

 Sample Tag No.:
 F212878153

 Labware Project No.:
 1001344016

 File No.:
 BP8910

 Vol No.:
 1

 Issued Date:
 2021-10-29

Follow-Up Sample Test Report

Applicant: Address: Party Site Number:	WACO COMPOSITES, A DIV OF SPECIALTY COMPOSITES GROUP LTD 302 S 27TH ST WACO TX 76710 United States 816002
Manufacturer: Address: Party Site Number:	WACO COMPOSITES, A DIV OF SPECIALTY COMPOSITES GROUP LTD 302 S 27TH ST WACO TX 76710 United States 816002
Product Category: Category Name: Model Number(s): Sample Selection Date: UL Contact:	Armorcore Level 6

File	BP8910			Sample	Tag	F212878153	 Page	1
FOLLOW-UE	P TESTING	DATA	PACKAGE					

Number of pages in this package 8 [including additional pages] (Fill in when using printed copy as record)

CLIENT INFORMATIO	ON (Optional)
Manufacturer	Waco Composites, A Div Of Specialty Composites Group Ltd
Name	
Manufacturer	816002
Subscriber No.	
/Party Site No.	

AUDIT INFORMAT	EON:				
Description	[X] Per Sta	andard No.	UL 752	Edition	11
of Tests	[]Per Pro	ocedure Appendiz	K Vol.	Sec Letter	
	Issued or	Revised Date fo	or the referenced	Appendix	
[X] Tests Condu	ucted by 1	ALLAN CONRAD	02820		
<pre>[] UL Staff cor or witnessing t (WTDP only) [X] UL Staff supervising UL training</pre>	testing	DEREK GARDNER	L2		
[]Authorized Si (TPTDP)	ignatory				
		Printe	ed Name	Signature. I for Th	

TESTS	TO BE CONDUCTED:	
		[] Comments/Parameters
		[] Tests Conducted by 2
Test		[X] Comply/Does Not Comply ³
No.	Test Name	[] Link to separate data files ⁴
1	BALLISTICS TEST - BULLET	RESULTS COMPLY
	RESISTING MATERIALS	

If noncompliant test results are obtained, provide this data to a qualified project handler for further processing.

Special Instructions -

ULS-00752-COGT-Datasheet-2001 Form Page 1

Form Issued: 2009-11-16 Form Revised:

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FileBP8910Sample TagF212878153Page 2FOLLOW-UP TESTING DATA PACKAGE

Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient		Relative		Barometric	
Temperature, C	±	Humidity, %	±	Pressure, mBar	±

ULS-00752-COGT-Datasheet-2001 Form Page 2

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910 Sample Tag F212878153 Page 3

Tested by:

Date 2021-10-29

TEST LOCATION: (To be completed by Staff Conducting the Testing)
[X]UL or Affilia	te []WTDP []TPTDP
Company Name:	UL LLC INC.
Address:	333 PFINGSTEN RD., NORTHBROOK, ILLINOIS, 60062

TEST EQUIPMENT INFORMATION

[X] UL test equipment information is recorded on Meter Use.

[] UL test equipment information is recorded on <<insert location and local laboratory equipment system identification.>>

Inst. ID No.	Instrument Type	Test Number +, Test Title or Conditioning	Function /Range	Last Cal. Date	Next Cal. Date
			,		

+ - If Test Number is used, the Test Number must be identified on the data sheet pages or on the Data Sheet Package cover page.

The following additional information is required when using client's or rented equipment. The Inst. ID No. below corresponds to the Inst. ID No. above.

Inst. ID No.	Make/Model/Serial Number/Asset No.

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Sample Tag F212878153

Page 4

Tested by:

Date 2021-10-29

TEST SAMPLE IDENTIFICATION:

The table below is provided to establish correlation of sample numbers to specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Date Received	[] Test No.+	Sample No.	Manufacturer, Product Identification and Ratings
10-25-21	1	1	ARMORCORE LEVEL 6
			LOT #2118371B
	Received	Received No.+	Received No.+ No.

+ - If Test Number is used, the Test Number or Numbers the sample was used in must be identified on the data sheet pages or on the Data Sheet Package cover page. ++ - If the samples are from a manufacturer or location other than the testing location.

[] This document contains data or information using color and if printed, should be printed in color to retain legibility and the information represented by the color.

ULS-00752-COGT-Datasheet-2001 Form Page 4

Form Issued: 2009-11-16 Form Revised:

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Sample Tag F212878153

Page 5

UL752 Section 17

Tested by:

Date 2021-10-29

BALLISTICS TEST - BULLET RESISTING MATERIALS

METHOD

Material type	Material Manufacturer	Ballistics Rating (Level)
Armocore	Waco Compoites, A div of	6
Specialty composites group LTD		

The tests were conducted at a range of 15 feet (4.6 m) using a test barrel or weapon and the ammunition specified in Table 3.1 of UL 752. Each test sample of material was mounted in a rigidly fixed frame. During testing room ambient was maintained at $22 \pm 3^{\circ}$ C ($72 \pm 5^{\circ}$ F). Corrugated cardboard indicators, approximately 1/8 inch (3.2 mm) thick, were placed a distance of approximately 18 inches (457 mm) behind the protected side of the test sample.

