TEST REPORT

19-Dec-17

Trelleborg Coated Systems
PO Box 326
30 Lenox Street
New Haven, CT 06513
(203) 468-0342
(203) 469-7385 Fax

Lifesaving Systems, Corp.

Style 1627
Cloth, Nylon, Polyurethane Coated (One Side)
TSO-C13f
Red Orange

Packing Slip #:
PO #:
Yards:
Lot #: 33510-1
Roll(s):
Mfg. Date: 14-Jul-17

Breakaway (RF) ASTM D751 (70°F) REQUIREMENT: 45 lbs/in, min

33510-1	91.9 Let Go	85.1 Let Go	81.2 Let Go	95.0 Let Go	90.9 Let Go	*Avg:* 88.8

Lot Average: **88.8**

Breakaway (RF) ASTM D751 (140°F) REQUIREMENT: 30 lbs/in, min

33510-1	101.8 Let G	99.1 Let Go	95.0 Let Go	98.3 Let Go	96.5 Let Go	*Avg:* 98.1

Lot Average: **98.1**

Breakaway (RF) ASTM D751 (70°F, After Aging) REQUIREMENT: 90% of Original Value, min

33510-1	94.0 Let Go	108.8 Let Go	97.3 Let Go	95.4 Let Go	103.6 Let Go	*Avg:* 99.8

% of Original Value: 112.4%

Lot Average: **Pass**

Breakaway (RF) ASTM D751 (140°F, After Aging) REQUIREMENT: 90% of Original Value, min

33510-1	80.5 Let Go	100.0 Let Go	91.1 Let Go	90.2 Let Go	95.4 Let Go	*Avg:* 91.4

% of Original Value: 93.2%

Lot Average: **Pass**

Tear Test (Trap) FS191A-5136 REQUIREMENT: 10 lbs, min WARP

33510-1	17.0	16.6	17.0	16.6	15.9	*Avg:* 16.6

Lot Average: **16.6**

Tear Test (Trap) FS191A-5136 REQUIREMENT: 8 lbs, min FILL

33510-1	14.2	13.7	12.3	13.8	13.0	*Avg:* 13.4

Lot Average: **13.4**

Tear Test (Trap) FS191A-5136 (After Aging) REQUIREMENT: 90% of Original Value, min WARP

33510-1	16.5	16.5	15.8	15.2	15.6	*Avg:* 15.9

% of Original Value: 95.8%

Lot Average: **Pass**

Tear Test (Trap) FS191A-5136 (After Aging) REQUIREMENT: 90% of Original Value, min FILL

33510-1	13.2	12.9	13.0	12.0	13.1	*Avg:* 12.8

% of Original Value: 95.5%

Lot Average: **Pass**

Tensile (Grab) FS191A-5100 REQUIREMENT: 210 lbs, min WARP

33510-1	373	384	337	353	371	*Avg:* 363.6

Lot Average: **363.6**

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Mfg. Date: 14-Jul-17

Tensile (Grab) FS191A-5100 REQUIREMENT: 180 lbs, min FILL

33510-1	305	301	294	298	289	*Avg:* 297.4	
						Lot Average:	**297.4**

Tensile (Grab) FS191A-5100 (After Aging) REQUIREMENT: 90% of Original Value, min WARP

33510-1	375	388	372	373	382	*Avg:* 378	
						% of Original Value: 104.0%	
						Lot Average:	**Pass**

Tensile (Grab) FS191A-5100 (After Aging) REQUIREMENT: 90% of Original Value, min FILL

33510-1	298	302	296	302	303	*Avg:* 300.2	
						% of Original Value: 100.9%	
						Lot Average:	**Pass**

Coat Adhesion (RF) FS191A-5970 REQUIREMENT: 10 lbs/in, min

33510-1	32.9	36.6	35.9	34.4	31.5	*Avg:* 34.3	
						Lot Average:	**34.3**

Coat Adhesion (RF) (After Aging) FS191A-5970 REQUIREMENT: 90% of Original Value, min

