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**INTERTEK TEST REPORT**  
3933 US ROUTE 11 CORTLAND, NEW YORK 13045

**TEST REPORT NO. 3096874-001**

**ANSI Z89.1-2003  
INITIAL TESTING OF  
SEONG AN SAVE CO., LTD - SEONG AN SAVE  
MODEL NUMBER: FASHION I  
TYPE I**

**RENDERED TO:  
SEONG AN SAVE CO., LTD  
318-2 YANGJEONG-2-DONG, BUSANJIN-GU  
BUSAN, KOREA  
REP. OF (SOUTH)**

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**Abstract**

The protective cap identified as a Seong An Save Co., Ltd., model Fashion I, submitted by the manufacturer, was received in pristine condition on 08/11/06, 08/30/06, and 09/06/06, and was evaluated in accordance with the requirements of ANSI Z89.1-2003 entitled, "American National Standard for Industrial Head Protection," between 08/25/06 and 09/06/06.

Details of the instrument calibration are maintained in laboratory records.  
The measurement of uncertainty is available upon request.

**Introduction**

This report describes the results of the test program conducted in accordance with ANSI Z89.1-2003 entitled, "American National Standard for Industrial Head Protection," performed on specimens submitted by the manufacturer. Testing of the above mentioned protective caps began only upon Intertek's receipt of the signed quote. Intertek Testing Services, located in Cortland NY, conducted the test evaluations.

**Product Description**

Intertek received 30 production protective caps with date code(s): 6/06 and 7/06. The test samples were identified as specimens 1-30.

**Authorization**

The test was authorized by quote number 20060099, signed by Kim Sang Woo.

**INSTRUCTIONS AND MARKINGS**

SECTION	COMPLIANT (yes/no)
6.1 – Each helmet shall be accompanied by manufacturers' instructions explaining the proper method of size adjustment, use, care and useful service life guidelines.	Yes
6.2 – Each helmet shall bear permanent markings in at least 1.5 mm (0.06 in.) high letters stating the following information:	
6.2 – name or identification mark of the manufacturer;	Yes
6.2 – the date of manufacture;	Yes
6.2 – the American National Standard Designation;	Yes
6.2 – the applicable Type and Class Designations;	Yes
6.2 – the approximate headsize range (see table 1).	Yes

**PERFORMANCE REQUIREMENTS****FLAMMABILITY**

Method: The protective cap was tested in accordance with Section 9.1 above the Static Test Line (STL).

Requirements: No flame shall be visible 5 seconds after removal of the test flame.

Results:

SPECIMEN	LOCATION	AFTER FLAME (sec.)	COMPLIANT
12	Rear	0.0	Yes

**FORCE TRANSMISSION**

Method: The protective cap was tested in accordance with Section 9.2.

Requirements: The protective cap shall transmit an average force of not more than 3781N (850 lbs.). No individual specimen shall transmit a force more than 4450N (1000 lbs.).

Results:

**VELOCITY RANGE:** 5.45 – 5.55 m/s (5.50 ± 0.05 m/s)

**DROP HEIGHT:** 60.7 inches

120 ± 3.6 °F			0 ± 3.6 °F		
SPECIMEN NO.	VELOCITY (m/s)	FORCE (lbs.)	SPECIMEN NO.	VELOCITY (m/s)	FORCE (lbs.)
1	5.59	621.93	13	5.50	763.08
2	5.50	621.93	14	5.50	670.45
3	5.50	617.52	15	5.50	939.51
4	5.50	608.70	16	5.50	899.91
5	5.50	635.16	17	5.51	833.65
6	5.50	630.75	18	5.51	696.91
7	5.50	599.88	19	5.51	913.05
8	5.50	635.16	20	5.51	820.42
9	5.50	617.52	21	5.51	926.28
10	5.50	626.34	22	5.51	771.90
11	5.59	626.34	23	5.51	939.51
12	5.50	626.34	24	5.51	771.90
	<b>AVERAGE</b>	622.30		<b>AVERAGE</b>	828.88

**RESULTS: COMPLIANT**

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6**APEX PENETRATION**

Method: The protective cap was tested in accordance with Section 9.3.

Requirements: The penetrator shall not make contact with the top of the test headform under any of the test conditions specified.

Results:

**VELOCITY RANGE:** 6.9 – 7.1 m/s (7.0 ± 0.1 m/s)

**DROP HEIGHT:** 98.3 inches

HOT CONDITION			COLD CONDITION		
SPECIMEN NO.	VELOCITY (m/s)	COMPLIANT (yes/no)	SPECIMEN NO.	VELOCITY (m/s)	COMPLIANT (yes/no)
25	7.08	Yes	28	6.94	Yes
26	6.94	Yes	29	6.94	Yes
27	6.94	Yes	30	7.08	Yes

**ELECTRICAL INSULATION** (Class G)

Method: The protective cap was tested in accordance with Section 9.7.

Requirements: The protective cap shall withstand 2,200 volts (root mean square), AC, 60 Hertz, for 1 minutes. Leakage shall not exceed 3 milliamperes.

Results:

SPECIMEN NO.	LEAKAGE (mA)	COMPLIANT
1	0.51	Yes
13	0.42	Yes

**ELECTRICAL INSULATION** (Class E)

Method: The protective cap was tested in accordance with Section 9.7.

Requirements: The protective cap shall withstand 20,000 volts (root mean square), AC, 60 Hertz, for 3 minutes. Leakage shall not exceed 9 milliamperes. At 30,000 volts, the test sample shall not burn through.

Results:

SPECIMEN NO.	LEAKAGE (mA)	COMPLIANT
1	5.26	Yes
13	4.18	Yes

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b**Conclusion**

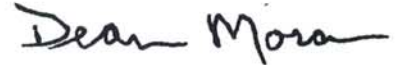
The protective cap identified as a Seong An Save, model Fashion I, met the minimum performance requirements defined in ANSI Z89.1-2003 entitled, "American National Standard for Industrial Head Protection". The helmet type and class defined for this model as a result of the evaluations performed in this report are determined to be **Type I- Class G, E, & C**.

Test Performed by:



Sara Oseid  
Technician  
Performance Group

Report Reviewed by:



Dean Moran  
Technician  
Performance Group