MAXIM TECHNOLOGIES, INC./TWIN CITY TESTING
662 Cromwell Avenue
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BODY INTERFACE PRESSURE POINT TESTING CONDUCTED ON TWO WHEELCHAIR CUSHIONS

Prepared for:
ACTION PRODUCTS, INC.

The test results contained in this report pertain only to the samples submitted for testing and not necessarily to all similar products.

BODY INTERFACE PRESSURE POINT TEST

INTRODUCTION:

This report documents the results of interface pressure point testing conducted on two wheelchair cushions submitted by Action Products, Inc. This work was requested by Mr. Michael Breda of Action Products on May 14, 1997 with the testing conducted June 5-10, 1997.

TEST RESULTS SUMMARY:

Average Pressure (mm Hg)-All Subjects (3)
(Standard Deviation Values in Parenthesis)

Position	Action Products	Jay2
Right Ischial Tuberosity	37 (10.0)	45 (7.1)
Left Ischial Tuberosity	42 (9.0)	48 (8.3)
Sacral Prominence (Coccyx)	35 (13.0)	47 (16.0)
Right Thigh	20 (7.6)	19 (9.0)
Left Thigh	18 (6.0)	18 (8.0)

It is the policy of Maxim Technologies, Inc./Twin City Testing to use recognized test procedures whenever possible, such as ASTM, ANSI, ISO etc. To Maxim's knowledge, no standard procedure exists for interface body contact pressure testing at the present time. The test method employed for this analysis is based on sound laboratory practice. Precautions were employed to position the sensor correctly in each case. The pressure monitor was calibrated before and after each series of measurements.

SAMPLE IDENTIFICATION:

One Action Products wheelchair cushion and one Jay 2 wheelchair cushion were submitted for testing. Both cushions were comprised of a multi-layered contoured ethafoam base. Each incorporated a unique "gel" system that was velcroed to the base. Two pads of each type were submitted to accommodate different weight ranges. Breathable elastic material was used to cover the cushions. The physical properties of the specimens are listed below:

Action Products	Lightweight: 16" x 16" x 5", 5.83 lbs.
	Heavyweight: 16" x 17 1/2" x 5", 6.98 lbs.
Jay 2:	Lightweight: 16" x 16" x 3", 5.67 lbs.
	Heavyweight: 16" x 18" x 3 1/2", 6.04 lbs.

A Ventura theradyne wheelchair with a 16" x 18" collapsible seating area was used in conjunction with the above cushions.

TEST PROCEDURE:

A Talley Oxford Pressure Monitor Model MK II was used for this analysis. The cushions were placed on the seating area of the Ventura Theradyne wheelchair. The subjects were dressed in cotton sweatpants of appropriate size and allowed to acclimate into the cushion for a 4-5 minute period.

A 4" x 5" sensor pad was placed in five different positions of the buttocks area (see TEST RESULTS for specific locations).

Three separate replications were obtained for each location. Repositioning between the three replications conducted on each subject was also part of the test procedure.

It should be noted that no standard procedure exists at the present time that Maxim Technologies is aware of for conducting this type of test. Sound laboratory practice was incorporated to ensure repeatability and reliability. The Talley equipment was calibrated before the test procedure.

The subjects weight, height and gender are tabled below:

Subject	Sex	Height	Weight (lbs)
1	F	5'7"	125
2	M	5'6"	165
3	M	6'1"	195

TEST RESULTS:

Average Pressure (mm Hg) - Individual Subjects
(Standard Deviation Values in Parentheses)

	Action Products				
	Subject 1	Subject 2	Subject 3	Average	Std. Deviation
Right Ischial Tuberosity	27	40	43	37	(10.0)
Left Ischial Tuberosity	37	43	45	42	(9.0)
Sacral Prominence (Coccyx)	24	35	46	35	(13.0)
Right Thigh	28	16	15	20	(7.6)
Left Thigh	23	15	16	18	(6.0)

Jay 2

	Subject 1	Subject 2	Subject 3	Average	Std. Deviation
Right Ischial Tuberosity	36	49	49	45	(7.1)
Left Ischial Tuberosity	38	52	55	48	(8.3)
Sacral Prominence (Coccyx)	30	54	56	47	(16.0)
Right Thigh	28	12	15	19	(9.0)
Left Thigh	23	8	16	16	(8.0)

Maximum Pressure (mm Hg) - Individual Subjects

Action Products

	Subject 1	Subject 2	Subject 3	Average
Right Ischial Tuberosity	35	56	59	50
Left Ischial Tuberosity	45	62	63	57
Sacral Prominence (Coccyx)	40	50	59	50
Right Thigh	34	24	22	27
Left Thigh	28	27	23	26

Jay 2

	Subject 1	Subject 2	Subject 3	Average
Right Ischial Tuberosity	40	63	56	53
Left Ischial Tuberosity	44	62	66	57
Sacral Prominence (Coccyx)	44	63	68	58
Right Thigh	34	28	21	28
Left Thigh	29	17	23	23

REMARKS:

The maximum interface pressure value was obtained from the 12 individual sensors and the results of all subjects averaged.