33510-1	35.9	38.0	37.7	38.4	31.5	*Avg:* 36.3	
						% of Original Value: 106.0%	
						Lot Average:	**Pass**

Permeability (Helium) ASTM D1434 REQUIREMENT: <5L/m2 in 24hr

33510-1	1.10346					*Avg:* 1.10346	
						Lot Average:	**1.10346**

Permeability (Helium) (After Aging) ASTM D1434 REQUIREMENT: <5L/m2 in 24hr

33510-1	3.78064					*Avg:* 3.78064	
						Lot Average:	**3.78064**

Seam Peel (1") FS191A-5960 REQUIREMENT: lbs/in

33510-1	26.5	26.8	49.8	42.0	47.6	*Avg:* 38.5	
						Lot Average:	**38.5**

Seam Peel (1") (After Aging) FS191A-5960 REQUIREMENT: 90% of Original Value, min

33510-1	53.7	37.9	40.6	35.4	35.9	*Avg:* 40.7	
						% of Original Value: 105.6%	
						Lot Average:	**Pass**

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Roll(s):
Mfg. Date: 14-Jul-17

Seam Shear (RF) 3/4" Overlap FS191A-5960 REQUIREMENT: lbs/in

33510-1	526	556	497	*Avg:* 526.3

Lot Average: **526.3**

Seam Shear (RF) 3/4" Overlap (After Aging) FS191A-5960 REQUIREMENT: 90% of Original Value, min

33510-1	522	515	526	*Avg:* 521

% of Original Value: 99.0%

Lot Average: **Pass**

Notes:

CERTIFICATION

Attention: Quality Control

This is to certify that the above indicated material has been tested and conforms to the requirements of Trelleborg Style # 1627 and TSO-C13f, Appendix 1, Section 3.1.4 through 3.1.5.2.

