



TEST REPORT

Test Report # 18W-004185 Date of Report Issue: December 14, 2018
 Date of Sample Received: June 20, 2018 Pages: Page 1 of 36

CLIENT INFORMATION:

Company: Spector & Co.
 Address: -



SAMPLE INFORMATION:

Description: 20L dry bag with 1.5" shoulder strap and heat sealed front pocket
 Assortment: Grey & black
 Model/style No.: VF31, VF37, VF32, VF27, VF36, VF33, VF38, VF34, VF28
 SKU No.: BG702
 Factory/Supplier: USW031
 Quantity Submitted: 4
 Country of Distribution: Canada & USA
 Country of Origin: China
 Testing Period: 06/20/2018-07/25/2018, 09/19/2018-12/14/2018

OVERALL RESULT:

PASS with information

Refer to page 2 for test result summary and appropriate notes.

HANGZHOU ASIAINSPECTION
 TESTING TECHNOLOGY CO., LTD

Kevin Lee

Kevin Lee
 Technical Manager



HANGZHOU ASIAINSPECTION TESTING TECHNOLOGY CO., LTD ♦ Email: Labtesting@asiainspection.com ♦ Tel: (86) 571-8999 7158
 ♦ 5/F A2 Building ♦ No. 1213 Huoju South Road ♦ Puyan Street ♦ Binjiang District ♦ Hangzhou ♦ China 检验检测专用章

The test result(s) and conclusion(s) in this report relate to the sample(s) tested as described herein.
 This test report may not be reproduced in whole or in part, without written approval of Hangzhou Asiainspection Testing Technology Co., Ltd



TEST REPORT

Test Report # 18W-004185 Date of Report Issue: December 14, 2018
 Date of Sample Received: June 20, 2018 Pages: Page 2 of 36

TEST RESULTS SUMMARY:

At the request of the client, the following tests were conducted:

CONCLUSION	TEST(S) CONDUCTED
PASS	California Proposition 65, Total Lead in Paints and Surface Coatings
PASS	California Proposition 65, Total Lead in Substrate Materials
PASS	Canadian Surface Coating Materials Regulations SOR/2016-193, Total Lead in Paints and Surface Coatings
PASS	Canadian Consumer Products Containing Lead (Contact with Mouth) Regulation SOR/2010-273 as Amended by SOR/2016-171, Total Lead in Accessible Substrates
PASS	California Proposition 65, Total Cadmium in Paints and Surface Coatings
PASS	California Proposition 65, Total Cadmium in Substrate Materials
PASS	California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)
PASS	CPSC 16 CFR 1307 Prohibition of Children’s Toys and Child Care Articles Containing Specified Phthalates(DBP, BBP, DEHP, DINP, DHEXP / DnHP, DCHP, DIBP, DPENP)
PASS	Client’s Requirement, Phthalates content
PASS	19 CFR 134.11, Country of Origin
PASS	Uniform Packaging and Labeling Regulation
PASS	Marking of Imported Goods Order, (C.R.C., c.535), Country of Origin
PASS	Charter of French Language, (R.S.Q., c.C-11), Province of Quebec Labeling
PASS	Consumer Packaging and Labeling Act (R.S., 1985, c. C-38)
PASS	Color Fastness to Crocking
PASS	Color Fastness to Water
PASS	Color Fastness to Light
Refer to Detailed Results	Dimensions
Refer to Detailed Results	The capacity in liters for bag
Refer to Detailed Results	Article Weight
PASS	Defects
PASS	Workmanship
PASS	SOR/2016-194 and Method F01 Flammability of Textile Products
Refer to Detailed Results	Fabric Weight Per Unit Area



HANGZHOU ASIAINSPECTION TESTING TECHNOLOGY CO., LTD ♦ Email: Labtesting@asiainpection.com ♦ Tel: (86) 571-8999 7158
 ♦ 5/F A2 Building ♦ No. 1213 Huoju South Road ♦ Puyan Street ♦ Binjiang District ♦ Hangzhou ♦ China 检验检测专用章

