

ANSI®
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**American National Standard
for Prefabricated Plastic Spa Shells**



Secretariat
**International Association of
Plumbing and Mechanical Officials**

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American National Standards Institute, Inc.

American National Standard

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Contents

	Page
Foreword	iii
1 Scope and Purpose	1
1.1 Scope	1
1.2 Purpose	1
1.3 Normative References	1
2 Definitions and Description of Terms	1
3 General Requirements	1
3.1 Materials	1
3.2 Dimensional Tolerances	1
3.3 Units for Testing	2
3.4 Installation	2
3.5 Care and Maintenance Instructions	2
3.6 Identification	2
3.7 Test Unit	2
4 Workmanship and Finish	2
4.1 Unit Preparation	2
4.2 Method of Inspection of the Unit Surface	2
4.3 Surface Test	2
4.4 Subsurface Test	2
5 Physical Characteristic of Materials	2
5.1 Colorfastness Test	2
5.2 Wear and Cleanability Test	3
5.3 Cigarette Test	5
5.4 Chemical Resistance Test	5
6. Structural Integrity of Spa Shell	5
6.1 Load Testing Qualification	5
6.2 Empty Unit Load Testing	5
6.3 Point Impact Tests	6
6.4 Structural Analysis	6
7. Test For Flammability	6
8 Additional Material Tests	6
8.1 Water Resistance Test	6
8.2 Thermal Shock Resistance	7
Tables	
1 Appearance Requirements	3
2 Deflection Factors	6
Figures	
1 Load Test Arrangement for Small Units	8
2 Load Test Arrangement for Large Units	8
3 Load Test Arrangement for Sel Contained Units	9
4 Wear Resistance Tank - Top View Without Screws	10
5 Brush Holder (Sled) (Z124 Wear Test)	12
6 Platform & Specimen Mounting Plate for Wear Tester	12
7 Brush Block Details	13

	Page
Appendix	
I Testing Equipment Suppliers	14
II Test Report Information	15
III Flammability	15

Foreword (This Foreword is not a part of American National Standard for Prefabricated Plastic Spa Shells)

Production of gel-coated glass-fiber reinforced Plastic Plumbing Fixtures began in 1956. The immediate need for standard specifications was answered by the issuance, in 1959, of Commercial Standards CS 221-59 for bathtubs and CS 222-59 for shower receptors. These standards served as the basis of product acceptance by the Federal Housing Administration (FHA) and code writing agencies.

In 1962 the development of a needed industry standard was undertaken by the NAHB Research Institute and a Reinforced Plastics Industry Advisory Board with the cooperation and assistance of the Society of the Plastics Industry. In July 1963, the NAHB Research Institute issued a new standard for tub-shower units which constituted an extensive revision of CS 221-59 and was the first performance-type standard for such products.

In December 1965, the NAHB Research Foundation, Inc., continuing the work of the NAHB Research Institute, issued a revised standard for bathtub units and a standard for shower receptors and stalls. These standards were considered by those most interested to be worthy of approval as an American National Standard, and the need for their application nationally was self-evident. Accordingly, they were submitted to the Standards Institute in 1965 and approved on April 5, 1967 as American National Standard for Gel-Coated Glass-Fiber Reinforced Polyester Resin Bathtub Units, Z124.1-1967 and Gel-Coated Fiberglass Reinforced Polyester Resin Shower Receptors and Shower Stalls, Z124.2-1967.

The sponsor also asked for the establishment of an American National Standards Committee, which was approved as American National Standards Committee Z124.

Use of American National Standards Z124.1 and Z124.2 has resulted, over the years, in constructive suggestions which have been incorporated in these standards. Many of the requirements given in these standards evolved out of field experience with new materials and manufacturing techniques. Therefore, these standards have been expanded, listing separate areas of pertinent tests and performance requirements for such materials and techniques. They also cover the revision and addition of test methods and performance requirements.

