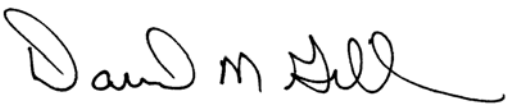
environ®
LABORATORIES LLC
9725 Girard Avenue South
Minneapolis, MN 55431-2621

ENGINEERING REPORT NO. 37997-1

BLOWING DUST TEST

for

AUSTRIALPIN, INC.
14865 20TH AVENUE
P.O. BOX 1257
BLAIRMORE, ALBERTA T0K 0E0
CANADA

PREPARED BY:	 Phillip M. Toftely Test Engineer
APPROVED BY:	 David M. Gillen Vice President

REVISION HISTORY

Revision	Total Number of Pages	Date	Description
--	9	May 14, 2008	Original

PREPARED FOR:	TEST DATES:	
AUSTRIALPIN, INC. 14865 20TH AVENUE P.O. BOX 1257 BLAIRMORE, ALBERTA T0K 0E0 CANADA ATTN: Mr. Aaron Hemphill	**Start:**	5/3/2008
	Completion:	5/4/2008
	ENVIRON TEST NO.:	**37997-1**
	PURCHASE ORDER NO.:	**20080424adh1**
	PURCHASE DATE:	4/24/2008

BLOWING DUST TEST

1.0 ABSTRACT

1.1 Object

Subject three Quick Release Buckles to a Blowing Dust Test in accordance with *MIL-STD-810F*, Method 510.4, Procedure I, as requested in AustriAlpin, Inc. purchase order 20080424adh1, dated April 24, 2008.

1.2 Conclusions

Visual examination of the test units revealed no evidence of external damage or deterioration. The samples opened and closed properly after the exposure. Details and photographs are presented in Section 4.3 of this report.

2.0 UNIT(S) TESTED

Table 1: Units Tested

MANUFACTURER:	AUSTRIALPIN, INC.
DEVICE:	Three (3) Quick Release Buckles
MODEL/PART NO.:	Cobra Safety Click Lock
LOT SIZE:	Three samples

The results of this test apply only to the units identified in this Engineering Report by device identifier and model / part number, or serial number.

3.0 **TEST REQUESTED**

Subject the test units to the blowing dust test specified in *MIL-STD-810F*, Method 510.4, Procedure I:

1. Install the test items in the test chamber in the operational configuration. Orient the test items so as to expose the most critical or vulnerable parts to the dust stream.

2. Adjust the test section temperature to standard ambient conditions and the air velocity to 8.9 m/s (1750 ft/min). Adjust the test section relative humidity to less than 30% and maintain it throughout the test.

3. Adjust the dust feed control for a dust concentration of 10.6 ±7 g/m³ (0.3 ±0.2 g/ft^3).

4. Maintain the conditions of steps 2 and 3 for at least six hours.

5. Stop the dust feed. Reduce the test section air velocity to approximately 1.5 m/s (300 ft/min) and adjust the temperature to +140°F.

6. Maintain the step 5 conditions for one hour following test unit temperature stabilization.

7. Adjust the air velocity to 8.9 m/s (1750 ft/min) and restart the dust feed to maintain a dust concentration of 10.6 ±7 g/m³ (0.3 ±0.2 g/ft^3).

8. Continue the exposure for at least six hours.

9. Allow the test items to return to standard ambient conditions and allow the dust to settle.

10. Remove accumulated dust from the test items by brushing, wiping, or shaking, taking care to avoid introduction of additional dust or disturbing any that may have already entered the test items. Do not remove dust by either air blast or vacuum cleaning.

4.0 INSTRUMENTATION, PROCEDURE, AND RESULTS

4.1 Instrumentation

All instrumentation is calibrated regularly by instruments directly traceable to the National Institute of Standards and Technology, and in accordance with *MIL-I-45208A, ANSI/NCSL Z540-1-1994,* and *ISO/IEC 17025: 1999*.

Table 2: Instrumentation List

Equipment Number	Description	Manufacturer	Model Number	Last Calibration	Due Calibration	Range
200-076	Temperature Controller Recorder	Honeywell	AR52ACD0051	12/14/2007	6/16/2008	0 to +200ºF
200-109	Temperature Controller	Watlow	965	5/22/2007	5/22/2009	-328 to +662ºF
200-110	Temperature Controller	Watlow	965	5/22/2007	5/22/2009	0 to 5 Vdc
200-251	Temperature / Humidity Chart Recorder	White Box Corp.	CT-485-AL	11/28/2007	5/28/2008	50 to 95ºF, 10 to 35ºC, 20 to 90% RH
400-039	Stopwatch	Radio Shack	63-5017	9/4/2007	9/4/2008	0 to 24 hours; .01 sec
504-018	Dust Chamber	Environ	D-5	7/3/2007	7/3/2009	Dust: 0 to 20 g/m³; Air Velocity: 0 to 2200 fpm

4.2 Procedure

The dust used in the test was 140-mesh silica flour, conforming to the requirements of *MIL-STD-810F*. The Certificate of Conformance is on file at Environ Laboratories LLC.