The test result(s) and conclusion(s) in this report relate to the sample(s) tested as described herein.
 This test report may not be reproduced in whole or in part, without written approval of Hangzhou Asiainpection Testing Technology Co., Ltd



TEST REPORT

Test Report # 18W-004185 Date of Report Issue: December 14, 2018
Date of Sample Received: June 20, 2018 Pages: Page 3 of 36

TEST RESULTS SUMMARY:

At the request of the client, the following tests were conducted:

CONCLUSION	TEST(S) CONDUCTED
PASS	Tensile Strength
PASS	Tearing Strength
PASS	Abrasion Resistance
PASS	Pilling Resistance
PASS	Zipper Strength
PASS	Zipper Operability
PASS	Water Repellency-Spray Test
PASS	Water Resistance –Rain Test
Refer to Detailed Results	Fiber Content
PASS	Client's Requirement for Static Load Test





DETAILED RESULTS:

California Proposition 65, Total Lead in Paints and Surface Coatings

Test Method: CPSC-CH-E-1003-09.1
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	2	---	---	---	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	30	---	---	---	---	90
Conclusion	PASS	---	---	---	---	

Note:
mg/kg =Milligrams per kilogram
LT = Less than
ND = Not detected (Reporting Limit = 15 mg/kg)

Remark:
The specification is quoted from client’s requirement.



**DETAILED RESULTS:****California Proposition 65, Total Lead in Substrate Materials**

Test Method: CPSC-CH-E1001-08.3 (Metal), CPSC-CH-E1002-08.3 (Non-Metal)

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+8	3	4+5	6+7	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	27	ND	ND	---	100
Conclusion	PASS	PASS	PASS	PASS	---	

Note:

mg/kg =Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit =15 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

Remark:

The specification is quoted from client's requirement.





DETAILED RESULTS:

Canadian Surface Coating Materials Regulations SOR/2016-193, Total Lead in Paints and Surface Coatings

Test Method: CPSC-CH-E-1003-09.1
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	2	---	---	---	---	Total Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	30	---	---	---	---	90
Conclusion	PASS	---	---	---	---	

Note:
mg/kg=Milligrams per kilogram
LT = Less than
ND = Not detected (Reporting Limit =15 mg/kg)





DETAILED RESULTS:

Canadian Consumer Products Containing Lead (Contact with Mouth) Regulation SOR/2010-273 as Amended by SOR/2016-171, Total Lead in Accessible Substrates

Test Method: CPSC-CH-E1001-08.3 (Metal), CPSC-CH-E1002-08.3 (Non-Metal)

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+8	3	4+5	6+7	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	27	ND	ND	---	90
Conclusion	PASS	PASS	PASS	PASS	---	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.





DETAILED RESULTS:

California Proposition 65, Total Cadmium in Paints and Surface Coatings

Test Method: ASTM F963-17 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	2	---	---	---	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Cadmium (Cd)	ND	---	---	---	---	75
Conclusion	PASS	---	---	---	---	

Note:

mg/kg =Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)

Remark:

The specification is quoted from client’s requirement.



**DETAILED RESULTS:****California Proposition 65, Total Cadmium in Substrate Materials**

Test Method: ASTM F963-17 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+8	3	4+5	6+7	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Cadmium (Cd)	ND	ND	ND	ND	---	75
Conclusion	PASS	PASS	PASS	PASS	---	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

Remark:

The specification is quoted from client's requirement.



**DETAILED RESULTS:****California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)**

Test Method: CPSC-CH-C1001-09.3
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		1+8	2	4+5	6+7	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DnHP)	84-75-3	ND	ND	ND	ND	1000
Conclusion		PASS	PASS	PASS	PASS	

Note:

mg/kg (Milligrams per kilogram) = 0.0001 % m/m (Percent by mass)

LT = Less than

ND = Not detected (Reporting Limit = 150 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

Remark:

The specification is quoted from client's requirement.



