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silicone leather automotive leather standard

1.1 Purpose:

Establish silicone rubber material standards, stabilize the quality output of raw materials, and ensure the uniqueness, standardization and Accuracy, in order to formulate the "Test Standard-Silicone Leather Standard".

1.2 Scope of application:

Applicable to all silicone leathers in use within the company.

1.3 Reference standards:

GB/T 4689.20 Determination of adhesion fastness of leather coating GB/T17928

Determination of pinhole tear strength of leather QB/T 2537 Leather color fastness test

Reciprocating friction color fastness

QB/T 2707 Preparation and conditioning of leather physical and mechanical test specimens

QB/T 2710 Physical and mechanical tests on leather. Determination of tensile strength and elongation. QB/T 2711 Physical and mechanical tests on leather. Determination of tear force: double-sided tear

QB/T 2714 Physical and mechanical tests for leather - Determination of folding fastness QB/T 2715 Physical and mechanical tests for leather - Determination of apparent density QB/T 2725 Determination of leather odor QB/T 2726 Physical and mechanical tests for leather - Determination of abrasion resistance QB/T 2727-2017 Leather color fastness test - Color fastness to artificial light: Xenon arc test QB/T 2728-2005 Physical and mechanical tests for leather - Determination of atomization performance QB/T2729 Physical and mechanical tests for leather - Determination of horizontal burning performance

QB/T 4874 Test methods for artificial leather and synthetic leather - Determination of fatigue strength of seams QB/T 5248 Test method for resistance of leather to detergents QB/T5249 Leather chemical tests - Determination of total volatile organic matter QB/T 5250-2018 Leather color fastness test - Color change under accelerated aging conditions QB/T5253.1-2018 Physical and mechanical tests on leather - Determination of soiling properties - Part 1: Martindale rubbing method

2. Inspection standards:

Inspection items	Inspection standard			Inspection methods	Inspection Equipment	National/ Light Industry Standards
	Leather for seat cushions	steering wheel leather	Other decorative leather			
Apparent density/ (g/cm³) Wide	Written agreement between the two parties			Tested according to QB/T 2715 standard		0.6-0.8
format Written agreement between both parties				Use a tape measure to record and compare to the acceptance criteria	Tape measure 1.37M	
Thickness standard agreed by both parties in writing				Use a thickness gauge to measure the leather at three points along the width of the leather: left, middle and right The measurement results are compared with the acceptance criteria as average values.	percentage Table thickness Meter	

Appearance	1. Clear patterns, consistent depth and color 2. Black spots and leather peeling (poor adhesion of air bubbles and shells) Pinholes, marks, wrinkles, oil stains and other defects 3. The softness and elasticity of the hand feel are consistent with the sample		Under sufficient light, operators rely on visual observation. Discover surface flaws and color differences	Visual /hand Feeling	
Color fastness to dry rubbing (times)	Sweat resistance: ÿ (200 Level 4/5	(300 times) 4/5	(200 times) 4/5	1. Cut four strips of not less than 140mm*50mm in pairs. Perpendicular specimens for dry and wet friction Rub test 2. Abrasion color fastness test device, the friction head consists of A cylindrical structure with a diameter of (16±0.1) mm The downward pressure is (9±0.2)N. Make a (100±5) mm cut along the direction of the specimen. Linear reciprocating motion 3. White cotton cloth (cotton friction cloth), conforming to GB/T33729 regulations, cut into about 50mm*50mm Block, suitable for the friction head specified in 2 4. Wet rubbing: Weigh the conditioned cotton rubbing cloth (2) Heavy, and then completely immersed in water, for a period of time Take it out, squeeze it out gently to squeeze out the water, and weigh it again before use. The water absorption rate of the cotton friction cloth reaches (100±5)%. It is fixed to the friction head (2) and measured according to the above provisions. After the friction is finished, remove the cotton friction cloth and Dry under the piece 5. Grey card for staining assessment, in accordance with GB/T251 1.	Wear-resistant Color rubbing Fastness test machine	100/200 /100
	Wet wiping: ÿ (500 times) Level 4/5 Dry erase: ÿ (5000 times) Level 4/5 Ethanol: ÿ (10 times) 4/5 level Neutral soap solution: ÿ (100 times) Level 4/5				Wet wipe: ÿ ÿ500 times) dry Rub: ÿ ÿ2000 Second) Alcohol: ÿ (5 Next) Sexual soap: ÿÿ50 Second-rate)
Odor	ÿ3 Noticeable odor, but not offensive		Put the leather into a clean, odorless glass jar and cover it with a lid. 2. Place the glass jar containing the leather in a temperature of 65 (±3)°C. In the oven for 1 hour, take out 3. Remove the lid and fan with your hand with your nose 15cm away from the mouth of the jar. Automatically guide the air from the test tank to the nose and inhale slowly	nose smell	ÿ3
Color Migration	ÿ Grade 4		Temperature 50±2ÿ, press with 5KG weight for 18 hours Make a judgment	constant temperature Constant humidity box	
Joint fatigue strength/ mm	Pinhole elongation value ÿ2		Add the sewn specimen to the fixture and set the test value 2500 times open the equipment and use a vernier caliper to measure the seam stitching of each group within 10 minutes while maintaining the load. All pinholes are measured and the data are recorded (3-5 Group)	Seam resistance fatigue test	catch ÿ2mm
Anti-cleaning performance/grade	Instant coffee/ketchup/blue or black ballpoint pen/cola/soy sauce/chocolate Gram milk/saturated sodium chloride solution ÿ Level 4			Machine wear Color rubbing Fastness test machine	Grade ÿ4

