

TESTING CENTER OF CABLE PRODUCTS

Autogennaya str. 7, Kharkov, 61099, Ukraine,
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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 40
Tested by Andrew Konoplev, Alina Shurupova
Approved by Nikolay Zykov
Date of issue 24-Jan-25
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 ABBF 3×6
Trade mark YUZH CABLE
Rating(s) Uo/U 0,66/1,0
Dates of receipt of test item 14-Jan-25
Dates of performance of tests From 15-Jan-25 to 23-Jan-25
Summary of test results PASS

Ref No.	Tests	Prescribed	Observed			Verdict
1	Electrical tests					
			GR	BK	GY	Pass
1.1	Resistance of conductors (Ω/km)	Max. 5,11	5,06	5,04	5,06	Pass
1.2	Volume resistivity of insulation at 20°C (Ω·cm)	Min. 10 ¹³	7,27	7,18	7,22	Pass
	at 70°C (Ω·cm)	Min. 10 ¹⁰	5,95	6,04	6,15	Pass
	Insulation resistance constant K _i at 20°C (MΩ·km)	Min. 36,7	37,55	38,14	39,47	Pass
	at 70°C (MΩ·km)	Min. 0,037	0,062	0,065	0,059	Pass
1.3	Voltage test 2,4 kV/4 h	No breakdown of the insulation	No breakdown of the insulation			Pass
2	Non-electrical tests					
2.1	Measurement of thickness of insulation - value (mm)	1,0 _{0,2}	1,05	1,03	1,03	Pass
2.2	Measurement of thickness of sheath - value (mm)	1,8	1,90			Pass

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Ref No.	Tests	Prescribed	Observed			Verdict
2.3	Mechanical properties of insulation					
	<i>Without ageing:</i>					
	Tensile strength (N/mm ²)	Min. 12,5	14,4	14,8	14,5	Pass
	Elongation-at-break (%)	Min. 150	305	310	280	Pass
	<i>After ageing in air oven:</i>					
	Duration (h) / Temperature (°C)	168 / (100±2)				
	Tensile strength (N/mm ²)	Min. 12,5	13,6	13,8	13,6	Pass
	Elongation-at-break (%)	Min. 150	282	285	260	Pass
	Tensile strength variation (%)	Max. ±25	-5,9	-6,8	-6,2	Pass
	Elongation-at-break variation (%)	Max. ±25	-7,7	-8,2	-7,2	Pass
2.3	<i>Pressure test at high temperature</i>					
	Duration (h) / Temperature (°C)	4 / (80±2)				
	Median of the depth of indentation (%)	Max. 50	22	20	20	Pass
2.3	<i>Heat shock test</i>					
	Duration (h) / Temperature (°C)	1 / (150±3) No cracks	No cracks	No cracks	No cracks	Pass
2.4	Mechanical properties of sheath					
	<i>Without ageing:</i>					
	Tensile strength (N/mm ²)	Min. 12,5		14,1		Pass
	Elongation-at-break (%)	Min. 150		260		Pass
	<i>After ageing in air oven:</i>					
	Duration (h) / Temperature (°C)	168 / (100±2)				
	Tensile strength (N/mm ²)	Min. 12,5		12,8		Pass
	Elongation-at-break (%)	Min. 150		233		Pass
	Tensile strength variation (%)	Max. ±25		-9,5		Pass
	Elongation-at-break variation (%)	Max. ±25		-10,2		Pass
2.4	<i>Heat shock test</i>					
	Duration (h) / Temperature (°C)	1 / (150±3) No cracks		No cracks		Pass
2.4	<i>Pressure test at high temperature</i>					
	Duration (h) / Temperature (°C)	6 / (80±2)				
	Median of the depth of indentation (%)	Max. 50		29		Pass

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Ref No.	Tests	Prescribed	Observed			Verdict
2.5	Additional ageing test on pieces of completed cables	168 / (100±2)				
	Duration (h) / Temperature (°C)					
	<i>mechanical properties of insulation:</i>					
	Tensile strength variation (%)		Max. ±25	-6,5	-6,2	-6,8
	Elongation-at-break variation (%)	Max. ±25	-7,5	-7,0	-7,3	Pass
	<i>mechanical properties of sheath:</i>					
	Tensile strength variation (%)	Max. ±25		-8,1		Pass
	Elongation-at-break variation (%)	Max. ±25		-9,3		Pass
2.6	Vertical flame propagation					
	- time of application of flame s	120				
	- distance between the lower edge of the top support and the onset of charring mm	Min 50		371		Pass
	- distance between the lower edge of the top support and the charring extends downwards mm	Max 540		512		Pass

Nikolay Zykov,
 Head of TCCP

Andrew Konoplev,
 Head of the Laboratory of electrical tests

Alina Shurupova,
 Head of Laboratory of promising developments

