

TESTING CENTER OF CABLE PRODUCTS

Autogennaya str. 7, Kharkov, 61099, Ukraine,
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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 39
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 5x25
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	BU	BN	BK	GY	Pass
1.1	Resistance of conductors (Ω/km)	Max. 1,20	1,16	1,14	1,17	1,14	1,16	Pass
1.2	Volume resistivity of insulation at 20°C (Ω·cm)	Min. 10 ¹³	8,25	8,16	8,25	8,37	9,02	Pass
	at 70°C (Ω·cm)	Min. 10 ¹⁰	4,96	5,19	5,08	5,11	5,85	Pass
	Insulation resistance constant K _i at 20°C (MΩ·km)	Min. 36,7	38,17	37,22	38,05	37,44	38,24	Pass
	at 70°C (MΩ·km)	Min. 0,037	0,058	0,049	0,057	0,052	0,045	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)	1,2 _{0,22}	1,25	1,22	1,24	1,23	1,24	Pass
2.2	Measurement of thickness of sheath - value (mm)	1,8	1,93					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	15,4	14,7	14,9	15,0	14,2	Pass
	Elongation-at-break (%)	Min. 150	300	280	285	300	275	Pass
	<i>After ageing in air oven:</i>							
	Duration (h) / Temperature (°C)	168 / (100±2)						
	Tensile strength (N/mm ²)	Min. 12,5	14,8	14,1	14,2	14,1	13,4	Pass
	Elongation-at-break (%)	Min. 150	283	262	268	277	257	Pass
	Tensile strength variation (%)	Max. ±25	-4,2	-3,9	-4,8	-5,8	-5,5	Pass
	Elongation-at-break variation (%)	Max. ±25	-5,6	-6,5	-6,0	-7,7	-6,7	Pass
	<i>Pressure test at high temperature</i>							
Duration (h) / Temperature (°C)	4 / (80±2)							
Median of the depth of indentation (%)	Max. 50	25	27	27	24	25	Pass	
<i>Heat shock test</i>								
Duration (h) / Temperature (°C)	1 / (150±3) No cracks	No cracks	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			14,5			Pass
	Elongation-at-break (%)	Min. 150			255			Pass
	<i>After ageing in air oven:</i>							
	Duration (h) / Temperature (°C)	168 / (100±2)						
	Tensile strength (N/mm ²)	Min. 12,5			13,5			Pass
	Elongation-at-break (%)	Min. 150			227			Pass
	Tensile strength variation (%)	Max. ±25			-7,2			Pass
	Elongation-at-break variation (%)	Max. ±25			-10,9			Pass
	<i>Heat shock test</i>							
Duration (h) / Temperature (°C)	1 / (150±3) No cracks			No cracks			Pass	
<i>Pressure test at high temperature</i>								
Duration (h) / Temperature (°C)	6 / (80±2)							
Median of the depth of indentation (%)	Max. 50			28			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	-6,9	-5,2	-5,2	-5,7	-4,8
	Elongation-at-break variation (%)	Max. ±25	-7,4	-6,3	-6,3	-5,9	-6,7	Pass
	<i>mechanical properties of sheath:</i>							
	Tensile strength variation (%)	Max. ±25	-8,4					Pass
	Elongation-at-break variation (%)	Max. ±25	-10,8					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	375					Pass
	- distance between the lower edge of the top support and the charring extends downwards mm	Max 540	508					Pass

Nikolay Zykov,
 Head of TCCP

Andrew Konoplev,
 Head of the Laboratory of electrical tests

Alina Shurupova,
 Head of Laboratory of promising developments