Heat aging resistant	surface without stickiness, shiny, brittleness and other degradation phenomena			1. Static oven temperature (80±2)ÿ, relative humidity Degree < 10% 2. Put it in the oven for 24 hours, take it out and cool it at room temperature. After cooling for (120±15) min, observe the surface	Static Oven	Grade ÿ4
High temperature oven 120ÿ, 168H	No obvious cracks on the surface Put it into 120ÿ constant temperature oven for 168H					ÿ Grade 4
Resistance to moisture and heat aging	Simulate the automobile's resistance to warm and humid climates, and aging through heat and humidity cycle treatment (i.e. hydrolysis resistance). Compared with the original sample, appearance, color, shrinkage, flexibility, etc. ÿ 4 levels			1. Temperature 40ÿ, humidity 90%, 4 hours 2. Heat to 120ÿ for 2 hours and turn off humidity control 3. Temperature 120ÿ, humidity 90%, 4 hours 4. Cool to 40ÿ, humidity 90%, 2 hours, temperature When the temperature is less than 90ÿ, turn on the humidity control. 5. Loop 20 times	constant temperature Constant humidity box	Grade ÿ3
Martindale wear resistance (times)	ÿ200,000 times (three coats)			1. Take samples from different locations of the material to be tested. The cut should be made at least 10cm away from the edge of the material. 2. Cutting diameter (44+1) mm or (38+1) mm Sample. 3. Before testing the sample in standard state, place the sample at a temperature 4 hours in an environment with a temperature of 21±1ÿ and a relative humidity of 65±2% The test can be performed after 10 seconds. 4. Place the sample in the sample holder base. Put a piece of foam gasket on it, and then remove the foam The cotton gasket is fixed with a fixing ring. The specimen holder base is locked. 5. Hold the handles on the tablet with both hands and remove the tablet. Install the blanket and rubbing cloth, 6. Place the sample holder with the installed sample facing downwards. Place it on the friction cloth, take the weight, and make the weight rod pass through The round hole on the plate aligns the groove on the specimen holder with the Standard weight rod. 7. Turn on the power and set the test strip on the control panel to start the test. 8. When the test conditions are reached, the machine will automatically stop or process If the sample is damaged, press Pause to stop the machine. 9. Record the sample Test results,	Martin Dyer Wear-resistant machine	
Folding fastness at room temperature ÿ700000 Second-rate)	No cracks	/	No cracks	1 , Use a chopping knife to cut from the material to be tested 70mmx45mm test pieces are used as test samples, two pieces Parallel to the horizontal direction, two pieces parallel to the vertical direction; 2. Use arrows to indicate the direction of the test piece;		100000 Second-rate

Low temperature folding fastness (-10ÿ, 200000 Second-rate)	No cracks	/	No cracks	3. Adjust the upper fixture to the level; line Align the test piece along the length direction at the center Fold, paying attention to the surface facing inwards; 5. Place the test piece into the upper fixture and clamp it tightly; 6. Fold the test piece in reverse so that the surface of the test piece faces outside; 7. Adjust the appropriate tension and place the test piece in the lower fixture. Clamping; 8. Repeat steps B to G to install other test piece; 9. Set the bending machine to 50,000 times and start bending. Different from 10000/25000/35000/40000 inspections Test piece . Then check every 2000 times. Second, record the extent and type of damage; 10. Perform a final inspection after 200,000 times and record the results. fruit.	Flexibility test machine	-10ÿ Down 20000 Second-rate
Color fastness to light/grade	ÿ4	ÿ4	/	Tested according to QB/T 2727-2017 standard		ÿ4
Anti-adhesion	ÿ Grade 5,			The sample coating is bonded to the coating and placed in a constant temperature of 80 (±2)ÿ and press with a load of 10N, constant temperature Take it out after 3 hours and peel off the bonded sample by hand	constant temperature Oven	ÿ Grade 4
Bursting strength	ÿ1MPa			Place the sample with the coating facing down and clamp it with a ring clamp. Slowly pressurize until the sample is broken. Test results Take the average value of 3 samples as the standard	Muiron Style Break Crack Strength Degree Test Machine inspection	ÿ1MPa