**DETAILED RESULTS:****CPSC 16 CFR 1307 Prohibition of Children's Toys and Child Care Articles Containing Specified Phthalates (DBP, BBP, DEHP, DINP, DHEXP / DnHP, DCHP, DIBP, DPENP)**

Test Method: CPSC-CH-C1001-09.3(Modified), In-House Method

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		1+8	2	4+5	6+7	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DHEXP / DnHP)	84-75-3	ND	ND	ND	ND	1000
Dicyclohexyl phthalate (DCHP)	84-61-7	ND	ND	ND	ND	1000
Diisobutyl phthalate (DIBP)	84-69-5	ND	ND	ND	ND	1000
Di-n-pentyl phthalate (DPENP)	131-18-0	ND	ND	ND	ND	1000
Conclusion		PASS	PASS	PASS	PASS	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 150 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.



**DETAILED RESULTS:****Client's Requirement, Phthalates content**

Test Method: CPSC-CH-C1001-09.3
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		1+8	2	4+5	6+7	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DHEXP / DnHP)	84-75-3	ND	ND	ND	ND	1000
Di-n-octyl phthalate (DNOP)	117-84-0	ND	ND	ND	ND	1000
Diethyl phthalate (DEP)	84-66-2	ND	ND	ND	ND	1000
Diisobutyl phthalate (DIBP)	84-69-5	ND	ND	ND	ND	1000
Dicyclohexyl phthalate (DCHP)	84-61-7	ND	ND	ND	ND	1000
Di-n-pentyl phthalate (DPENP/DnPP)	131-18-0	ND	ND	ND	ND	1000
Conclusion		PASS	PASS	PASS	PASS	

Note:

mg/kg (Milligrams per kilogram) = 0.0001 % m/m (Percent by mass)

LT = Less than

ND = Not detected (Reporting Limit = 150 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

Remark:

The specification is quoted from client's requirement.

HANGZHOU ASIAINSPECTION TESTING TECHNOLOGY CO., LTD ♦ Email: Labtesting@asiainspection.com ♦ Tel: (86) 571-8999 7158
 ♦ 5/F A2 Building ♦ No. 1213 Huoju South Road ♦ Puyan Street ♦ Binjiang District ♦ Hangzhou ♦ China 检验检测专用章



The test result(s) and conclusion(s) in this report relate to the sample(s) tested as described herein.

This test report may not be reproduced in whole or in part, without written approval of Hangzhou Asiainspection Testing Technology Co., Ltd



DETAILED RESULTS:

19 CFR 134.11, Country of Origin

Specimen No.	9	
Test	Observation	Conclusion
Country of Origin	Present on label	PASS

Specimen No.	10	
Test	Observation	Conclusion
Country of Origin	Present on label	PASS

Uniform Packaging and Labeling Regulation

Specimen No.	9	
Test	Observation	Conclusion
Declaration of Identity	The packaging contains the declaration of identity	PASS
Declaration of Responsibility	The packaging contains the declaration of responsibility	PASS

Specimen No.	10	
Test	Observation	Conclusion
Declaration of Identity	The packaging contains the declaration of identity	PASS
Declaration of Responsibility	The packaging contains the declaration of responsibility	PASS





DETAILED RESULTS:

Marking of Imported Goods Order, (C.R.C., c.535), Country of Origin

Specimen No.	9	
Section	Requirement	Conclusion
2	Present on label	PASS

Specimen No.	10	
Section	Requirement	Conclusion
2	Present on label	PASS

Charter of French Language, (R.S.Q., c.C-11), Province of Quebec Labeling

Specimen No.	9	
Clause	Test	Conclusion
c.C-11	French Labeling	PASS

Specimen No.	10	
Clause	Test	Conclusion
c.C-11	French Labeling	PASS

Consumer Packaging and Labeling Act (R.S., 1985, c. C-38)

Specimen No.	9	
Section	Requirement	Conclusion
10	Place of Manufacture	PASS

Specimen No.	10	
Section	Requirement	Conclusion
10	Place of Manufacture	PASS





DETAILED RESULTS:

