TEST REPORT

KERI

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한국전기연구원
KOREA ELECTROTECHNOLOGY RESEARCH INSTITUTE

INFORMATION SHEET

KERI(Korea Electrotechnology Research Institute) issues a Type Test Certificate and a Test Report as below.

1. Type Test Certificate

A Certificate contains a record of a series of type tests carried out strictly in accordance with IEC, and/or regional standard and national standard that are identical to IEC standard. The test object has fulfilled the requirements of this standard and the relevant ratings assigned by the manufacturer are endorsed by KERI. The Certificate is applicable only to the test object. KERI is responsible for the validity and the contents of the Certificate. The responsibility for conformity of any apparatus having the same designation as the one tested rests with the manufacturer. The certificate contains the essential drawings and a description of the equipment tested. Detailed rules are given in KERI's Type Test Certification Procedure.

2. Test Report

2.1 Type Test Report

A Type Test Report contains a record of a series of type tests carried out strictly in accordance with a standard recognized by KERI. The test object has fulfilled the requirements of this standard and the relevant ratings assigned by the manufacturer are endorsed by KERI. The Type Test Report is applicable only to the test object. KERI is responsible for the validity and the contents of the Type Test Report. The responsibility for conformity of any apparatus having the same designation as the one tested rests with the manufacturer. The Type Test Report contains the essential drawings and a description of the equipment tested. Detailed rules are given in KERI's Test Procedure.

2.2 Performance Test Report

A Performance Test Report contains a record of one or more tests which have been carried out according to a recognized standard and/or the client's instructions. These tests are not necessarily in accordance with a recognized standard. The test results do not verify ratings of the test object. Detailed rules are given in KERI's Test Procedure.

KERI issues three types of Performance Test Report.

2.2.1 The tests have been carried out strictly in accordance with a recognized standard. The test object has complied with the relevant requirements.

This sentence will appear on the front page of Performance Test Report if the tests have been performed in accordance with a recognized standard, but the series of tests does not completely fulfil the requirements for a Certificate of Compliance (for example, if the number of test series is not a complete series of type tests). The Report contains verified drawings and a description of the test object. The condition of the test object after the tests is assessed and recorded in the Report.

2.2.2 The tests have been carried out in accordance with the client's instructions. Test procedure and test parameters were based on a recognized standard.

This sentence will appear on the front page of Performance Test Report if the number of test duties, the test procedure and the test parameters are based on a recognized standard and related to the ratings assigned by the manufacturer. Verification of the drawings (if submitted) and assessment of the condition after the tests is only done on the client's request.

2.2.3 The tests have been carried out according to the client's instructions.

This sentence will appear on the front page of Performance Test Report if the test shots, test procedure and/or test parameters are not in accordance with a recognized standard.

3 KERI is a member of STL(Short-circuit Testing Liaison) and the accredited testing laboratory under Clause 2 of Article 2 in "Guidelines on certified testing criteria and methods for electrical equipment" (Public Notice No. 2008-120, Ministry of Knowledge Economy, Korea).

TEST REPORT

CLASSIFICATION	Type Test
TEST OBJECT	Heat shrinkable cable termination
DESIGNATION	THSY-1/4(3+1).4 0.6/1.0(1.2) kV 3C×300 ㎟ + 1C×150 ㎟ Type I
RECEIPT No.	TRD13S00643 (February 18, 2013)
APPLICANT	SHANGHAI JIAMENG INTERNATIONAL TRADING Co., Ltd. No.346 Qinwan Road, Jinshanwei Town, Jinshan District, Shanghai,China
MANUFACTURER	JIANGSU JIAMENG ELECTRICAL EQUIPMENT Co., Ltd. No.5 Zhongli Road,Binhai Industrial Zone, Qidong City, Jiangsu Province, China
DATE OF TESTS	May 13, 2013 ~ October 10, 2013
DATE OF ISSUE	November 13, 2013

The test object, constructed in accordance with the description, essential drawings and photographs incorporated in this Type Test Report has been subjected to the series of proving tests in accordance with

BS EN 50393:2006

This Type Test Report has been issued by KERI.

The results are shown in the record of Proving Tests and the oscillograms attached hereto. The values obtainec and the general performances are considered to comply with the above Standard and to justify the ratings assigned by the manufacturer as listed on page No. 3.

