



PRODUCT SPECIFICATION	ISSUED DATE	Feb. 14, 2007	PAGE	1/8
	REVISION		REVISION NO.	

PRODUCT NAME : STLZW-B
 RATING : 130°C, 1000V rms

No.	Revised Date	Revised Details	Page	Report

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PRODUCT SPECIFICATION	ISSUED DATE	Feb. 14, 2007	PAGE	3/8
	REVISION		REVISION NO.	

4. TEST

4.1 Appearance

Each winding wire shall be examined for scratch, contamination, crack and other harmful defects on the insulation by visual examination.

4.2 Dimension

The wire shall be measured the conductor diameter, insulation thickness and outer diameter as specified in KS C 3006, 5 or JIS C 3003, 5.

4.3 Spark Test

Final product shall be subjected to the spark test in accordance with the requirements for UL1581 Section 900. The test shall be performed at 3,000 Vrms.

4.4 Flexibility Test

Three samples are taken from a same lot of wire prepared in the manner described in below and tested at room temperature. A straight piece of wire at least 305 mm (12 inches) long is to be wound for 6~12 continuous carefully and adjacent turns around a polished mandrel of the diameter specified in Table 1. After winding, the specimen is to be examined for exposure of the base conductor or delamination by visual examination. There shall be no exposure of bare conductor, or delamination of the insulation. After visual examination of the specimen, the sample is to be wound on the mandrel and subjected to electric strength tests at 3,000V for 1 min. The voltage shall be applied between the conductor and the mandrel.

Table 1 Mandrel diameter

Nominal conductor diameter		Mandrel diameter, mm (inch)	
Mm	Inch	mm \pm 0.2 mm	inch \pm 0.01 inch
0.20~0.34	0.008~0.014	4.0	0.16
0.35~0.49	0.014~0.019	6.0	0.24
0.50~0.74	0.019~0.029	8.0	0.31
0.75~2.49	0.029~0.039	10.0	0.39
2.50~5.00	0.100~0.200	Four times the conductor diameter	Four times the conductor Diameter

PRODUCT SPECIFICATION	ISSUED DATE	Feb. 14, 2007	PAGE	4/8
	REVISION		REVISION NO.	

4.5 Electric strength test

4.5.1 Straight test

Three samples are taken from a same Lot of wire prepared for this test. A straight piece of the final wire construction, approximately 305 mm (12 inches) in length, with the insulation removed at one end and wrapped approximately 150 mm (5.9 inch) length of metal foil. The voltage of 3,000V is to be applied between the conductor and foil wrapped in direct contact with the center 150 mm of the sample for 1 min.

4.5.2 Twist test

Three samples are taken from a same Lot of wire prepared in the manner described in below and tested at room temperature. A straight piece of the final wire construction, approximately 400 mm (16 inches) in length, with the insulation removed at both ends, is to be twisted back on itself for a distance of 125 ± 5 mm (5 ± 0.2 inches) with a load applied to the wire pair, and with the number of twists, as provided in loads applied to the wire pairs and number of twists, see Table 2. The loop at the end of the twisted section is to be cut at two places to provide a maximum spacing between the cut ends. Any bending to ensure an adequate separation between the two wire ends is to be arranged to void sharp bends or damage to the insulation. After visual examination, the sample is to be subjected to electric strength tests at 6,000V for 1 min. The voltage shall be applied between the conductor's cut ends.

Table 2 Loads applied to the wire and number of twists

Nominal conductor diameter				Load		Number of twists
Over		Up to an including		N	(lbf)	
mm	inch	mm	inch			
0.100	0.004	0.250	0.009	0.85	0.19	33
0.250	0.009	0.355	0.014	1.70	0.38	23
0.355	0.014	0.500	0.019	3.40	0.76	16
0.500	0.019	0.710	0.027	7.00	1.57	12
0.710	0.027	1.060	0.041	13.50	3.03	8
1.060	0.041	1.400	0.055	27.00	6.06	6
1.400	0.055	2.000	0.078	54.00	12.14	4
2.000	0.078	2.500	0.098	108.00	24.27	3

4.7 Heat Shock Test

Three samples are taken from a same Lot of wire prepared in the manner described in below and tested at room temperature. A straight piece of wire at least 305 mm (12 inches) long is to be wound for 6~10 continuous and adjacent turns around a polished mandrel of the diameter specified in the Table 2. The specimen is placed into an oven with forced air circulation for a period of 30 minutes and at a temperature within ± 5 °C (± 9 °F) of the temperature specified in Table 3. After removal from the oven, the specimen is to be allowed to cool to room temperature, and after cooling is to be examined for cracks under a magnification level (wire diameter 0.04~0.50, magnification level 5~10; wire diameter up to 0.5, magnification level 0~6).

PRODUCT SPECIFICATION	ISSUED DATE	Feb. 14, 2007	PAGE	5/8
	REVISION		REVISION NO.	