Color Fastness to Crocking

Test Method: AATCC 8-2016

Specimen No.	9-Grey fabric	10-Black fabric	9-Tape	Client's requirement (Grade)
Items	Result (Grade)	Result (Grade)	Result (Grade)	
Dry staining	4.5	4.5	4.0	Min. 4.0
Wet staining	4.5	4.5	4.5	Min. 2.5
Conclusion	PASS	PASS	PASS	-

Specimen No.	10-Tape	Client's requirement (Grade)
Items	Result (Grade)	
Dry staining	4.0	Min. 4.0
Wet staining	4.5	Min. 2.5
Conclusion	PASS	-

Remark: Grey Scale rating is based on the 5-step scale of 1 to 5, where 1 is bad and 5 is good.



**DETAILED RESULTS:****Color Fastness to Water**

Test Method: AATCC 107-2013

Specimen No.	9-Grey fabric	10-Black fabric	9-Tape	Client's requirement (Grade)
Items	Result (Grade)	Result (Grade)	Result (Grade)	
Change in shade	4.5	4.5	4.5	Min. 4.0
Staining on multi-fiber stripe				
-Acetate	4.5	4.5	4.0	Min. 3.5
-Cotton	4.5	4.5	4.0	Min. 3.5
-Nylon	4.5	4.5	4.0	Min. 3.5
-Polyester	4.5	4.5	4.5	Min. 3.5
-Acrylic	4.5	4.5	4.5	Min. 3.5
-Wool	4.5	4.5	4.0	Min. 3.5
Conclusion	PASS	PASS	PASS	-

Specimen No.	10-Tape	Client's requirement (Grade)
Items	Result (Grade)	
Change in shade	4.5	Min. 4.0
Staining on multi-fiber stripe		
-Acetate	4.0	Min. 3.5
-Cotton	4.0	Min. 3.5
-Nylon	4.0	Min. 3.5
-Polyester	4.5	Min. 3.5
-Acrylic	4.5	Min. 3.5
-Wool	4.0	Min. 3.5
Conclusion	PASS	-

Remark: Grey scale rating is based on the 5-step of 1 to 5, where 1 is bad and 5 is good.



**DETAILED RESULTS:****Color Fastness to Light**

Test Method: AATCC 16.3-2014; Option 3; Xenon Arc Lamp.

Specimen No.	9-Grey fabric	10-Black fabric	Client's requirement (Grade)
Items	Result (Grade)	Result (Grade)	
After 20 AFU Change in shade	4.0	4.5	Min. 4.0
Conclusion	PASS	PASS	-

Remarks: Grey scale rating is based on the 5-step of 1 to 5, where 1 is bad and 5 is good.



**DETAILED RESULTS:****Dimensions**

Test Method: IHTM, Standard Measure;

Specimen No.	9	Client's requirement
Items	Result (inch)	
Diameter	8 ³ / ₄	N/A
Height	23 ⁷ / ₈	
Conclusion	Information only	-

Specimen No.	10	Client's requirement
Items	Result (inch)	
Diameter	8 ³ / ₄	N/A
Height	23 ⁷ / ₈	
Conclusion	Information only	-



**DETAILED RESULTS:****The capacity in liters for bag**

Test Method: IHTM, Standard Measure;

Specimen No.	9	Client's requirement
Items	Result (liter)	
Capacity	20.9	N/A
Conclusion	Information only	-

Specimen No.	10	Client's requirement
Items	Result (liter)	
Capacity	20.9	N/A
Conclusion	Information only	-





DETAILED RESULTS:

Article Weight

Test Method: IHTM 010

Specimen No.	9	10	Client's requirement
Items	Result	Result	
(g/piece)	380	381	N/A
Conclusion	Information only	Information only	-

Defects

Test Method: ASTM D3990 – 12(2016); Visual Examination

Specimen No.	9	10	Requirement
Item	Result	Result	
Observation	No major defect	No major defect	Visual examination to verify noticeable defects (such as missing components, obvious knitting /weaving defects, improper functioning component).
Conclusion	PASS	PASS	-