The Type Test Report applies only to the test object. The responsibility for conformity of any apparatus having the same designations with that tested rests with the Manufacturer.

TOTAL No. OF PAGES(16) : records (8), photographs (2), circuit diagrams (0), drawings & descriptions (2), attachments(2), oscillograms (2)

Prepared by Kim , Ji-Hwan

Verified by (Technical manager) Ahn , Sang-Pil

Approved by Park , Nam-Ok

Power Apparatus Testing & Evaluation Division

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Tested by :

Kim Ji-hwan KERI

Witnessed by :

Zhangjie Tang SHANGHAI JIAMENG INTERNATIONAL TRADING Co., Ltd.

Kristall Liu JIANGSU JIAMENG ELECTRICAL EQUIPMENT Co., Ltd.

Drawings :

The manufacturer guarantees that the test object submitted is manufactured in accordance with the following drawings. KERI verified that these drawings adequately represented the test object.

The following drawing is included in this test report.

Reference No.	Drawing No.	Revision No.	Date
001	CAK-300BS-12	B1	2013.05.14
002	CAK-150A-12	B1.0	2013.03.27

Heat shrinkable cable termination

Applied standard	BS EN 50393:2006
Manufacturer	JIANGSU JIAMENG ELECTRICAL EQUIPMENT Co., Ltd.
Designation	THSY-1/4(3+1).4
Date of manufacture	May 1, 2013
Cable used for testing	
Conductor	Stranded aluminium
Insulation	XLPE
Rated voltage $U_o/U(U_m)$	0.6/1.0(1.2) kV
Nominal cross-sectional area	3C × 300 mm^2 + 1C × 150 mm^2
Number of cores	4

Ratings of the test object assigned by manufacturer and proved by tests :

Rated voltage $U_o/U(U_m)$	0.6/1.0(1.2) kV
Nominal cross-sectional area	3C × 300 mm^2 + 1C × 150 mm^2
Number of cores	4
Type of termination	I

Ratings of the test object assigned by manufacturer :

Terminal lug material	Bimetal (Al / Cu)

List of the tests

Test items	Standard and clauses	Test date	Sheet No.
1 AC voltage withstand test in air	BS EN 50393 8.3	May 13, 2013	5/16
2 Insulation resistance test in air	BS EN 50393 8.4	May 13, 2013	5/16
3 Heating cycle test in air	BS EN 50393 8.6	July 12, 2013 ~Aug. 3, 2013	6/16
4 Heating cycle test in water	BS EN 50393 8.6	Aug. 5, 2013 ~Sep. 4, 2013	6/16
5 AC voltage withstand test in water	BS EN 50393 8.3	Oct. 10, 2013	7/16
6 Insulation resistance test in water	BS EN 50393 8.4	Oct. 10, 2013	7/16
7 Examination (for information only)	BS EN 50393 8.8	Oct. 10, 2013	7/16
8 Description of tests	-	-	8/16

1 AC voltage withstand test in air

Test voltage kV	Test frequency Hz	Test duration min	Requirement	Voltage applied to	Earth connected to	Test result
4 kV	60	1	No failure	R Y G B	Metallic sheath	No failure
				R	Y G B Metallic sheath	No failure
				Y	R G B Metallic sheath	No failure
				G	R Y B Metallic sheath	No failure
				B	R Y G Metallic sheath	No failure

* Atmospheric condition : 26.5 ℃, 44 % RH, 1 011 hPa
* Phase conductor : R, Y, G
* Neutral conductor : B

2 Insulation resistance test in air

Test voltage kV	Test duration min	Requirement	Measuring points		Test result
DC 1 kV	1	≥ 50 MΩ	R Y G B	Metallic sheath	≥ 99.9 GΩ
			R	Y G B Metallic sheath	≥ 99.9 GΩ
			Y	R G B Metallic sheath	≥ 99.9 GΩ
			G	R Y B Metallic sheath	≥ 99.9 GΩ
			B	R Y G Metallic sheath	≥ 99.9 GΩ

* Atmospheric condition : 26.5 ℃, 44 % RH, 1 011 hPa
* Phase conductor : R, Y, G
* Neutral conductor : B

3 Heating cycle in air

Test method and requirement	Test result
The temperature of the phase conductor shall be raised to (95 ~ 100) ℃ by heating the assembly, by passing current through the cables. A steady conductor temperature shall be maintained for not less than 2 h. After the 2 h minimum steady temperature period the current shall be switched off and the cable allowed to cool naturally to within 10 K of ambient within a period not less than 3 h. The test assembly shall be subjected to 63 cycles in air.	Refer to the test results of 5 and 6
* Refer to the Osc. ET01	