In October 1978, the International Association of Plumbing and Mechanical Officials (IAPMO) assumed the secretariat's position to continue the work already in progress.

The continuation of work resulted in the revision and updating of Z124.1 for Plastic Bathtubs and Z124.2 for Plastic Shower Receptors and Shower Stalls. These standards were forwarded to American National Standards Institute and adopted on May 1, 1980.

A Standard for Plastic Lavatories, which had been started by a Task Group in early 1975, was also completed and forwarded to American National Standards Institute in September 1979. The formal adoption date was May 21, 1980, and resulted in American National Standard Z124.3 for Plastic Lavatories.

At the request of HUD a Task Committee developed a standard for Plastic Water Closet Bowls and Tanks. It was completed and forwarded to ANSI and formally adopted May 30, 1983, as American National Standard Z124.4.

The Standard for Plastic Toilet (Water Closets) Seats which was started in November 8, 1983 was completed and forwarded to the American National Standards Institute on February 15, 1989. The formal adoption date was August 24, 1989 and resulted in American National Standards Institute, Standard Z124.5 for Plastic Toilet (Water Closets) Seats.

This Standard for Plastic Sinks which was started in April 1986 was completed and forwarded to American National Standards Institute on July 1989. The formal adoption date was December 13, 1990 and resulted in American National Standard Z124.6 for Plastic Sinks.

The standard for Prefabricated Plastic Spa Shells which was started in February 1987 was completed and forwarded to the American National Standards Institute in November 1996. The formal adoption date was June 5, 1997 and resulted in American National Standard Z124.7 for Prefabricated Plastic Spa Shells.

The standard for Plastic Bathtub Liners which was started in 1985 was completed and forwarded to the American National Standards Institute in June 1990. The formal adoption date was October 1990 and resulted in American National Standards Institute, Standard Z124.8 for Plastic Bathtub Liners.

Other standards which are appropriate for the scope of the Z124 Standards are also under development.

The Z124 Committee had grown from the original 1962 Committee of eleven industry members to a full consensus balanced Committee of twenty producer members and twenty general interest, consumer, and distributor membership.

Suggestions for improvement of these Z124 standards are always welcome. They should be sent to the American National Standards Institute, 11 West 42nd Street, New York, NY 10036.

This standard was processed and approved for submittal to ANSI by American National Standards Committee on Synthetic Organic Materials in Plumbing Fixtures, Z124. Committee approval of the standard does not necessarily imply that all Committee members voted for its approval. At the time it approved this standard, the Z124 Committee had the following members:

Shabbir Rawalpindiwala, Chairman
Patrick J. Higgins, Vice Chairman
Lloyd Klusendorf, Secretary

<i>Organization Represented</i>	<i>Name of Representative</i>
American Institute of Architects	W. W. Aird
American Society of Plumbing Engineers	G. Markow
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Gruber Systems	L. Garasi
Higgins & Associates	P. J. Higgins
Housing and Urban Development	L. Breden
Independent	R. Deuel
J.M. Huber/Solem Div.	B Dallum
ICI Acrylics - Lucite ® Sheet Division	R. Gano
Industrial Testing Laboratory	A. M. Siegel
International Association of Plumbing and Mechanical Officials	S. Rawalpindiwala

<i>Organization Represented</i>	<i>Name of Representative</i>
International Cast Polymer Association.....	S. McNally
Kohler Co.	J. Sargent
	L. W. Klusendorf (Alt)
Masco Corporation	D. L. Roskopf
	B. Gentsch (Alt)
Metropolitan Water District of Southern California	R. Brown
National Association of Home Builders	C. Arnold
	T. Kenney (Alt)
National Association of Plumbing, Heating, and Cooling Contractors	R. E. White
National Association of Thermoformers for Manufactured Housing Industry	S. Richardson
	B. Mitchell (Alt.)
National Fiberglass Products, Inc.	K. Salach
National Sanitation Foundation	R. Coiner
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Novi American.....	K. Vanker
PTL Inspectorate Inc.....	R. Garland
	P. Medwig (Alt)
Spartech.....	D. Meinzinger
Taylor Industries	B. W. Taylor
	R. Taylor (Alt)
United Association	G. H. Bliss III
U. S. Testing Co., Inc.	D. Holloway
Waterless Company	K. Reichardt