Monica Whelan

20-Dec-17

Whelan, Monica
Sr. Quality Engineer

LifeSaving Systems 1627 Recertification Data to TSO-C13F

						Sample Results										
Source	**TSO Section**	**Sub-**	**Method**	**Testing**	**Test**	**Test 1**	**Test**	**Test**	**Test**	**Test**	**Average**	**Stan**	**N**	**Required**	**% of Original**	**Pass/Fail**
TSO-C13F Appendix 1	3. Materials	3.1.5.2	ASTM D751 66-71	Breakaway 70°F	Seam Strength Film/Film	91.9	85.1	81.2	95	90.8	88.8	5.6	5	45 lb/in (min)	N/A	PASS
					Seam Strength Film/10 mil PU/Film **FOR INFORMATION ONLY**	93.8	93.9	86.2	85.9	89.5	89.9	3.9	5	45 lb/in (min)	N/A	PASS
		3.1.5.2	ASTM D751 66-71	Breakaway 140°F	Seam Strength Film/Film	101.8	99.1	95	98.3	96.5	98.1	2.6	5	30 lb/in (min)	N/A	PASS
					Seam Strength Film/10 mil PU/Film **FOR INFORMATION ONLY**	81	85	91	85	95	87.4	5.5	5	30 lb/in (min)	N/A	PASS
		3.1.4.1	FS191A-5100		Grab Tensile - Warp	373	384	337	353	371	363.6	18.6	5	210 lbs (min)	N/A	PASS
					Grab Tensile - Fill	305	301	294	298	289	297.4	6.2	5	180 lbs (min)	N/A	PASS
		3.1.4.1	FS191A-5136		Trap Tear Strength - Warp	17.0	16.6	17.0	16.6	15.9	16.6	0.4	5	10lbs (min)	N/A	PASS
					Trap Tear Strength - Fill	14.2	13.7	12.3	13.8	13.0	13.4	0.8	5	8 lbs (min)	N/A	PASS
		3.1.4.2	FS191A-5970	RF Weld	Coating Adhesion Film/Film	32.9	36.6	35.9	34.4	31.5	34.3	2.1	5	10 lbs/in (min)	N/A	PASS
					Coating Adhesion Film/10 mil PU/Film **FOR INFORMATION ONLY**	29.4	30.9	33.0	31.4	31.2	31.2	1.3	5	10 lbs/in (min)	N/A	PASS
		3.1.4.3	ASTM D1434	Helium	Permeability	1.10346					PASS	N/A	1	<5L/m^2*24hr	N/A	PASS
			FS191A-5960	RF Weld	1" Seam Peel Film/Film	26.5	26.8	49.8	42.0	47.6	38.5	11.2	5	lbs/in	N/A	PASS
					1" Seam Peel Film/10 mil PU/Film **FOR INFORMATION ONLY**	28.9	28.8	31.6	32.1	37.7	31.8	3.6	5	lbs/in	N/A	PASS
			FS191A-5960	2" RF Weld	Seam Shear 3/4" Overlap Film/Film	526.0	556.0	497.0			526.3	29.5	3	lbs/in	N/A	PASS
					Seam Shear 3/4" Overlap Film/10 mil PU/Film **FOR INFORMATION ONLY**	520.0	547.0	504.0			523.7	21.7	3	lbs/in	N/A	PASS
	3. Materials After Accelerated Aging 158°F/168 hrs per FS191A-5850	3.1.5.2	ASTM D751 66-71	Breakaway 70°F	Seam Strength Film/Film	94	108.8	97.3	95.4	103.6	99.8	6.2	5	90% of original (min)	112.4%	PASS
					Seam Strength Film/10 mil PU/Film **FOR INFORMATION ONLY**	91.6	98.4	97.2	97.4	91.3	95.2	3.4	5	90% of original (min)	105.9%	PASS
		3.1.5.2	ASTM D751 66-71	Breakaway 140°F	Seam Strength Film/Film	80.5	100	91.1	90.2	95.4	91.4	7.3	5	90% of original (min)	93.2%	PASS
					Seam Strength Film/10 mil PU/Film **FOR INFORMATION ONLY**	105.8	97.9	111.6	113.9	91	104.0	9.6	5	90% of original (min)	119.0%	PASS
		3.1.4.1	FS191A-5100		Grab Tensile - Warp	375	388	372	373	382	378.0	6.8	5	90% of original (min)	104.0%	PASS
					Grab Tensile - Fill	298	302	296	302	303	300.2	3.0	5	90% of original (min)	100.9%	PASS
		3.1.4.1	FS191A-5136		Trap Tear Strength - Warp	16.5	16.5	15.8	15.2	15.6	15.9	0.6	5	90% of original (min)	95.8%	PASS
					Trap Tear Strength - Fill	13.2	12.9	13.0	12.0	13.1	12.8	0.5	5	90% of original (min)	95.5%	PASS
		3.1.4.2	FS191A-5970	RF Weld	Coating Adhesion Film/Film	35.9	38.0	37.7	38.4	31.5	36.3	2.8	5	90% of original (min)	106.0%	PASS
					Coating Adhesion Film/10 mil PU/Film **FOR INFORMATION ONLY**	58.3	43.5	55.5	87.0	57.9	60.4	16.0	5	90% of original (min)	193.8%	PASS
		3.1.4.3	ASTM D1434	Helium	Permeability	3.78064					PASS	N/A	1	<5L/m^2*24hr	N/A	PASS
			FS191A-5960	RF Weld	1" Seam Peel Film/Film	53.7	37.9	40.6	35.4	35.9	40.7	7.5	5	90% of original (min)	105.6%	PASS
					1" Seam Peel Film/10 mil PU/Film **FOR INFORMATION ONLY**	41.7	39.0	32.2	29.8	31.7	34.9	5.2	5	90% of original (min)	109.6%	PASS
			FS191A-5960	2" RF Weld	Seam Shear 3/4" Overlap Film/Film	522.0	515.0	526.0			521.0	5.6	3	90% of original (min)	99.0%	PASS
					Seam Shear 3/4" Overlap Film/10 mil PU/Film **FOR INFORMATION ONLY**	527.0	514.0	492.0			511.0	17.7	3	90% of original (min)	97.6%	PASS