4 Heating cycle in water

Test method	Test result
The assembly shall be placed in a water bath and the water height over the crutch shall be (300 ± 100) mm. During the heating cycle temperature of the water shall be (20 ± 15) ℃. The temperature of the phase conductor shall be raised to (95 ~ 100) ℃ by heating the assembly, by passing current through the cables. A steady conductor temperature shall be maintained for not less than 2 h. After the 2 h minimum steady temperature period the current shall be switched off and the cable allowed to cool naturally to within 10 K of ambient within a period not less than 3 h. The test assembly shall be subjected to 63 cycles in water.	Refer to the test results of 5 and 6
* Refer to the Osc. ET02	

5 AC voltage withstand test in water

Test voltage	Test frequency	Test duration	Requirement	Voltage applied to	Earth connected to	Test result
4 kV	60 Hz	1 min	No failure	R Y G B	Metallic sheath & Water	No failure
				R	Y G B Metallic sheath & Water	No failure
				Y	R G B Metallic sheath & Water	No failure
				G	R Y B Metallic sheath & Water	No failure
				B	R Y G Metallic sheath & Water	No failure

* Atmospheric condition : 25.3 ℃, 62 % RH, 1 014 hPa
* Phase conductor : R, Y, G
* Neutral conductor : B

6 Insulation resistance test in water

Test voltage	Test duration	Requirement	Measuring points		Test result
DC 1 kV	1 min	≥ 50 MΩ	R Y G B	Metallic sheath & Water	254 MΩ
			R	Y G B Metallic sheath & Water	33.3 GΩ
			Y	R G B Metallic sheath & Water	24.4 GΩ
			G	R Y B Metallic sheath & Water	2.9 GΩ
			B	R Y G Metallic sheath & Water	436 MΩ

* Atmospheric condition : 25.3 ℃, 62 % RH, 1 014 hPa
* Phase conductor : R, Y, G
* Neutral conductor : B

7 Examination (for information only)

Test method	Test result
After completing the test, the assembly shall be dismantled. All components shall be examined for traces of moisture within water-proofing components.	Trace of moisture
* Refer to the Photo. ET02	

8 Description of tests

8.1 The above tests were carried out on the test objects submitted by the applicant in accordance with BS EN 50393:2006 (Test methods and requirements for accessories for use on distribution cables of rated voltage 0.6/1.0 (1.2) kV).

8.2 The above tests were carried out on one test sample in sequence.

8.3 When examined the joint after completing the tests, there was water inside crutch. The end.

Photographs

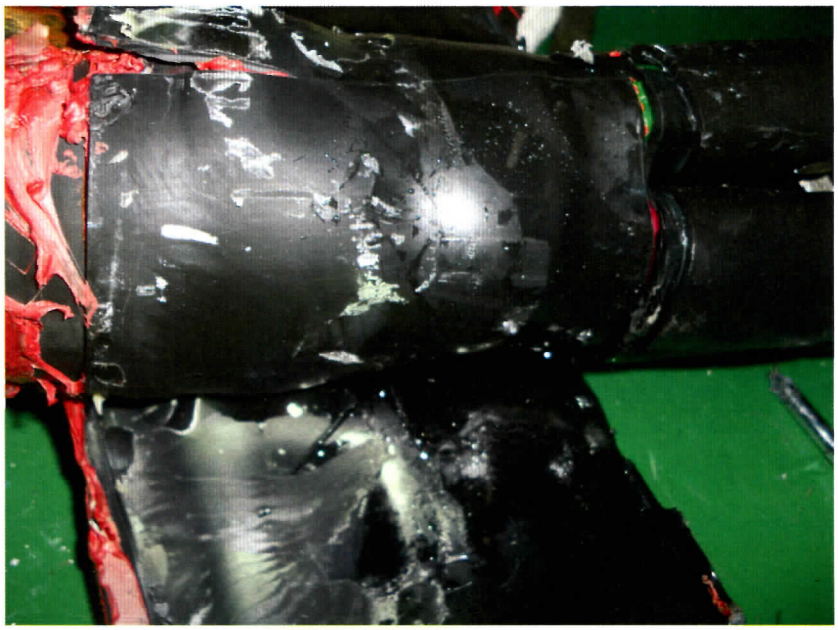
<Before assembling>

<After assembling>

Apparatus : Heat shrinkable cable termination
Designation : THSY-1/4(3+1).4
Ratings : 0.6/1.0(1.2) kV 3C × 300 mm^2 + 1C × 150 mm^2 Type I
Manufacturer : JIANGSU JIAMENG ELECTRICAL EQUIPMENT Co., Ltd.