DETAILED RESULTS:

Workmanship

Test Method: IHTM; Visual Examination

Specimen No.	9	10	Requirement
Item	Result	Result	
Observation	No major poor workmanship	No major poor workmanship	<p>Visual examination to verify noticeable poor Workmanship (such as:</p> <p>Poor sewing: Broken seam Missing stitches or Skipped / Uneven /wave stitches or stitched holes on visible area. Insecure back stitches / Uneven stitch tension / Needle chewing Misaligned seam.</p> <p>Poor riveting metal eyelet or other metal parts</p> <p>Dirty / Glue/ Scratch / Wrinkle / Pen Mark / Oil Stain / Water Stain</p> <p>The inside hiding thread expose.</p> <p>Poor electro-plating or spraying on handle metal plate Obvious Scratched mark on extendable handle or metal plate</p> <p>Fabric , webbing band or strap getting discoloration</p>
Conclusion	PASS	PASS	-



**DETAILED RESULTS:****SOR/2016-194 and Method F01 Flammability of Textile Products**

Test Method: CAN/CGSB-4.2 No.27.5-2008

Specimen No.	9-Grey fabric				Face Length
Preliminary Tests	<u>Fabric Surface</u>	Smooth	<u>Test Specimen Direction</u>		
Items	Result				Client's requirement
	<u>As Received</u>		<u>After Dry-cleaning and Laundering*</u>		
	<u>Flame Spread (sec.)</u>	<u>Burn Code</u>	<u>Flame Spread (sec.)</u>	<u>Burn Code</u>	
(1)	-	DNI	-	DNI	>3.5s
(2)	-	DNI	-	DNI	
(3)	-	DNI	-	DNI	
(4)	-	DNI	-	DNI	
(5)	-	DNI	-	DNI	
(6)	-	DNI	-	DNI	
(7)	-	DNI	-	DNI	
(8)	-	DNI	-	DNI	
(9)	-	DNI	-	DNI	
(10)	-	DNI	-	DNI	
Conclusion	PASS				

* Dry-cleaning / Laundering procedure is according to CAN/CGSB-4.2 No.30.3-94 & CAN/CGSB-4.2 No.58-2004; Machine wash at 50°C and tumble dry on the normal setting.

Burn Code Description:

DNI = Did not ignite;





DETAILED RESULTS:

SOR/2016-194 and Method F01 Flammability of Textile Products

Test Method: CAN/CGSB-4.2 No.27.5-2008

Specimen No.	10-Black fabric				Client's requirement
Preliminary Tests	<u>Fabric Surface</u>	Smooth	<u>Test Specimen Direction</u>	Face Length	
Items	Result				
	<u>As Received</u>		<u>After Dry-cleaning and Laundering*</u>		
	<u>Flame Spread (sec.)</u>	<u>Burn Code</u>	<u>Flame Spread (sec.)</u>	<u>Burn Code</u>	
(1)	-	DNI	-	DNI	>3.5s
(2)	-	DNI	-	DNI	
(3)	-	DNI	-	DNI	
(4)	-	DNI	-	DNI	
(5)	-	DNI	-	DNI	
(6)	-	DNI	-	DNI	
(7)	-	DNI	-	DNI	
(8)	-	DNI	-	DNI	
(9)	-	DNI	-	DNI	
(10)	-	DNI	-	DNI	
Conclusion	PASS				

* Dry-cleaning / Laundering procedure is according to CAN/CGSB-4.2 No.30.3-94 & CAN/CGSB-4.2 No.58-2004; Machine wash at 50°C and tumble dry on the normal setting.

