



Underwriters Laboratories Inc.®

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Date: 09/13/2000
Subscriber: 111091002
File No: E207502
Project No: 00NB03995
PD No: 00023764
Type: L
PO Number:

Subject: Procedure And/Or Report Material

We have completed our investigation of the subject product and have established Follow-Up Service in accordance with your application.

Enclosed is your copy of the Follow-Up Service Procedure which describes your product in detail. Please examine this Procedure carefully and notify MATTHEW PRATS (EXT. 23094), in writing, promptly of any inaccuracies or omissions. Kindly file the Procedure where it will be accessible for the Field Representative's use.

The general methods and conditions of this Service are outlined in the Follow-Up Service Agreement which has been signed by an officer of your company. The original copy of this agreement is on file at our Corporate Office, Northbrook, Illinois.

Unless otherwise advised, any future invoices will be mailed to the Applicant's address which is shown on the first page of the enclosed Procedure. If you have any special billing instructions which you would like to establish, i.e. a particular individual, title, department, address or purchase order number, please write to Naomi Gage, Supervisor of our Progress Department at the address shown in the letterhead.

Thank you for letting us serve you.

cc: MEL File

UL INSPECTION CENTER 733



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File E207502
Project 99ME48109

July 11, 2000

REPORT

on

COMMUNICATIONS CABLE

Middle East Specialized Cables
Riyadh, Saudi Arabia

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D E S C R I P T I O N

PRODUCT COVERED:

USL and CNL: Communications Cable, Type CMR (75°C).

ENGINEERING CONSIDERATIONS:

USL indicates compliance with UL 444.

CNL indicates compliance with CSA-C22.2 No.214.

CONSTRUCTION DETAILS:

General Character and Use - This cable is constructed in accordance with the Standard for Communications Cables, UL444/CSA-C22.2 No.214.

Conductor - In accordance with the Standard.

Insulation - HDPE or LDPE, min average thickness 8 mils, min thickness at any point 6 mils, max average thickness 12 mils, insulation may be applied in two layers.

Assembly - Six (6) to eight (8) conductors assembled in accordance with the Standard.

Shield (optional)- In accordance with the Standard.

Braid (optional) - In accordance with the Standard, min coverage not specified.

Jacket - PVC compound Teknor Apex 93-51-L1 with min average thickness 30 mils and min thickness at any point 24 mils.

Marking - In accordance with the Standard.

T E S T R E C O R D N o . 1

This manufacturer submitted a Type CMR cable with eight (8) 24 AWG solid copper conductors employing HDPE insulation and overall gray PVC jacket compound Teknor Apex 93-51-L1.

The following tests were conducted in accordance with Underwriters Laboratories Inc.'s Standard for Communications Cable, UL 444. The results obtained complied with the requirements. These test results relate only to the item tested.

DETAILED EXAMINATION:

	<u>Brown Ins.</u>	<u>White Ins.</u>
Number of conductors		8
Dia of solid conductor, mils	20.3	20.4
Average insulation thickness, mils	6	6
Min insulation thickness, mils	5	6
Average ins skin thickness, mils	4	4
Min ins skin thickness, mil	3	3
Lay of conductors, inches		0.7
Lay of conductor pairs, inches		5.9
Average jacket thickness, mils		33
Min jacket thickness, mils		29
Assembly		+

+ Cable consists of eight (8) insulated solid copper conductors and overall jacket.

<u>Physical Properties:</u>	<u>Insulation</u>	<u>Jacket</u>
<u>Unaged -</u>		
Average tensile strength, lbf/in ²	3305	2287
Average elongation, percent	510	178
<u>After 48 hrs air oven aging at 100°C -</u>		
Average tensile strength, lbf/in ²	3500	----
Percent of original	106	----
Average elongation, percent	594	----
Percent of original	116	----
<u>After 168 hrs air oven aging at 100°C -</u>		
Average tensile strength, lbf/in ²	----	2342
Percent of original	----	102
Average elongation, percent	----	182
Percent of original	----	102

Cold Bend Test on insulation and complete cable (4 hrs at -20°C):

Any surface cracking?	None
Any circumferential depressions?	None
Any internal cracking?	None
Any other damage?	None

<u>Insulation Shrinkback:</u> (1 hr at 115°C)	<u>Sample 1</u>	<u>Sample 2</u>	<u>Sample 3</u>
Shrinkage, mils	250	200	300

Dielectric Voltage Withstand Tests:

AC Test of conductors - 1500 V	Complies
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UL 1666

Sample No.	Cable O.D. (in)	No. of Lengths	Maximum Flame Height (ft-in)	Max Damage Height (ft-in)			Max Temp (°F)
				Melt	Jacket Char	Ash	
1	.249	48	11-0	11-6	10-9	9-0	644
2	.249	48	7-6	8-6	7-6	6-3	534

C O N C L U S I O N

Samples of the product covered by this Report have been found to comply with the requirements covering the class and the product judged to be eligible for Listing and Follow-Up Service. The manufacturer is authorized to use the Laboratories' Mark on such products which comply with the Follow-Up Service Procedure and any other applicable requirements of Underwriters Laboratories Inc. Only those products which properly bear the Laboratories' Mark are considered as Listed by Underwriters Laboratories Inc.

Report by:

Reviewed by:

Matthew Prats

Brett Milau

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