Photo. ET01 : Test object

Photographs



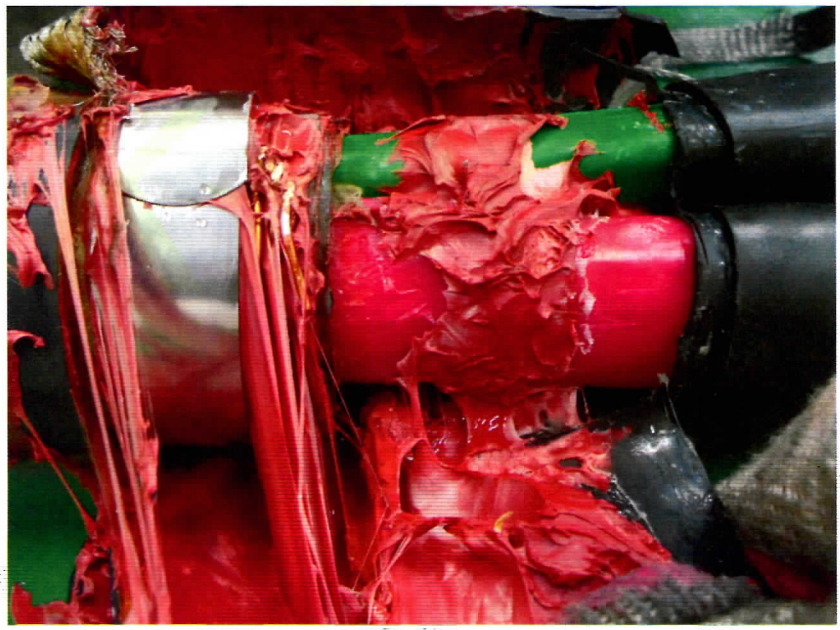
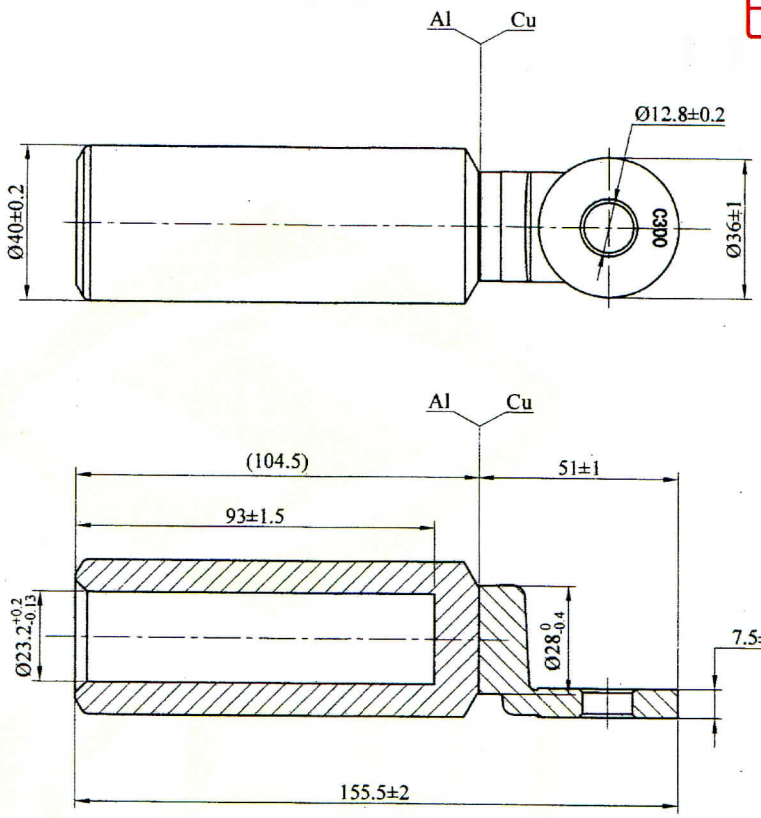