Burn Code Description:

DNI = Did not ignite;





DETAILED RESULTS:

Fabric Weight Per Unit Area

Test Method: ASTM D3776/D3776M-09a(R2013),Option C;

Specimen No.	9-Grey fabric	10-Black fabric	Client's requirement
Items	Result	Result	
(g/m ²)	456	465	N/A
(oz/yd ²)	13.4	13.7	N/A
Conclusion	Information only	Information only	-

Tensile Strength

Test Method: ASTM D5034-09(Reapproved 2013); Instron CRE – 1” Grab

Specimen No.	9-Grey fabric	10-Black fabric	Client's requirement (lbf)
Items	Result (lbf)	Result (lbf)	
Length	135.7	145.1	Min. 25
Width	117.9	127.9	Min. 25
Conclusion	PASS	PASS	-





DETAILED RESULTS:

Tearing Strength

Test Method: ASTM D1424-09(R2013) Elmendorf

Specimen No.	9-Grey fabric	10-Black fabric	Client's requirement (lbf)
Items	Result (lbf)	Result (lbf)	
Length yarns torn	2.9	4.0	Min. 1.5
Width yarns torn	2.6	3.2	Min. 1.5
Conclusion	PASS	PASS	-

Note: Length test – test in which the Length yarns are torn.

Width test – test in which the Width yarns are torn.





DETAILED RESULTS:

Abrasion Resistance

Test Method: ASTM D4966-12^{E1}, Option 1; Martindale Wear & Abrasion Tester; 12kPa Pressure

Specimen No.	9-Grey fabric	10-Black fabric	Client's requirement (rubs)
Items	Result (rubs)	Result (rubs)	
End point	>10000	>10000	10000
Conclusion	PASS	PASS	-

Remarks: Grey Scale Rating is based on the 5-step scale of 1 to 5, where 1 is bad and 5 is good.

Pilling Resistance

Test Method: ASTM D3512/D3512M-16; After 30 min. tumbling in Random tumble Pilling Tester

Specimen No.	9-Grey fabric	10-Black fabric	Client's requirement
Items	Result	Result	
As received Rating	4.5	4.5	Min. 3.5
Conclusion	PASS	PASS	-

Remarks: Pilling Rating

- 5 No pilling
- 4 Slight pilling
- 3 Moderate pilling
- 2 Severe pilling
- 1 Very severe pilling





DETAILED RESULTS:

Zipper Strength

Test Method: ASTM D2061-07(R2013); type: LM

Specimen No.	9	
Items	Result	Client's requirement
Chain Crosswise Strength Test (lbf)	227.1(Elements pull off)	Min. 175
Resistance to Pull-Off Slider Pull (lbf)	98.6(Puller pull out)	Min.35
Resistance to Twist of Pull and Slider Test Clockwise (lb. inch) Counter-Clockwise (lb. inch)	>6.0 >6.0	Min.4
Conclusion	PASS	

Zipper Operability

Test Method: ASTM D2062-03(R2014)

Specimen No.	9	
Items	Result	Client's requirement
Chain opening (lbf)	1.8	Max. 2
Chain closing (lbf)	1.6	Max. 2
Conclusion	PASS	

Remark: It is noted that a specific sampling plan is laid down per ASTM D2061-07(R2013) & ASTM D2062-03(R2014). The above results for Zipper Strength & Zipper Operability are drawn on the 8 of tested specimens, based on the request from the applicant.





DETAILED RESULTS:

Zipper Strength

Test Method: ASTM D2061-07(R2013); type: LM

Specimen No.	10	
Items	Result	Client's requirement
Chain Crosswise Strength Test (lbf)	227.1(Elements pull off)	Min. 175
Resistance to Pull-Off Slider Pull (lbf)	98.6(Puller pull out)	Min.35
Resistance to Twist of Pull and Slider Test Clockwise (lb. inch) Counter-Clockwise (lb. inch)	>6.0 >6.0	Min.4
Conclusion	PASS	

Zipper Operability

Test Method: ASTM D2062-03(R2014)

Specimen No.	10	
Items	Result	Client's requirement
Chain opening (lbf)	1.8	Max. 2
Chain closing (lbf)	1.6	Max. 2
Conclusion	PASS	

Remark: It is noted that a specific sampling plan is laid down per ASTM D2061-07(R2013) & ASTM D2062-03(R2014). The above results for Zipper Strength & Zipper Operability are drawn on the 8 of tested specimens, based on the request from the applicant.