Sample	Material	Shot Pattern
	Туре	
[x]1	Metallic or	Room Temperature
	Non-metallic	22 ±3°C (72 ±5°F)
	Material -	[x] Five shot pattern (Level 6, 7 or 8)
		[] Three shot pattern (Level 1,2 or 3)
		[] One shot pattern (Level 4 or 5)
[]2	Non-metallic	Prior to testing one sample was conditioned at 13°C (55°F) for 3
	Material -	hours.
	indoor use	[] Three shot pattern (Level 1,2 or 3)
		[] One shot pattern (Level 4 or 5)
[]3	Prior to testing the attack side of the sample was conditioned	
	material -	at minus 32 \pm 3°C (minus 26 \pm 5°F) for 3 hours while the other
	outdoor use	side was conditioned at at 22 \pm 3°C (72 \pm 5°F).
		[] Three shot pattern (Level 1,2 or 3)
		[] One shot pattern (Level 4 or 5)
[] 4	Non-metallic	Prior to testing sample was conditioned at 35°C (95°F) for 3
	Material -	hours.
	indoor use	[] Three shot pattern (Level 1,2 or 3)
		[] One shot pattern (Level 4 or 5)
[]5	Non-metallic	Prior to testing the entire sample was conditioned at 49 \pm 3°C
	Material -	$(120 \pm 5^{\circ}F)$ for 3 hours.
	outdoor use	[] Three Shot Pattern (Level 1,2 or 3)
		[] One Shot Pattern (Level 4 or 5)

One Shot	One shot was fired at the approximate center of the test sample.
Pattern	
Three Shot Pattern	Three shots were fired at the approximate center of the test sample with the shots spaced 4 $\pm 1/2$ inch (102 ± 12.7 mm) apart in a triangular pattern The measurement between each shot was made from the center of the impact of each shot on the test sample.
Five Shot Pattern	Five shots were fired in a square pattern that was 4-1/2 by 4-1/2 inches (114 by 114 mm) located in the center of the sample. The first of the five shots was placed in the upper left hand corner; the second shot was placed in the upper right hand corner; the third shot was placed in the lower right hand corner; the fourth shot was placed in the lower left hand corner; the fifth shot was placed at the center of the square.
	A tolerance of +/- 1/2 inch (12.7 mm)was allowed.

ULS-00752-COGT-Datasheet-2001 Form Page 5 Form Issued: 2009-11-16 Form Revised:

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 File
 BP8910
 Sample Tag
 F212878153
 Page
 6

Tested by:

Date 2021-10-29

BALLISTICS TEST - BULLET RESISTING MATERIALS (CONT'D) UL752 Section 17

RESULTS

Room Ambient Temperature, °C	23
Distance between Corrugated cardboard indicators and	18
protected side of the test sample, in.	

Sample No	Shot number	Measured Bullet Velocity (ft/s)	Distance between shots, in (1-2)	Distance between shots, in (2-3)	Distance between shots, in (3-4)	Distance between shots, in (4-1)
1	1	1437	-	-	-	-
1	2	1416	4.5	_	-	-
1	3	1524		4.5	-	-
1	4	1483			4.5	-
1	5	1533				4.5

Sample No	Shot number	Measured Bullet Velocity (ft/s)	Distance between shots, in (1-2)	Distance between shots, in (2-3)	Distance between shots, in (3-1)
2	1				
2	2				
2	3				
3	1				
3	2				
3	3				
4	1				
4	2				
4	3				
5	1				
5	2				
5	3				

Sample	Location of	Was pattern	Observations (penetration, embedded
No.	pattern / shot	acceptable? Y=yes, N=no	fragments, openings)
1		4	NO ND
T	TL, TR, BR, BL,	YES	NS, NP
	CENTER		
2			
3			
4			
5			

ULS-00752-COGT-Datasheet-2001 Form Page 6

Form Issued: 2009-11-16 Form Revised:

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File	BP8910	Sample Tag	F212878153	Page	7

Tested by:

BALLISTICS TEST - BULLET RESISTING MATERIALS (CONT'D) UL752 Section 17

Conditioning temperature, °C	Sample No	Conditioning Start Time, (hr:min)	Conditioning End Time, (hr:min)
23	4309625	N/A	N/A

Notes:

NP - No penetration of the projectile through the test sample

NS - No spalling of material on the protected side of the test sample to the extent that fragments of the projectile or assembly embeded into or damaged the cardboard indicators.

Note 1 - For unsupported edge test, spalling of bullet-resisting material is acceptable

Note 2 - For two shot pattern, spalling of bullet-resisting material from the protected side of the test sample is acceptable under this test condition.

[X] REQUIREMENTS	
there shall be	
1) no penetration of the projectile through the test sample, and	
2) no spalling of material on the protected side of the test sample to the extent that fragments embed into or damage the cardboard indicators, and	[Complies] [Docs Not Comply]
3) no opening of sufficient size to permit insertion of the muzzle of a standard weapon designed to use the ammunition used for the test completely through the sample.	

ULS-00752-COGT-Datasheet-2001 Form Page 7 Form Issued: 2009-11-16 Form Revised:

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File	BP8910	Sample Tag	F212878153	Page	8
Tested by	7:			Date	2021-10-29

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ULS-00752-COGT-Datasheet-2001 Form Page 8 Form Issued: 2009-11-16 Form Revised:

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