Photo. ET02 : Examination after completing the test

Drawings

TICAL-300BS-12

KERI
2013-05-20
001
JH Kim



Technical Detail

1. Finish: bright self finish.
2. Capped and greased on aluminum side.

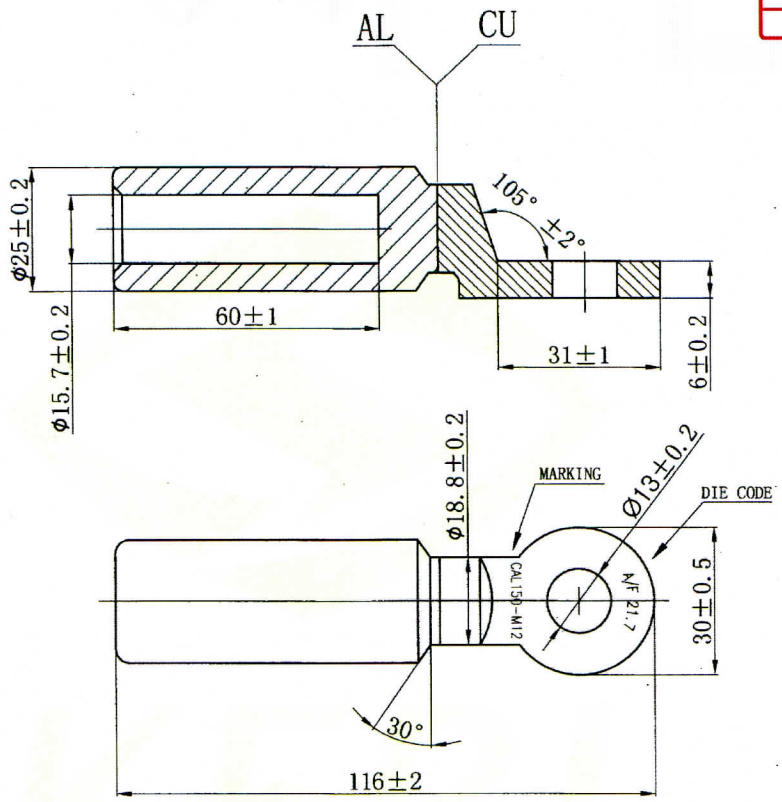
All dimensions are in mm.

MELEC www.melec.com.cn		SHANGHAI JIAMENG ELECTRICAL EQUIPMENT CO.,LTD	
Material:	E-CU 99.9% AL-1070	TITLE: Bimetallic Lug	
Approved by:			
Checked by:	2013.5.14	DWG. No. CAL-300BS-12	Rev. B1
Designed by:	唐凝 2013.5.14		
Date:	14.05.2013	Scale:	Sheet

Drawings

TICALA150I2

KERI
2013-05-20
002
JH Kim



受控文件
分发号 MT-1

Technical Detail:
1. Material: E-Cu 99.9% , AL 1070
2. Greased and capped on the AL side
3. Finish: bright

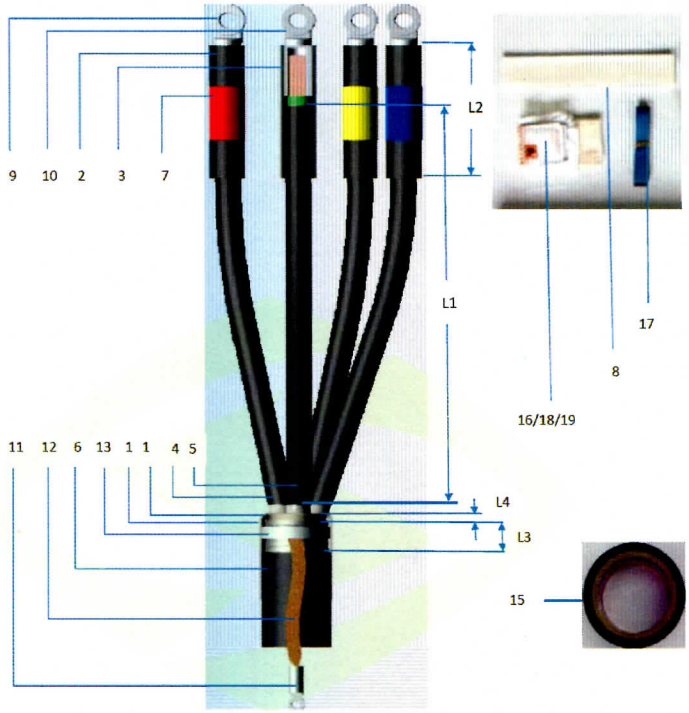
All dimensions are in mm.

