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**Laboratory Report No. 29516**  
 21-Mar-16

Page 1 of 3

Mr. Ian Watt  
 Alpaca Coalition of America  
 1540 San Bernardo Creek Rd.  
 Morro Bay, CA 93442

**Cc:** n/a

**PO:** n/a

**Item:** Four (4) swatches of leather


**Identification:** Alpaca Leather


**Purpose:** Measuring the Thickness of Leather, ASTM D1814-70 R2015  
 Elongation of Leather, ASTM D2211-00 R2015  
 Tensile Strength of Leather, ASTM D2209-00 R2015  
 Abrasion Resistance of Leather, ASTM D7255-15  
 Stretch and Set, CFFA 15-2013  
 Softness of Leather, ISO 17235 (IUP 36)

Test	Unit of Measure	Specimen Results					Average
<b><u>Measuring the Thickness of Leather: oz.</u></b>							
<b><u>ASTM D1814-70 R2015</u></b>							
		2.7	2.9	2.0	3.5	2.5	
		2.3	2.3	1.8	3.3	2.3	2.6
<b><u>Tensile Strength of Leather: lbf</u></b>							
<b><u>ASTM D2209-00 R2015</u></b>							
Red leather							
	<u>Parallel to Backbone</u>	29.98	35.25	40.92	30.96	27.08	32.84
	<u>Perpendicular to Backbone</u>	21.15	25.36	25.09	31.12	20.56	24.66
<b><u>Elongation of Leather: %</u></b>							
<b><u>ASTM D2211-00 R2015</u></b>							
Red leather							
	<u>Parallel to Backbone</u>	20.3	29.2	35.2	29.2	35.6	29.9
	<u>Perpendicular to Backbone</u>	51.4	36.0	44.4	44.6	30.5	41.4

Test	Unit of Measure	Specimen Results						
<b>Softness of Leather</b>								
<b>ISO 17235 (IUP 36)</b>								
<b>BLC Softness Gauge</b>								
Ring size: 25mm								
	Area	1	2	3	4	5		
	Thickness, mm	1.2	1.7	1.7	1.8	1.3	1.5	
	Softness, mm	4.2	3.1	2.5	3.3	3.2	3.3	
Notes:								
Larger number of "softness (mm)" indicates softer leather.								
It appears that two sides of the leather are from the edge of the hide. We have omitted the area that contained what appeared to be glue left over from a sticker. The range of softness results were greater than expected but further examination of the sample organoleptically indicated that there is significant difference between different areas of the sample even though it is a small area.								
Testing performed by University of Cincinnati, Cincinnati, OH. Report Number 25693 dated March 11, 2016.								
<b>Abrasion Resistance of Leather</b>								
<b>ASTM D7255-15</b>								
<b>Taber Method</b>								
<b>H-18 wheels, 500 g. wt.</b>								
	Cycles to loss of gloss		14	16	26		19	
	Cycles to first scuff		50	50	50		50	
	Cycles to complete scuff		3,000	3,000	3,000		3,000	
	Cycles to hole		5,000+	5,000+	5,000+		5,000+	
Note: The specimen exhibited a considerable loss of color around 50 cycles. There was an almost complete loss of color around 3,000 cycles.								
First Scuff = initial loss of pattern or grain								
Complete Scuff = Complete loss of pattern or grain								
5,000 + = Taber specimens reached 5,000 cycles without a hole developing through the entire substrate. Testing was discounted.								
<b>Stretch and Set</b>								
<b>CFFA 15-2013. Modified</b>								
27 pound load; 5 minute duration								
		<u>Blue</u>	<u>Blue</u>	<u>Red</u>				
	<u>Parallel to backbone</u>							
	% Stretch	115	113	110			112.5	
	% Set after 5 minutes	110	110	106			109.0	
	<u>Perpendicular to backbone</u>							
	% Stretch	110	110	106			109.0	
	% Set after 5 minutes	108	113	115			111.8	
Modified to test leather.								

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Signed:   
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Signed:   
Suzanne Piispanen, COO