DETAILED RESULTS:

Water Repellency-Spray Test

Test Method: AATCC 22-2014; Spray Test – Tested under controlled condition, water temperature: 27±1°C

Specimen No.	9-Shell			Client's requirement
Items	Result			
	Specimen 1#	Specimen 2#	Specimen 3#	
As received Rating	95	95	95	Min. 90
Conclusion	PASS			-

Specimen No.	10-Shell			Client's requirement
Items	Result			
	Specimen 1#	Specimen 2#	Specimen 3#	
As received Rating	90	90	90	Min. 90
Conclusion	PASS			-

- Remarks: Spray Rating
- 100 No sticking or wetting of specimen face
 - 90 Slight random sticking or wetting of specimen face
 - 80 Wetting of specimen face at spray points
 - 70 Partial wetting of the specimen face beyond the spray points
 - 50 Complete wetting of the entire specimen face beyond the spray points
 - 0 Complete wetting of the entire face of the specimen





DETAILED RESULTS:

Water Resistance –Rain Test

Test Method: AATCC 35-2013; Rain Test-2ft head Pressure; 2-min impact

Specimen No.	9-Shell				Client's requirement
Items	Result				
	Specimen 1#	Specimen 2#	Specimen 3#	Average	
As received Weight of blotter gained (g)	0.0	0.0	0.0	0.0	Max 1.0g
Conclusion	PASS				-

Specimen No.	10-Shell				Client's requirement
Items	Result				
	Specimen 1#	Specimen 2#	Specimen 3#	Average	
As received Weight of blotter gained (g)	0.0	0.0	0.0	0.0	Max 1.0g
Conclusion	PASS				-



**DETAILED RESULTS:****Fiber Content**

Test Method: AATCC 20-2013/AATCC 20A-2014 & Analysis was performed by Beilstein Test.; based on moisture regain weight

Specimen No.	11- Coating of fabric	12- Coating of fabric	Client's requirement
Items	Result	Result	
The sample contains	Polyvinyl chloride	Polyvinyl chloride	N/A
Conclusion	Information only	Information only	-

Specimen No.	11- Base fabric	12-Base fabric	Client's requirement (%)
Items	Result (%)	Result (%)	
Polyester	100	100	N/A
Conclusion	Information only	Information only	-

Based on total weight

Specimen No.	11	12	Client's requirement (%)
Items	Result (%)	Result (%)	
Coating (Contains Polyvinyl chloride)	89.6	90.0	N/A
Polyester	10.4	10.0	N/A
Conclusion	Information only	Information only	-

Note: Based on ASTM D1909-13, Moisture regain of Polyvinyl chloride: 0.0%, Polyester: 0.4%





DETAILED RESULTS:

Client's Requirement for Static Load Test

Test Item	Test Method	Requirement	Conclusion
Static Load test	Place the test load on the bag with 50lb for 2 hours.	No damage	PASS





SPECIMEN DESCRIPTION:

Specimen No.	Specimen Description	Location
1	Grey coated grey textile	Main body (grey style)
2	Black coating	Zipper head (grey style)
3	Silver metal	Zipper head (grey style)
4	Black plastic	Zipper puller (grey style)
5	Black plastic	Plastic buckle(grey style)
6	Black plastic	Zipper teeth(grey style)
7	Black plastic	Lobster clasp(grey style)
8	Black coated black textile	Main body(black style)
9	20L dry bag with 1.5" shoulder strap and heat sealed front pocket	Finished product(Grey style)
10	20L dry bag with 1.5" shoulder strap and heat sealed front pocket	Finished product(Black style)
11	Grey coated grey textile	Raw material
12	Black coated black textile	Raw material





SAMPLE PHOTO:





SAMPLE PHOTO:





SAMPLE PHOTO:



-End Report-