Remark:This drawing is used for testing

MELEC www.melec.com.cn		JIANGSU JIAMENG ELECTRICAL EQUIPMENT CO.,LTD	
Material:		TITLE: BIMETALLIC LUG	
Approved by:	27/3-13		
Checked by:	2013.3.27	Product No.	Rev. B1.0
Designed by:	汪新德	Product Type CAL-150A-12	
Date:	2013-3-27	Scale:	Sheet 1 of 1

Attachments

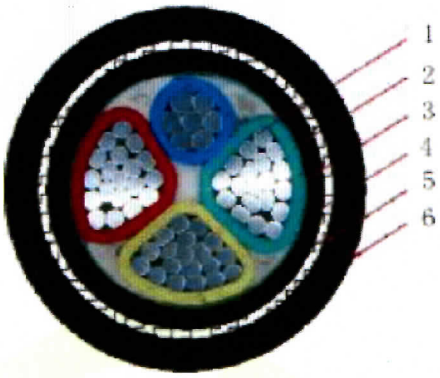
Diagram:



The Cable cross-sectional area		L1	L2	L3	L4
300mm²*3+150mm²*1		600mm	200mm	30mm	10mm
No	Description		Item	Length (mm)	Quantity (pcs)
1	Insulation of four finger		MKBK4	Φ90/32	1
2	Protective sleeve		MRA2	200	3
3	Protective sleeve		MRA2	200	1
4	Protective sleeve		MRA2	600	3
5	Protective sleeve		MRA2	600	1
6	Protective sleeve		MRA2	200	1
7	Color tube		M1	30	3
8	sealant		TAPE01	320	5
9	connection terminal		CAL-300A-12	300mm²	3
10	connection terminal		CAL-150A-12	150mm³	1
11	Grounding terminal		JM(JGB)25-10	10mm²	1
12	Tinned copper braid		KZB01	500	1
13	Constant force spring ring		KZB02	Φ12	1
14	Copper binding wire		KZB03	1000	1
15	PVC insulation tape		KZB04	5000	1
16	Cleaning bag		QJB01	10ml	2
17	Sand paper		QJB02	P80	2
18	cleaning cloth		QJB03		1
19	Glove		QJB04		1
Date		Draw up	Auditing	Approve	
2013-3-22		Yunnan zhang	Zhangjie zhang	Zhile zhang	