After visual examination of the specimen, the sample is to be wound on the mandrel and subjected to electric strength tests at 3,000V for 1 min. The voltage shall be applied between the conductor and the mandrel.

Table 3 Oven temperature

Thermal Class	A (105 class)	E (120 class)	B (130 class)	F (155 class)	H (180 class)
Oven temperature (°C)	200 (392)	215 (419)	225 (437)	240 (464)	260 (560)

5. INSPECTION

Inspection of final product shall be satisfied with Appendix 2 value accordance with the requirements for Section 4. The inspection items shall be added or omitted by customer's demand.

6. PACKAGING

The wires shall be wound on suitable bobbin without loosen and tangle according to the conductor diameter (Appendix 1) and adequately packaged to avoid scratch or tangle during transportation. The packaged products shall be possible to permit 3 open-joint and if there is insufficient standard packaging length available to fill additional ones. However, the additional quantity shall not exceeding 30% of total supply quantity.

7. PRODUCT DESCRIPTION

Each product is attached with a tag to indicate following information

- 1) Product name or Symbol : Triple insulated Litz Wire or STLZW-B
- 2) Conductor diameter : ex) 0.20 x 7 (0.60 mm)
- 3) Color
- 4) Product Lot No.
- 5) Quantity or Product length
- 6) Manufacturer
- 7) Date of manufacture

8. CAUTION OF HANDLE

- 1) Always keep product away from the fire.
- 2) Do not expose the product direct sunlight area.
- 3) Also be carefully not to expose the product hot or humidity area.
- 4) The relevant products shall be applied within one year. If not applied for within one year, the product performance shall be confirmed before using the product.

PRODUCT SPECIFICATION	ISSUED DATE	Feb. 14, 2007	PAGE	6/8
	REVISION		REVISION NO.	

9. Entire Agreement & Amendments

- 1) This Specification shall come into force as of the date of its agreement by the customer or one month after offered to customer and effect until terminated in customer's demands.
- 2) Amendments or changes to this Specification shall be valid only if made in writing and signed by an authorized signatory of each of the Parties.

PRODUCT SPECIFICATION	ISSUED DATE	Feb. 14, 2007	PAGE	7/8
	REVISION		REVISION NO.	

Appendix 1 Specification of Wire

Dimensions			Maximum Conductor Resistance
Conductor Diameter	Insulation		
	Typical Overall Diameter	Max. Overall Diameter	
(mm)	(mm)	(mm)	(Ω/km)
7/0.10	0.534	0.562	346.9
7/0.11	0.564	0.592	285.2
7/0.12	0.600	0.628	238.4
7/0.13	0.630	0.658	202.4
7/0.14	0.660	0.688	173.8
7/0.15	0.690	0.718	151.1
7/0.16	0.726	0.754	132.4
7/0.17	0.756	0.784	117.0
7/0.18	0.786	0.814	104.2
7/0.19	0.816	0.844	93.34
7/0.20	0.846	0.874	84.10
7/0.21	0.876	0.904	76.18
7/0.22	0.912	0.934	69.96
7/0.23	0.942	0.970	63.91
7/0.24	0.972	1.000	58.61
7/0.25	1.002	1.030	53.94
7/0.26	1.032	1.060	49.81
7/0.27	1.062	1.090	46.13
7/0.28	1.092	1.120	42.85
7/0.29	1.122	1.150	39.91
7/0.30	1.158	1.186	37.01

* All the above values are shown just for reference and may slightly differ from each Lot.

PRODUCT SPECIFICATION	ISSUED DATE	Feb. 14, 2007	PAGE	8/8
	REVISION		REVISION NO.	

Appendix 2 Summary of the test specification

Test Item	Property	Related Standard
Appearance	Shall not have scratch, contamination or crack on the surface and other harmful defects.	KS C 2611 JIS C 2529
Dimensions	Shall be satisfied with Appendix 1.	KS C 3006, 5.(1) JIS C 3003, 5.(1) (TEST 4 of IEC 60851-2, 3)
Spark Test	No pinhole at 3,000V with final product	UL1581 section 900 (IEC60950, 3rd Annex U.3.1)
Electric strength test (Withstand voltage)	Shall be withstand without breakdown at 3,000V for 1min (Straight test)	UL SUBJECT 2353, 9
	Shall be withstand without breakdown at 6,000V for 1min (Twist test)	
Flexibility	Specimens shall not show evidence of cracking.	UL SUBJECT 2353, 10
	Shall be no insulation breakdown at 3,000V for 1 min.	
Heat shock	Specimens shall not show evidence of cracking.	UL SUBJECT 2353, 11
	Shall be withstand without breakdown at 3,000V for 1min.	
Conductor Resistance	Shall be satisfied with Appendix 1.	KS C 3107 JIS C 3053