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**SHOWER UNIT CERTIFICATION TEST
RESULTS REPORT**

Manufactured By: Sander and Sons, Inc.
7540 S. Grant Street
Littleton, CO 80122

Inspection Month: November 2016
Test Type: Full - Qualification

Manufacturer CR #: 6548

Report Number: 65481116042

Date of Inspection: 11/4/2016

Inspected By: Aaron S.

Date Unit Received: 11/16/2016

Unit Model Style: SLDXXXX

Date Unit Tested: 11/4/2016

Unit Serial Number: 1031161002

Date of Report: 12/29/2016

Date of Manufacture: 10/31/2016

Tests performed in accordance with CSA B45.5/IAPMO Z124-Plastic Bathtub and Shower Units

4.0 GENERAL REQUIREMENTS

Materials		Pass
Reinforcement –	Corian Glue/Integra	
Plastic–	PVC Drain	
Fillers –	N/A	
Pigments-	White	
Surface Finish –	Corran	
Unit Characteristics –	Standard 3 Wall Shower Base with Front Linear Drain	
4.1.1	Dimensional Tolerances	Pass
	Dimensions 8" and greater 3%, less than 8" 5%	
	Manufacturer's Specified Unit Dimensions: Whole Unit:	41 3/4 3/4" x 41 7/8" x 4"
	Measured Unit Dimensions: Whole Unit:	41 3/4" x 41 13/16" x 4"
4.1.2	Surface Finish	Pass
	Fixture surfaces shall comply with clause 5.4.	
4.1.3	Coated Parts	N/A
4.1.4	Different Materials	Pass
	Units containing material in addition to plastics shall comply with the appropriate standard.	
4.1.5	Accessible Design	Pass
	Units designed to be accessible shall comply with either ICC/ANSI A117.1 or CAN/CSA-B651.	
4.2.1	Openings & Drainage	Pass
	Openings and drainage shall comply with 4.2.1.1, 4.2.1.2, 4.2.1.3.	
4.2.2	Overflows	N/A

- 4.4 Bathtubs & Shower Bases **Pass**
Bathtubs and shower bases shall comply with 4.4.1-4.4.6
- 5.2 Load & Rotation Tests for Grab Bars **N/A**
- 5.3 Warpage Tolerance **Pass**
The unit is evaluated in accordance with 5.3.1 and must meet the performance criteria in 5.3.2.
- 5.4 Surface Test **Pass**
Unit shall be free of cracks, chipped areas and blisters. The number of molding and other defects or blemishes shall not exceed those given in Table 1 of the referenced standard.
- 5.5 Subsurface Test **Pass**
No visual blemishes or voids larger than 1/16 of an inch in diameter shall be observed below the surface finish. Voids smaller than 1/16 of an inch in diameter observed below the surface finish shall not exceed the number detailed in the standard.
- 5.6 Drain Fitting Connection Test **Pass**
During and after the application of either 25 or 50 pounds by using a 24 inch lever arm in three radial positions, no cracks shall be observed around the drain opening.
- 5.7 Point Impact Load Test **Pass**
After the impact of a 1 1/2 inch, half-pound steel ball from a height of either 20, 24, or 36 inches as specified in the standard, no cracks or chips shall be observed in any of the surface areas tested.
- 5.8.1 Load Test Bathtub & Shower Seats **N/A**
- 5.8.2 Bathtub & Shower Bottom and Threshold Load Test **Pass**

Position Number	Deflection (inches) (<= .150")	Residual Deflection (inches) (<= .008")
1	0.003	0.001
2	Pass	
3	Pass	

<u>Threshold Loads:</u>
A= Pass B= Pass

- 5.8.3 Bathtub & Shower Area Impact Test **N/A**
- 5.8.4 Bathtub & Shower Wall Surround Load Test **N/A**
- 5.9 Radii Load Test for Bathtubs & Showers **Pass**
Surface shall show no cracks, chips, or voids under the applied load of 10 pounds with a half-inch diameter nylon rod on the unit's radial surface areas.
- 5.10 Colorfastness Test **Pass**
The test sample shall show no significant change in color or surface texture after 200 hours of exposure to a xenon arc-type light-exposure apparatus as detailed in 5.10.2 and 5.10.3. Measured color change shall be less than 2 delta E units.