Attachment ET01 : Assembling diagram

Attachments



Type: YJLV22 Voltage:0.6/1kV Standard: GB/T12706-2008

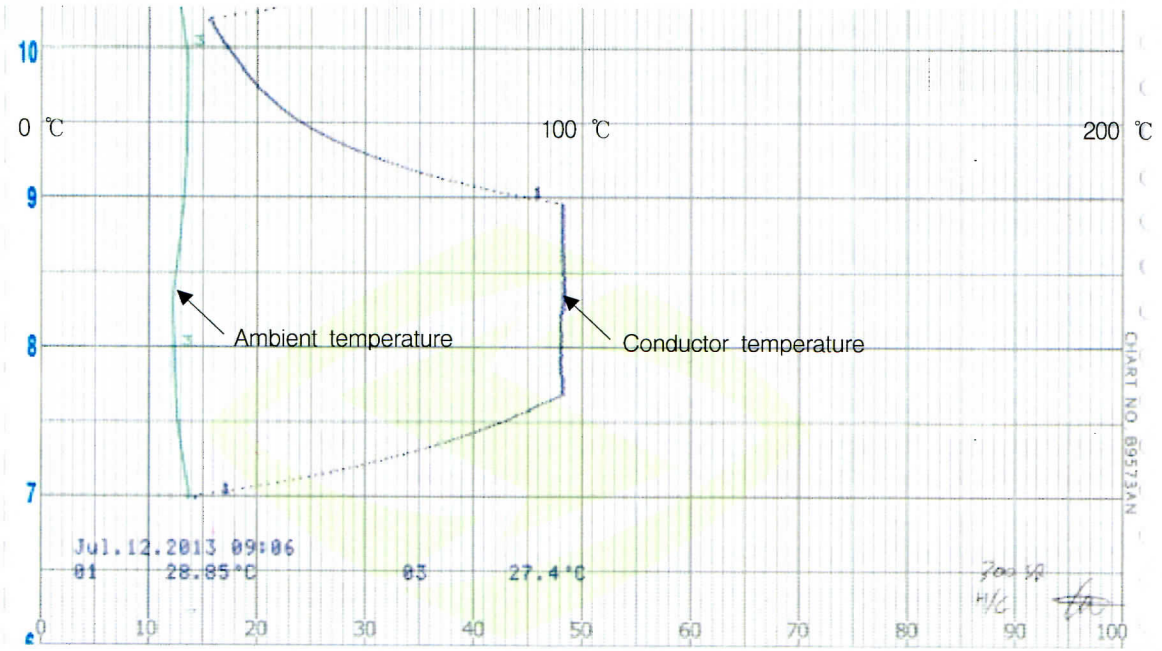
SN	STRUCTURE		UNIT	DATA	
1	conductor	size		3x300-1x150	
		nominal area	mm2	300	150
		piece/single core diameter	NO./mm	61/2.5	37/2.25
		the max resistance at 20℃	Ω/km	0.0607	0.124
2	insulation	material	XLPE		
		nominal thickness	mm	1.8	1.4
3	laying up	wrapping material	non-woven fabrics		
		layers/thickness	NO./mm/mm	2/0.2	
		laying up thickness	mm	51.2	
4	bedding	material	PVC		
		nominal thickness	mm	1.70	
5	armour	material	galvanized steel strip		
		layers/thickness	mm	2/0.5	
6	sheath	material	PVC		
		nominal thickness	mm	3.1	
		cable diameter	mm	67.0	
		approximately weight	kg/km	5747.0	

