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Date: 2015/12/04
 Subscriber: 102492001
 PartySite: 536116
 File No: E241282
 Project No: 4787017577
 PD No: 15054621
 Type: R
 PO Number: 4560005418

Subject: **Procedure And/Or Report Material**

The following material resulting from the investigation under the above numbers is enclosed.

Issue

<u>Date</u>	<u>Vol</u>	<u>Sec</u>	<u>Pages</u>	<u>Revised Date</u>
2011/11/14	2	A	Appendix	
2015/12/01	2		Cert of Compliance	
			Add New Indep Report	

Inspections at your plant will be conducted under the supervision of ROB GEUIJEN, UL INSPECTION CENTER GERMANY, UL INTERNATIONAL GERMANY GMBH, ADMIRAL-ROSENDAHL-STRASSE 9, NEU-ISENBURG, Germany, 63263., PHONE: 69-489810-0, FAX: 69-489810-280, EMAIL: ROB.GEUIJEN@UL.COM

Please file revised pages and illustrations in place of material of like identity. New material should be filed in its proper numerical order.

NOTE: Follow-Up Service Procedure revisions DO NOT include Cover Pages, Test Records and Conclusion Pages. Report revisions DO NOT include Authorization Pages, Indices, Section General Pages and Appendixes.

Please review this material and report any inaccuracies to UL's Customer Service Professionals. Contact information for all of UL's global offices can be found at <http://ul.com/aboutul/locations>.

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FRK File

UL INSPECTION CENTER 287

COMPONENT - PLASTICS (QMFZ2, QMFZ3, QMFZ8, QMFZ9)

TABLE B - INDEX TO TESTING

Sample Group	#/Group /Year	Generic Class	Material Designation	Report Date	Thk, mm	Color	Flame	MCC Ref	IR Ref	TGA Ref	DSC Ref	Additional Info	Test Program Code
1	1	Nitrile Rubber (NBR)											
			AF/Armaflex (b)	2004-02-04	3.0	BK	V-0, 5VB	-	M12-06-03, M07-16-10, M07-17-10	02-26-03, M01-23-10, M01-24-10	06-05-03, M05-23-10, M05-24-10	-	B, Q, TR0082
			AF/Armaflex UL1	2015-12-01	3.0	BK	V-0, 5VB	-	K08-29-15	K08-52-15	K08-53-15	-	B, Q, TR0082
					4.2	BK	V-0, 5VA	-	K08-29-15	K08-52-15	K08-53-15	-	B, Q, TR0082
			AF/Armaflex UL2 (c)	2010-10-08	3.0	BK	V-0, 5VA	-	M07-18-10	M01-25-10	M05-25-10	-	B, Q, TR0082
		NH/Armaflex (d)	2004-02-04	3.0	GY	HF-1	-	M12-02-03	-	06-01-03	-	U, TR0082	
2	1	Ethylene Propylene Diene Terpolymer (EPDM)											
			Armaflex HT	2004-02-04	3.0	BK	V-0	-	M06-05-10 (MP00817)	M01-18-10	-	-	B

COMPONENT - PLASTICS (QMFZ2, QMFZ3, QMFZ8, QMFZ9)

INDEX TO FOOTNOTES:

- (a) - Density range: 0.070-0.110 g/cc.
- (b) - Density Range 0.040 - 0.080 g/cc
- (c) - Density Range 0.066 - 0.081 g/cc
- (d) - Density Range 0.055 - 0.085 g/cc

CERTIFICATE OF COMPLIANCE

Certificate Number 20151204-E241282
Report Reference E241282-20111114
Issue Date 2015-DECEMBER-04

Issued to: ARMACELL GMBH
ROBERT-BOSCH-STRASSE 10
48153 MUENSTER GERMANY

**This is to certify that
representative samples of**

COMPONENT - PLASTICS
USR/CNR :
Ethylene Propylene Diene Terpolymer (EPDM) : Armaflex
HT
Nitrile Rubber (NBR) : AF/Armaflex (b), AF/Armaflex UL1,
AF/Armaflex UL2 (c), NH/Armaflex (d)

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.


Standard(s) for Safety: For standard information please visit UL iQ Plastics
Database
(<https://my.secure.home1.ul.com/portal/page/portal/usa/iQ/iQWelcome>)

Additional Information: See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's
Certification and Follow-Up Service.