Tensile load ÿNÿ	Longitude ÿ400 Latitude ÿ400			1. More than 100mm away from the edge of the sample along the longitudinal/vertical direction, Cut 3 pieces each in the weft/cross direction. The sample size is length (200 ±2)mmX width (50±1)mm, avoid defects when cutting Spots, marks, stains and other defects. 2. Set the fixture spacing to (100 ± 1) mm and constant Elongation rate: (200±20)mm/min. 3. Sample clamping: The two ends of the sample in the length direction are Do not clamp the two clamps to ensure that the center line of the tension passes through The midpoint of the fixture. And at the initial distance between the fixtures Draw a marking line at the end. 4. The specimen can be clamped under pre-tension or loosely clamped When the specimen is clamped with pre-tension, the elongation The growth rate is not more than 2%. If it cannot be guaranteed, use Loose clamping means clamping without tension. 5. Measurement: Turn on the tester and stretch the specimen until it breaks. Record the maximum force (unit: N) accurately to 0.1N, clamp distance Lÿ at break (single (mm), accurate to 0.1mm.	Double Column Stretch test machine	Seat ÿ 160 Steering wheel ÿ 200 Others ÿ 160
Elongation at break	Warp ÿ10% Weft ÿ15%			Use the tensile testing machine to operate 3 pieces of 200mm*30mm The sample has a marking line spacing of 100 mm and a tensile Speed 200mm/min	Double Column Stretch test machine	
Tearing load N(L/W)	Longitude ÿ40 Latitude ÿ40	Longitude ÿ50 Latitude ÿ50	Longitude ÿ40 Latitude ÿ40	1. Sampling complies with QB/T 2706/QB/T 2707 Certainly 2. The tensile testing machine should meet the following requirements: Range The range is suitable for the object to be measured, and the fixture is (100± 20) mm/min speed to do uniform motion; with memory Device for recording force-distance curve; Minimum width of fixture (50±2)mmÿ 3. Adjust the distance between the clamps of the tensile testing machine. Make the distance between the upper and lower clamps 50mm. 4. Clamp the specimen on the lower fixture of the tensile testing machine One side of the cut is about 20 mm, and the cut side of the sample is folded in half. The other side is clamped in the upper fixture at 180° to ensure that the specimen The long side is parallel to the tensile direction of the tensile testing machine. 5. Start the tensile testing machine until the specimen breaks, and record Record force-distance diagram.	Double Column Stretch test machine	Seat ÿ 40 Steering wheel ÿ 50 Others ÿ 40
Low temperature impact: low temperature -30ÿ, 24H, no obvious cracks on the surface				Put it in -30ÿ high and low temperature impact test box for 24 hours No obvious cracks on the surface	High and Low Wen Chong Hit Test Travel bag	
Flame retardancy (mm/min)	ÿ100			Tested according to QB/T 2729-2005	combustion box	ÿ100

Strip load ÿN/10mm ÿ	ÿ30	ÿ35	ÿ30	1. Sampling standard: The inner wall is a square: 100mm*10mm 2. The tensile machine is operated vertically, with a speed of (100±5) mm/min, and can automatically record the force-distance diagram 3. Dry sample test: Use a clean cloth to dampen the The lotion will bond the surface of the adhesive board and the surface of the leather finish Wipe clean. 4. Apply a thin layer evenly on the surface of the adhesive board. The adhesive was kept at room temperature for 40 minutes and then placed Heat in an oven at (85±3)ÿ for 10 min. 5. Apply a layer of adhesive evenly on the surface of the sample. Then place the sample with the coating facing downwards on the heated The two ends of the adhesive board are 15mm beyond the adhesive board. Then press the weight block on the specimen for 5 minutes. 6. Insert the adhesive board into the support frame, with the test end and Align one end of the support frame and clamp the sample with the sample clamp. Test end and hang it on the tension hook (see Figure 4). 7. Start the tensile machine to test and record the leather Force-distance diagram when the specimen is separated from the coating layer by 30~35mm. 8. Change the direction of the specimen on the support plate and press Repeat the test in 7.1.5 in the opposite direction.	Double Column Stretch test machine	
TABER wear-resistant (H-22, 1000g)	6000 revolutions No obvious damage/peeling of coating	8000 turns No obvious damage/ peeling of coating	2000 coating without obvious damage/peeling	Load the cut specimens into the wear tester and set The specified value is then taken out to observe whether the leather surface is Is there any obvious damage or peeling?	SUBJECT R Resistance Grinding test Machine inspection	Seat ÿ 1000, Steering wheel ÿ2000