

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 17

Tested by Andrew Konoplev, Alina Shurupova

Approved by Nikolay Zykov

Date of issue 20-Jan-25

Testing laboratory Testing center of cable products,
Address Autogennaya str. 7, Kharkov, 61099, Ukraine,
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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 06-Jan-25

Dates of performance of tests From 07-Jan-25 to 17-Jan-25

Summary of test results PASS

Ref No.	Tests	Prescribed	Observed	Verdict
1	Electrical tests			
1.1	Resistance: (Ω/km)			Pass
	- of the conductor	Макс. 0,253	0,248	Pass
	- of the concentric conductor	Макс. 0,727	0,720	
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	Max. 1000	850	Pass
	- insulation screen	Max. 500	465	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)	3,4 _{-0,44}	3,44	Pass
	- eccentricity	≤0,15	0,09	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		
2.4	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
	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