5.11 Stain Resistance Test **Pass**
Ratings for removal of the ten stains listed in the referenced standard are as follows:

REAGENT	COVERED	UNCOVERED
1. Black crayon	5	5
2. Black liquid shoe polish	3	5
3. Blue washable ink	5	5
4. Lipstick	2	2
5. Hair Dye	1	1
6. Iodine Solution	1	1
7. Gentian Violet Solution	5	5
TOTALS	22	24
Thickness of material lost = 0 inches	Stain resistance rating = 46	

The stain resistance rating for all units except sinks shall not exceed 50, for sinks, 64. * Reagents 8, 9 and 10 are only applied to sinks. The maximum allowable thickness of material removal to eliminate the stain shall be 0.005 inches.

5.12 Wear & Cleanability Test **Pass**

A. Wear

The surface finish of the three test samples shall not wear through to the supporting subsurfaces after the required scrub cycles with an abrasive slurry solution.

B. Cleanability

The average absolute loss of white-light reflectance after application and removal of standard dirt with liquid detergent shall not exceed 5.0 percent. The average absolute loss of white-light reflectance after additional cleaning with an abrasive slurry solution shall not exceed 2.0 percent

Loss after liquid detergent application = 1.0 %

Loss after abrasive slurry application = N/A %

Pass

5.13 Ignition Test **N/A**

5.14 Cigarette Test **Pass**

After contact with three lighted cigarettes, the test sample shall show no ignition, progressive glow, or unrepairable damage. Damage to the surface shall be easily repairable by using abrasive and/or polishing compounds.

5.15 Chemical Resistance Test **Pass**

The surface finish shall be unaffected by the 13 reagents used. Any superficial surface change shall be easily repairable by using abrasive and/or polishing compounds.

5.16 Thermal Shock Resistance **Pass**

No cracking, crazing, blistering, spalling or delamination shall be observed at the conclusion of required number of cycles as specified in the standard.

5.17 Water Resistance Test for Bathtubs and Showers **Pass**

The test samples are exposed to 100 hours of 150°F distilled water. There shall be no cracking, crazing, blistering, spalling, delamination, or permanent color change. Measured color change shall be less than 2 delta E units.

5.18	Field Installed Tiling Flange Seal Test	N/A
5.19	Overflow Test	N/A
6.1	General The unit shall be permanently and legibly marked with the manufacturer's name or trademark and it shall be visible after installation. The marking shall comply with all applicable provisions in 6.1.	Pass
6.2	Non-standard Fixtures Non-standard fixtures shall comply with the requirements in 6.2.	Pass
6.3	Field Installed Flanges	N/A
6.4	Packaging Packaging for plumbing fixtures shall be marked as detailed in 6.4	Pass

Comments:

The unit was not damaged during shipping and it did not appear that the unit was tampered with prior to arrival. These tests were performed under the direct and continuous supervision of laboratory personnel. The plastic shower, as selected, **pass** all the sections of the CSA B45.5 / IAPMO Z124 standard detailed in this report.



Sam Yuan
Director of Laboratory & Certification Services

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December 29, 2016

Mr. Michael Sander
Sander and Sons, Inc.
7540 S. Grant Street
Littleton, CO 80122

CR#: 6548

Dear Mr. Sander:

Please find enclosed a copy of the test report on the unit submitted for evaluation.

If you have any questions, please do not hesitate to call.

Sincerely,

A handwritten signature in purple ink that reads "Sam Yuan". The signature is fluid and cursive, with the first and last names clearly legible.

Sam Yuan
Director of Laboratory & Certification Services

Enclosure

cc: K. Jerald, Accounting