


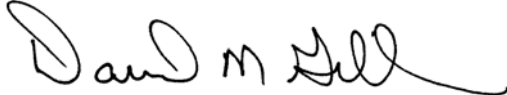


## ENGINEERING REPORT NO. 37997-2

### BLOWING SAND TEST

for

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

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<b>APPROVED BY:</b>	 David M. Gillen Vice President

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## REVISION HISTORY

Revision	Total Number of Pages	Date	Description
--	12	May 16, 2008	Original

<b>PREPARED FOR:</b>  AUSTRIALPIN, INC. 14865 20TH AVENUE P.O. BOX 1257 BLAIRMORE, ALBERTA T0K 0E0 CANADA  ATTN: Mr. Aaron Hemphill	<b>TEST DATES:</b> <b>Start:</b> 5/5/2008 <b>Completion:</b> 5/5/2008
	<b>ENVIRON TEST NO.:</b> 37997-2
	<b>PURCHASE ORDER NO.:</b> 20080424adh1 <b>PURCHASE DATE:</b> 4/24/2008

## BLOWING SAND TEST

### 1.0 ABSTRACT

#### 1.1 Object

Subject three Quick Release Buckles to a Blowing Sand Test in accordance with *MIL-STD-810F*, Method 510.4, Procedure II, 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 before and after the test. The units were returned to AustriAlpin, Inc.

### 2.0 UNIT(S) TESTED

**Table 1: Units Tested**

<b>MANUFACTURER:</b>	AUSTRIALPIN, INC.
<b>DEVICE:</b>	Three (3) Quick Release Buckles
<b>MODEL/PART NO.:</b>	Cobra Safety Click Lock
<b>LOT SIZE:</b>	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 a blowing sand test in accordance with *MIL-STD-810F*, Method 510.4, Procedure II, as described below:

1. Install the test items in the test chamber.
2. Adjust the air velocity to 18 to 29 m/s (3540 to 5700 ft/min).
3. Stabilize the test items at 140°F.
4. Adjust the sand feeder to obtain a sand concentration of  $2.2 \pm 0.5 \text{g/m}^3$ .
5. Maintain the conditions of steps 2 through 4 for at least 90 minutes.
6. Reorient the test items to expose a different face to the blowing sand. Repeat the blowing sand exposure for 90 minutes. Repeat the 90-minute exposure for any remaining faces.
7. Allow the test items to return to standard ambient conditions.
8. Remove accumulated sand from the test items by brushing, wiping, or shaking. Conduct a visual examination. Operate the units.

## 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 Z540.3-2006, and ISO/IEC 17025: 2005.

**Table 2: Instrumentation List**

<b>Equipment Number</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Model Number</b>	<b>Last Calibration</b>	<b>Due Calibration</b>	<b>Range</b>
200-093	Temperature Chart Recorder	Partlow	MRC 7000	12/14/2007	6/16/2008	-150 to +350°F
200-250	Temperature / Humidity Controller	Watlow	F4DH-CCCC-21RG	4/22/2008	4/22/2009	-328 to +750°F; 0 to 100% RH
400-027	Stopwatch	Radio Shack	63-5014	3/7/2008	3/9/2009	0 to 10 hours
501-063	Hydro Thermometer	Extech	444712	12/24/2007	12/24/2008	5 to 99% RH
504-072	Blowing Sand Chamber	Environ	N/A	5/31/2007	5/31/2008	Flow: 0 to 5700 feet/min; Temp: Ambient to 160°F
730-016	Top Loading Balance	VWR Scientific	XT-400D	6/28/2007	6/28/2008	0 to 400 grams
765-003	Velometer	Alnor	6006-AP	7/9/2007	7/9/2008	0 to 10,000 fpm

## 4.2 Procedure

The sand used in this test meets the requirements of *MIL-STD-810F*. The Certificate of Conformance is on file at Environ Laboratories LLC.

The units were placed in the test chamber with one side exposed to the stream of sand. Two of the samples were mated and the third unit was unbuckled. The chamber air velocity was increased to 4000 feet per minute. The chamber temperature was maintained at 140°F. Relative humidity was measured at 11 percent. The units were allowed to stabilize.

The sand feeder was activated and controlled to provide a sand concentration of 2.2 grams per cubic meter. These conditions were maintained for 90 minutes.

The units were then reoriented so another surface faced the sand stream and the conditions stated above were repeated for a period of 90 minutes. The units were then rotated to another surface for an additional 90-minute exposure. This process was repeated until all six faces of the units had been exposed to the blowing sand.

All chamber controls were turned off at the completion of the test and the units were allowed to stabilize at ambient conditions. Accumulated sand was removed by brushing. A visual examination was then performed. The units were operated.

## 4.3 Results

Visual examination of the test units revealed no evidence of external damage or deterioration. The samples opened and closed properly before and after the test. The units were returned to AustriAlpin, Inc.

Figure 1 herein is the test data sheet. Figure 2 shows the chamber temperature chart. Photographs 1 through 6 depict the test setups. Photograph 7 is a post-test view of the test units.