The test units were placed in the dust chamber with two of the samples mated and one sample unbuckled. The temperature was held at 75°F with a relative humidity of 22%. The chamber air velocity was increased to 1750 ft/min (8.9 m/s) and the dust feeder was adjusted to provide a dust concentration of 0.3 g/ft³ (10.6 g/m³). These conditions were maintained for six hours.

The dust feeder was turned off and the air velocity was adjusted to 300 ft/min (1.5 m/s). The chamber temperature was increased to 140°F with a final relative humidity of 12%. These conditions were held overnight to allow the test units to stabilize. The chamber air velocity was then increased to 1750 ft/min (8.9 m/s) and the dust feeder was adjusted to provide a dust concentration of 0.3 g/ft³ (10.6 g/m³). These conditions were maintained for six hours.

The chamber was then returned to ambient conditions and the test units were stabilized. Accumulated dust was removed by brushing with a soft bristle brush.

4.3 Results

Visual examination of the test units revealed no evidence of external damage or deterioration. The buckles operated correctly after the exposure. The units were returned to AustriAlpin, Inc.

Figure 1 herein is the test data sheet. Figure 2 shows the chamber temperature chart. Photograph 1 depicts the test setup. Photograph 2 is a post-test view of the test units.

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SAND AND DUST DATA SHEET

COMPANY: AustriAlpin, Inc.	
DEVICE: Quick Release Buckles	
MODEL NO. Cobra Safety Click Lock	S/N: 3 samples
TEST: **Sand and Dust**	SPEC (Dust) MIL-STD-810F PARA: method 510.4

AMBIENT CONDITIONS

DATE: 5/3/08 TEMPERATURE: 78°F

TIME: 1:30 PM RELATIVE HUMIDITY: 24%

PRESSURE: 29.1 In Hg

PRE-TEST OPERATIONAL	POST-TEST OPERATIONAL
Opened and closed correctly	Opened and closed correctly
	No visible damage

STEP	TIME	TEMP	AIR VEL	DUST DEN	RH	DURATION
1	1:40 PM	75°F	1750 ft/min	0.3 g/ft³	22%	6 hours
2	7:45 PM	140°F	300 ft/min	off	12%	overnight
3	5/4/08 6:30 AM	140°F	1750 ft/min	0.3 g/ft³	12%	6 hours
4	12:55 PM	All controls off				

Photos: ✓ DCAS:

504-018
200-251
200-076
200-109
200-110
400-039

Test Performed By:

QAF 5238.1 Rev A* 11 ISSUED BY: Michael S. Wood 3/14/2000

Figure 1: Blowing Dust Test Data Sheet

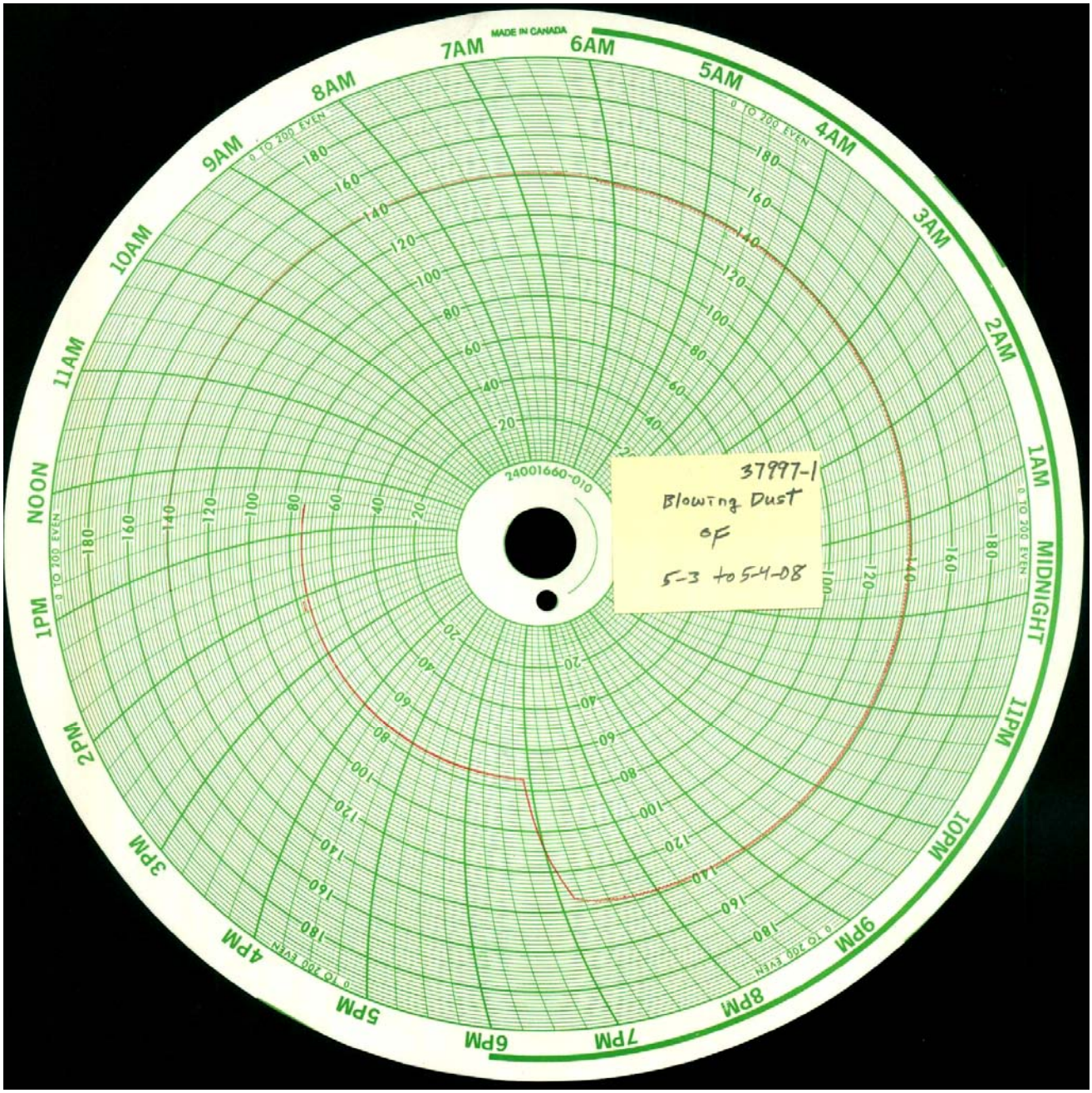
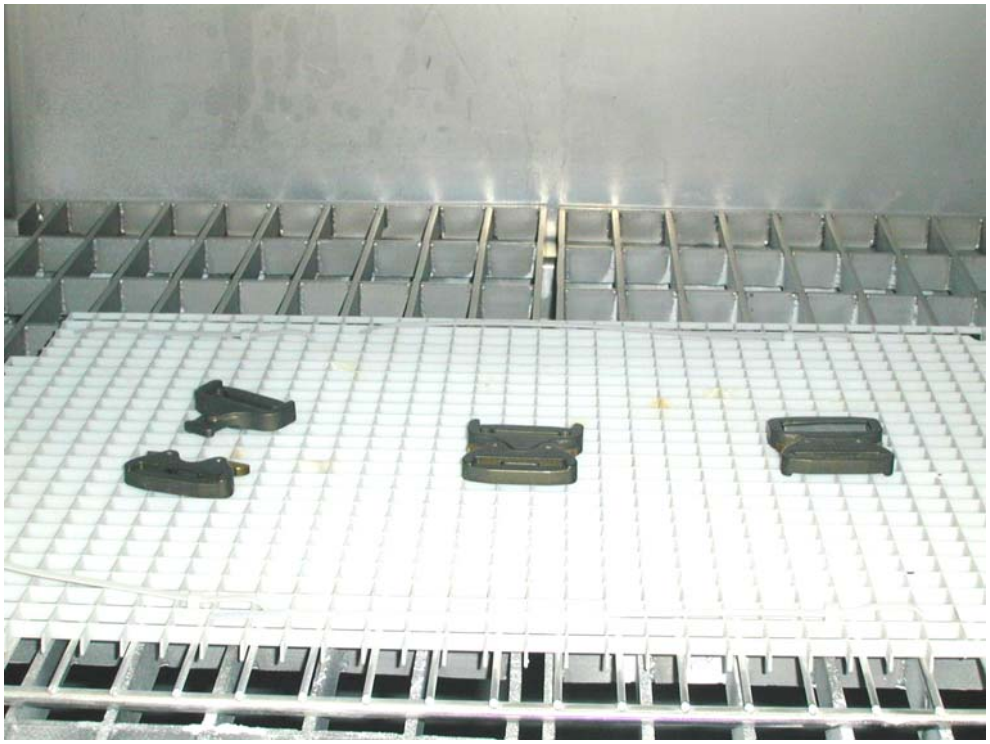


Figure 2: Blowing Dust Test Chart Recording in °F



Photograph 1: Test units placed in blowing dust chamber

Photograph 2: Post-test view of test units