Recognized components are incomplete in certain constructional features or restricted in performance
capabilities and are intended for use as components of complete equipment submitted for investigation rather
than for direct separate installation in the field. The final acceptance of the component is dependent upon its
installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program
UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number 20151204-E241282
Report Reference E241282-20111114
Issue Date 2015-DECEMBER-04

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

INDEX TO FOOTNOTES:

- (a) - Density range: 0.070-0.110 g/cc.
- (b) - Density Range 0.040 - 0.080 g/cc
- (c) - Density Range 0.066 - 0.081 g/cc
- (d) - Density Range 0.055 - 0.085 g/cc



Bruce Mahrenholz, Director North American Certification Program

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File E241282

Project 4787017577

December 01, 2015

Report

on

Component - Plastics

Armacell GmbH

GERMANY

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TEST RECORD NO. 1

SAMPLES:

Specimens of the materials noted below have been found to comply with the requirements of the following Standards.

Tested Grade(s)	Color(s)	Maximum Pigment Loading (wt.%) [§]		Thk (mm)
		Organic	Inorganic	
AF/Armaflex UL1	BK	3.5	-	3.0, 4.0

(§) - Maximum pigment loading of the materials does not exceed 0.5% organic or 5.0% inorganic by weight unless otherwise indicated

(b)- Density range: 0.0519 - 0.0571 g/cc

No additional testing was deemed necessary in order to establish Canadian National Recognition. The following tests were considered representative of the same tests required by CAN/CSA-C22.2 No. 0.17. A CRD is not required in this category since all applicable requirements are performance based only.

GENERAL:

Test results relate only to the items tested.

The test methods and results stated below have been reviewed and found to be in accordance with the requirements within the Standards noted in the Summary.

METHOD:

UL746A - Polymeric Materials - Short Term Property Evaluations

- Infrared Spectroscopy (IR) - Sec. 43
- Thermogravimetry (TGA) - Sec. 46
- Differential Scanning Calorimetry (DSC) - Sec. 47

Grade	Material	Reference Dates		
		IR	TGA	DSC
AF/Armaflex UL1	NBR	K08-29-15	K08-52-15	K08-53-15

UL 94 - Tests for Flammability of Plastics Materials for Parts in Devices and Appliances

- 20 mm Vertical Burning Test; V-0, V-1, or V-2 - Sec. 8
- 500 w (125 mm) Vertical Burning Test; 5VA or 5VB - Sec. 9

UL746B - Polymeric Materials - Long Term Property Evaluations

- Relative Thermal Index based upon Historical Record - Sec. 7

UL746A - Polymeric Materials - Short Term Property Evaluations

- Density Determination of Foamed Polymeric Materials - Sec. 42

Test Record Summary:

The results of this investigation indicate that the product(s) evaluated comply with the applicable requirements in

- the Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, UL94, Sixth Edition, revised July 8, 2015
- the Standard for Polymeric Materials - Short Term Property Evaluations, UL746A, Sixth Edition, revised August 28, 2015
- the Standard for Polymeric Materials - Long Term Property Evaluations, UL746B, Fourth Edition, revised July 16, 2014
- the Evaluation of Properties of Polymeric Materials, CAN/CSA-C22.2 No. 017-00, Second Edition, revised October 1, 2000, reaffirmed 2013

and therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

CONCLUSION

Samples of the component covered by this Report have been found to comply with the requirements covering the category and the components are found to comply with UL's applicable requirements. The description and test result in this Report are only applicable to the sample(s) investigated by UL and does not signify the product(s) described as being covered under UL's Follow-Up Service Program. When covered under UL's Follow-Up Service Program, the manufacturer is authorized to use the Recognized Marking on such products which comply with UL's Follow-Up Service Procedure and any other applicable requirements of UL LLC. The Recognized Component Mark of UL LLC on the product, or the Recognized Marking symbol on the product and the Recognized Component Mark on the smallest unit container in which the product is packaged, is the only method to identify products investigated by UL to published requirements and manufactured under UL's Recognition and Follow-Up Service.

This Report is intended solely for the use of UL and the Applicant for establishment of UL certification coverage of the product under UL's Follow-Up Service. Any use of the Report other than to indicate that the sample(s) of the product covered by the Report has been found to comply with UL's applicable requirements is not authorized and renders the Report null and void. UL shall not incur any obligation or liability for any loss, expense, or punitive damages, arising out of or in connection with the use or reliance upon the contents of this Report to anyone other than the Applicant as provided in the agreement between UL and Applicant. Any use or reference to UL's name or certification mark(s) by anyone other than the Applicant in accordance with the agreement is prohibited without the express written approval of UL. Any information and documentation involving UL Mark services are provided on behalf of UL LLC or any authorized licensee of UL.

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