Max. ±25	-6,0	-6,2	-7,7	-7,2	-6,7	Pass
	<i>Hot set test</i>								
	Time under load (min) / Temperature (°C)		15/(200±3)						
mechanical stress	(N/cm ²)	20							
Elongation under load	(%)	Max. 175	60	65	70	65	80	Pass	
Permanent elongation after cooling	(%)	Max. 15	0	0	0	0	0	Pass	
<i>Water absorption</i>									
Duration (h) / Temperature (°C)		336/(85±2)							
Increase of mass	(mg/cm ²)	Max. 1,0	0,20	0,21	0,22	0,19	0,21	Pass	
<i>Shrinkage test</i>									
Duration (h) / Temperature (°C)		1/(130±3)							
Shrinkage	(%)	Max. 4,0	1,9	1,9	2,0	2,1	1,8	Pass	
2.7	Mechanical properties of sheath								
	<i>Without ageing:</i>								
	Tensile strength	(N/mm ²)	Min. 12,5			20,1			Pass
	Elongation-at-break	(%)	Min. 300			630			Pass
	<i>After ageing in air oven:</i>								
	Duration (h) / Temperature (°C)		240/(110±2)						
	Elongation-at-break	(%)	Min. 300			595			Pass
<i>Shrinkage test</i>									
Duration (h) / Temperature (°C)		5/(80±2)							
Heating, cycles		5							
Shrinkage	(%)	Max. 3,0			1,61			Pass	
<i>Pressure test at high temperature</i>									
Duration (h) / Temperature (°C)		6/(110±2)							
Median of the depth of indentation	(%)	Max. 50			22			Pass	

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Ref No.	Tests	Prescribed	Observed					Verdict
2.8	Additional ageing test on pieces of completed cables							
	Duration (h) / Temperature (°C)	168/(100±2)						
	<i>mechanical properties of insulation:</i>							
	Tensile strength variation (%)	Max. ±25	-8,3	-8,9	-8,5	-9,2	-9,9	Pass
	Elongation-at-break variation (%)	Max. ±25	-9,2	-9,6	-9,8	-10,3	-10,6	Pass
	<i>mechanical properties of sheath:</i>							
	Elongation-at-break (%)	Min. 300	575					Pass

Nikolay Zykov,
 Head of TCCP

Andrew Konoplev,
 Head of the Laboratory of electrical tests

Alina Shurupova,
 Head of Laboratory of promising developments