Subcommittee Z124.7 on Plastic Sinks, which developed this standard had the following members:

S. Rawalpindiwala, Chairman	L.D. Andriate	P. Meikle
B. Gentsch, Secretary	T. Brignole	D. Meinzinger
	E. Grimes	E. Minghetti
	T. Hicks	K. Moiner
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	D. Holloway	P. Sandner
	M. Klimboff	J. Sargent
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	S. Mayotte	A. Siegel
	S. McNally	P. Zelasko

AMERICAN NATIONAL STANDARD FOR PREFABRICATED PLASTIC SPA SHELLS

ASTM D 2565-92a, *Practice for operating xenon arc-type light exposure apparatus with and without water for exposure of plastics*

1. Scope and purpose

1.1 Scope. This standard covers requirements and test methods for performance pertaining to structure, workmanship and finish of plastic spa shells. Such units shall meet the appropriate requirements specified in this standard.

A number of different materials and methods of manufacture shall be permitted to be used to meet these requirements. For this reason, portions of the standard are broken into separate requirements to evaluate these individual characteristics. Not all tests shall be applicable or required for each type of unit.

The materials and equipment which are listed as having been used to conduct the testing procedures in this standard are provided solely for informational reference. Materials and equipment of similar design, composition and specification shall be permitted to be used to conduct these testing procedures.

The provisions of this standard shall not be intended to prevent the use of any alternate material or method of construction provided any such alternate meets the intent of this standard.

1.2 Purpose. The purpose of this standard shall be to establish performance standards for plastic spa shells. It is intended to serve as a guide for authorities, and users; and to provide a basis for identifying spa shells that conform to this standard.

1.3 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying most recent editions of the standards indicated below.

ANSI/UL 94-90, *Tests for flammability of plastic materials for parts in devices and appliances*

ASTM D 883-93, *Standard terminology of terms relating to plastics*

ASTM D 2244-89e1, *Test methods for calculation of color differences from instrumentally measured color coordinates*

2. Definition & description of terms

plastic: A material that contains as an essential ingredient an organic substance of high or low molecular weight, and is solid in its finished state. At some stage in its manufacture, or processing it can be shaped into finished articles.

spa: A product intended for the immersion of persons in heated water circulated in a closed system, and not intended to be drained and filled with each use. A spa usually includes a filter, a heater (electric, solar, or gas), a pump or pumps, and a control, and shall also be permitted to include other equipment such as lights, blowers, and water sanitizing equipment.

self-contained spa: A spa in which all control, water-heating, and water-circulating equipment is an integral part of the product. Industry terminology for self-contained spas is sometimes referred to as a portable spa.

test spans: The largest plane surfaces in the horizontal and vertical surfaces of the spa unit. The test span shall not contain any corrugations, ridges or other protrusions that would act as stiffeners.

test support: A rigid framework capable of supporting the spa shell when it is filled to the top of the rim or flange with water.

dial gage or equivalent measuring device: An instrument capable of measuring linear displacements with an accuracy of 0.025 mm (0.001 in).

spa shell: An assembled spa with or without plumbing.

thickness of spa shell: The thickness of spa shell shall consist of the total thickness of all materials contributing to the rigidity of the spa shell. Thickness measurements shall be made on material from outside or other openings.

3. General requirements

3.1 Materials

Materials used shall be suitable to meet the performance requirements of this standard.

3.2 Dimensional tolerances. The finished trim dimensional tolerances for prefabricated units shall be the manufacturer's stated "rough in" dimensions.