Attachment ET02 : Construction of cable used for testing

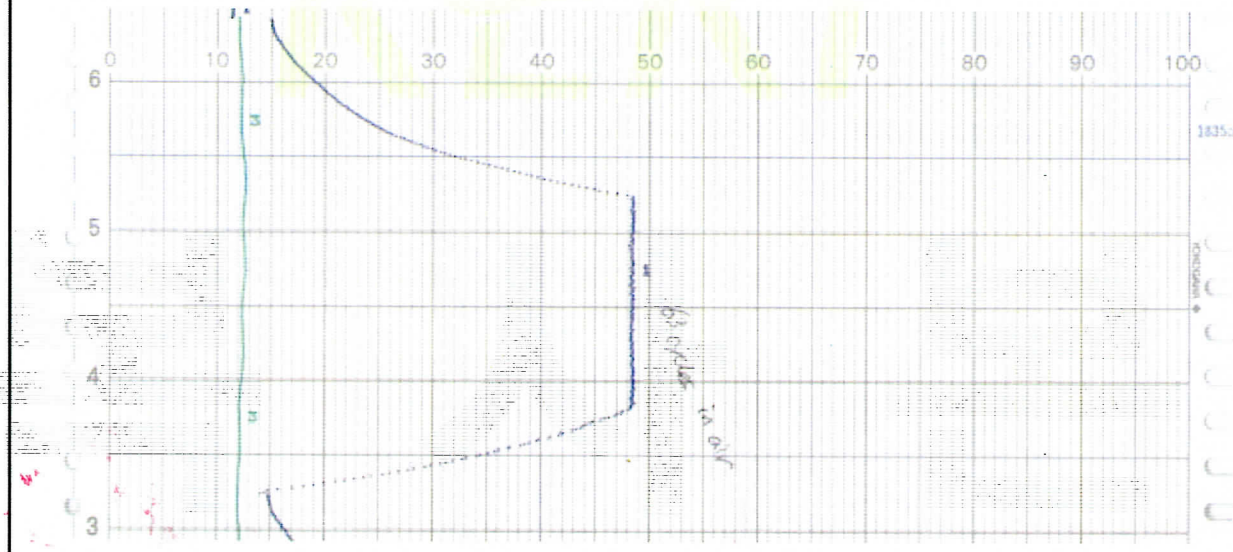
Oscillograms

Osc. ET01

Heating cycle in air



1st cycle

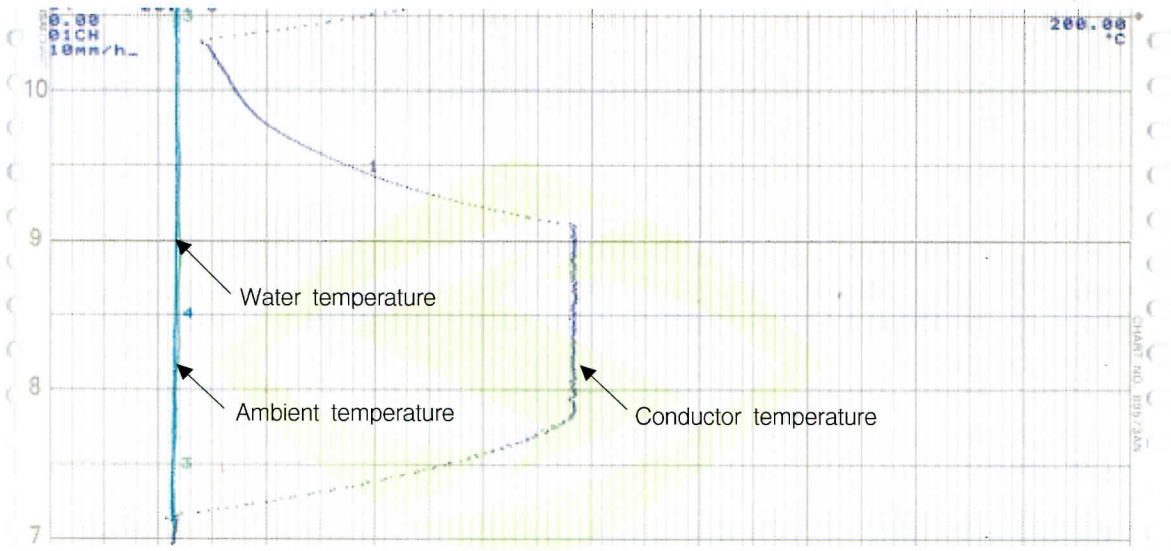


63th cycle

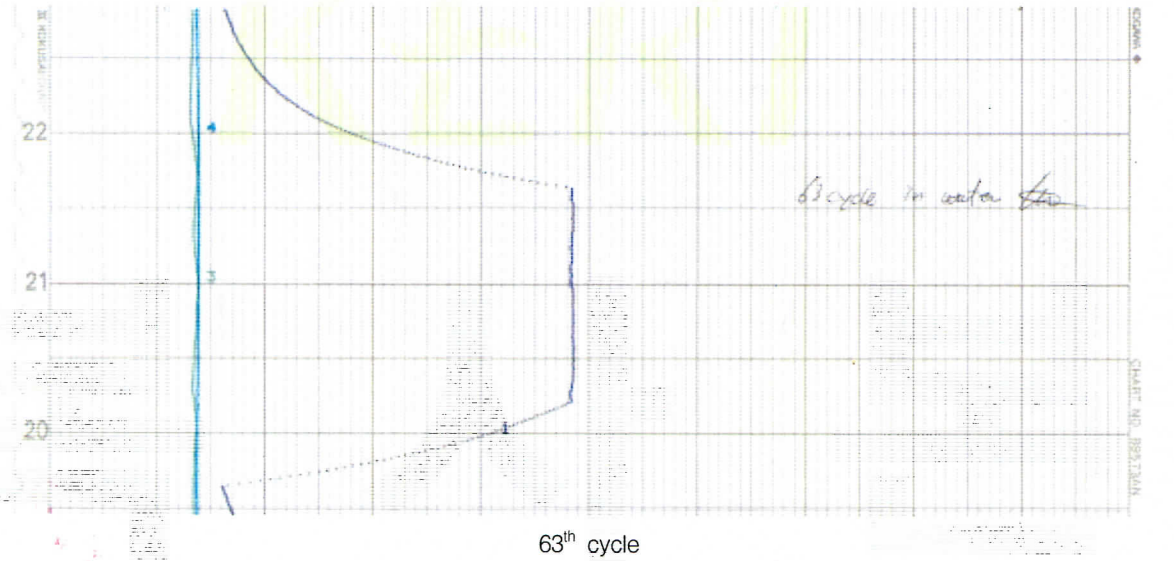
Oscillograms

Osc. ET02

Heating cycle in water



1st cycle



63th cycle