**DATA SHEET**

COMPANY: <u>Austri Alpin, Inc.</u>	
DEVICE: <u>Quick Release Buckles</u>	
MODEL NO. <u>Cobra Safety Click Lock</u>	S/N: <u>3 samples</u>
TEST: <u>Blowing Sand</u>	SPEC: <u>MSL-STD-810</u> PARA: <u>method 510.4</u>

<u>Proc. II</u>
<u>140°F with 11% RH</u>
<u>Air Velocity is 4000 fpm</u>
<u>Sand concentration is 2.2 g/m<sup>3</sup></u>
<u>Side 1 for 90 minutes - OK</u>
<u>Side 2 for 90 minutes - OK</u>
<u>Side 3 for 90 minutes - OK</u>
<u>Side 4 for 90 minutes - OK</u>
<u>Side 5 for 90 minutes - OK</u>
<u>Side 6 for 90 minutes - OK</u>
<u>Samples opened and closed properly before and after the test</u>
<u>No visible damage to the samples</u>
<u>Returned to customer</u>
<u>730-016</u>
<u>504-072, 200-093, 200-250, 400-027, 501-063, 765-003</u>

Test Performed By: [Signature]

Figure 1: Blowing Sand Test Data Sheet

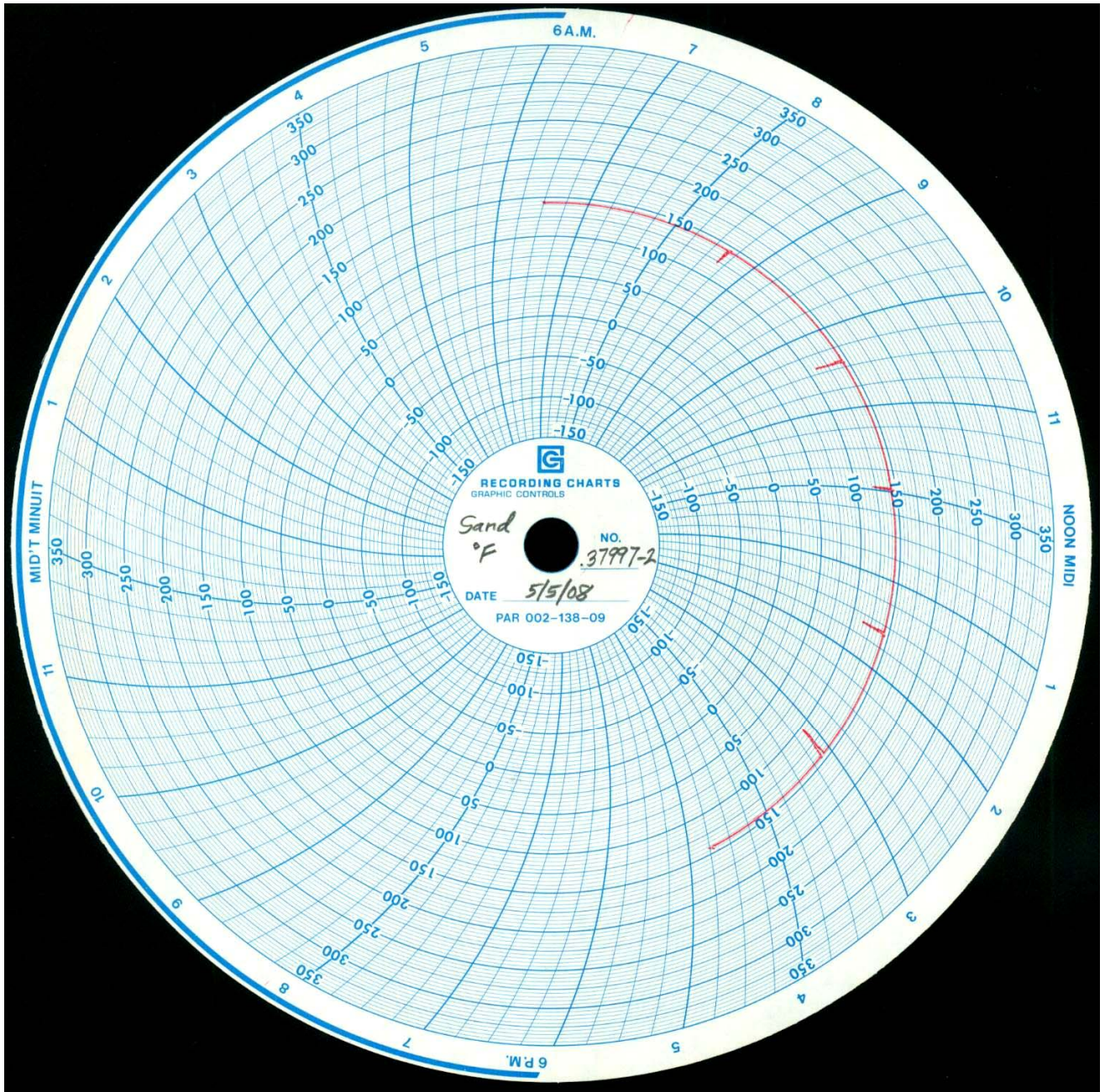


Figure 2: Blowing Sand Test Chart Recording in °F





Photograph 1: Axis 1



Photograph 2: Axis 2



Photograph 3: Axis 3



Photograph 4: Axis 4



Photograph 5: Axis 5



Photograph 6: Axis 6



Photograph 7: Post-test view of test units