

TESTING CENTER OF CABLE PRODUCTS

Autogennaya str. 7, Kharkov, 61099, Ukraine,
 Phone: +38 057 754 52 75
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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 23
 Tested by Andrew Konoplev, Alina Shurupova
 Approved by Nikolay Zykov
 Date of issue 08-Feb-24
 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 60502-2:2014 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 2: Cables for rated voltages from 6 kV (Um = 7,2 kV) up to 30kV (Um = 36 kV)
 Test procedure Tests
 Cable type NA2XS(F)2Y-6/10 1×120RM/25
 Trade mark YUZH CABLE
 Rating(s) Uo/U 6/10
 Dates of receipt of test item 23-Jan-24
 Dates of performance of tests From 24-Jan-24 to 07-Feb-24
 Summary of test results PASS

Ref No.	Tests	Prescribed	Observed	Verdict
1	Electrical tests			
1.1	Resistance: (Ω/km) - of the conductor - of the concentric conductor	Макс. 0,253 Макс. 0,727	0,248 0,720	Pass Pass
1.2	Partial discharge test (pC)	Max. 5,0	1,8	Pass
1.3	Tan δ measurement	Max. 40×10 ⁻⁴	4,5×10 ⁻⁴	Pass
1.4	Resistivity of semi-conducting screens:(Ω×m) - conductor screen - insulation screen	Max. 1000 Max. 500	850 465	Pass Pass
1.5	Voltage test 24 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) - eccentricity	3,4 _{-0,44} ≤0,15	3,44 0,09	Pass Pass
2.2	Measurement of thickness of sheath - value (mm)	2,2 _{-0,64}	2,42	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	21,5	Pass
	Elongation-at-break (%)	Min. 200	380	Pass
	<i>After ageing in air oven:</i>			
	Duration (h) / Temperature (°C)	168 / (135±3)		
	Tensile strength variation (%)	Max. ±25	-4,2	Pass
	Elongation-at-break variation (%)	Max. ±25	-5,8	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	75	Pass	
Permanent elongation after cooling (%)	Max. 15	0	Pass	
<i>Water absorption</i>				
Duration (h) / Temperature (°C)	336 / (85±2)			
Increase of mass (mg/cm ²)	Max. 1,0	0,19	Pass	
<i>Shrinkage test</i>				
Duration (h) / Temperature (°C)	1 / (130±3)			
Shrinkage (%)	Max. 4,0	1,8	Pass	
2.4	Mechanical properties of sheath			
	<i>Without ageing:</i>			
	Tensile strength (N/mm ²)	Min. 12,5	22,5	Pass
	Elongation-at-break (%)	Min. 300	620	Pass
	<i>After ageing in air oven:</i>			
	Duration (h) / Temperature (°C)	240 / (110±2)		
	Elongation-at-break (%)	Min. 300	600	Pass
	<i>Shrinkage test</i>			
Duration (h) / Temperature (°C)	5 / (80±2)			
Heating, cycles	5			
Shrinkage (%)	Max. 3,0	1,2	Pass	
<i>Pressure test at high temperature</i>				
Duration (h) / Temperature (°C)	6 / (110±2)			
Median of the depth of indentation (%)	Max. 50	15	Pass	

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Ref No.	Tests	Prescribed	Observed	Verdict
2.5	Additional ageing test on pieces of completed cables Duration (h) / Temperature (°C) <i>mechanical properties of insulation:</i> Tensile strength variation (%) Elongation-at-break variation (%)	168 / (100±2) Max. ±25 Max. ±25	 -4,8 -5,7	 Pass Pass
	<i>mechanical properties of sheath:</i> Elongation-at-break (%)	Min. 300	580	Pass

Nikolay Zykov,
Head of TCCP



Andrew Konoplev,
Head of the Laboratory of electrical tests



Alina Shurupova,
Head of Laboratory of promising developments

