

**American National Standard
Standard for the
Provision of Slip
Resistance on
Walking/Working Surfaces**

Secretariat

American Society of Safety Engineers
1800 East Oakton Street
Des Plaines, Illinois 60018-2187

Approved July 2, 2001

ANSI Board of Standards Review

American National Standard

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Foreword (This foreword is not a part of American National Standard A1264.2-2001)

The project initiation of this standard was set in motion after a Letter Ballot of the ANSI A1264 Committee approving such action. Following this action was registration of the PINS whereby public comment and notice were solicited. When the sixty (60) day public notice expired on June 15, 1993, without comment, the project was officially launched by the ASSE as secretariat. As an accredited standard developer, ASSE was approved to act as secretariat for the development of the standard. The American National Standard A1264.1-1995: *Safety Requirements for Workplace Floor and Wall Openings, Stairs and Railing Systems*, as well as many regional model building codes, OSHA regulations, and other ANSI Standards, use the term "slip resistance". The perceived need for this standard was to further define the term "slip resistance", and to set forth common and accepted practices for providing reasonably safe walking/working surfaces. A1264.2 has taken a step in addressing this need and formalizing a minimum consensus standard which would allow businesses and industry to advance the art of measuring slip resistance on walking/working surfaces, thereby enabling safer workplaces.

The scientific investigation of pedestrian safety, by measuring the frictional resistances of walkway surfaces/materials to obtain data and aid in the formulation of a walkway safety code in the U.S., began in the 1920's by R.B. Hunter under project A-22 of the American Standards Association (now ANSI), with subsequent research study fellowships at the National Bureau of Standards (now the National Institute for Standards and Technology - NIST). Subsequently, there have been numerous scientific studies of pedestrian safety, and many slip resistance testing devices have been developed. Additional standards and related research initiatives have also been undertaken by universities, consensus writing bodies, testing and research facilities, and independent researchers. These studies ultimately produced more questions than answers. However, one common problem was the difficulty in developing an acceptable tribometric device, which would produce valid, reliable, and reproducible results in a field setting under both wet and dry conditions.

A phenomenon known as "sticktion" is associated with devices, which sit on a surface before slipping occurs. Sticktion has been found to occur when an adhesion developed between the device and the surface on which it set in the presence of a liquid contaminant. This led to erroneously high slip resistance readings on surfaces, which were contaminated with liquids, which was contrary not only to logic, but also the known response of the human foot on wet surfaces. The development of new devices that avoid sticktion, by applying the horizontal and vertical force components to the surface simultaneously, thereby avoiding residence time, makes them suitable for testing under wet as well as dry conditions.

There are three basic areas addressed in the standard: 1) provisions for reducing hazards; 2) test procedures and equipment; and 3) slip resistance guideline. The committee is aware of standards activities, which have been in development for many years with regard to test procedures and equipment, and opted to reference those standards in keeping with the advancements in this area. The E11.2 section of the standard is offered as a guideline, which goes a step beyond that which has previously been considered to be vague and ambiguous.

The intent of this standard is to help in the reduction of falls due to conditions, which in some fashion are manageable. The standards committee offers this standard as the state of the art, however continuing developments are to be expected, and revisions of the standard will be necessary as tribometric science progresses. It is felt, however, that guidelines and recommendations are very much needed and that the standard in its present form provides for the minimum performance requirements necessary for increased safety on walking/working surfaces in the workplace.

At the time the ANSI A1264.2 – 2001 Standard was approved as American National Standard; the A1264 Accredited Standards Committee consisted of the following members:

Thomas J. Reilly, Chairman
Lawrence E. Oldendorf, Vice-Chairman
Timothy R. Fisher, Secretary
Thomas F. Bresnahan, Special Advisor
David de Vries, Contributor

Organization Represented

American Institute of Steel Construction
American Society of Safety Engineers

Association for Manufacturing Technology
International Association of Bridge
Structural and Ornamental Iron Workers
International Association of Machinists
and Aerospace Workers

National Association of Government Labor Officials

National Fire Protection Association
National Ornament and Miscellaneous
Metals Association

Timber Products Manufacturing
U.S. Dept. of Labor/OSHA

Virginia Polytechnical Institute
Western Resources

Zurn Industries
American Society for Testing and Materials

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Patrick Bush (Alt)
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Felicia Quinzi (Ob)

The development of the draft standard, which was approved by the A1264 ASC, was by a subcommittee consisting of the following members:

Keith Vidal, Chairman
Timothy Fisher, Secretary
Thomas Bresnahan, Special Advisor
David de Vries, Contributor
William English, Member
Paul Isenberg, Member
William Marletta, Member
Thomas Reilly, Member
James Smith, Member
Donald Stella, Member
David Underwood, Member

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EXPLANATION OF STANDARD

American National Standard A1264.2-2001 uses a two-column format to provide both specific requirements and supporting information. The left column, designated “Standard Requirements” is confined solely to these requirements and is printed in bold type. The right column, designated “Explanatory Information” contains only information that is intended to clarify the Standard. This column is not part of the standard.

STANDARD REQUIREMENTS

EXPLANATORY INFORMATION (Not part of American National Standard A1264.2-2001)

1. Preface

Falls have been a leading cause of accidental deaths in the U.S. since the early 19th century. Workplace falls are very significant because (1) they can and do inflict serious injuries, and (2) they cause other secondary accidents. Many falls from elevation are initiated by slip occurrences. It has been found that the most common precipitating event leading to a slip is the unexpected loss of traction between a shoe bottom and floor material. Slip resistance of a walking surface is often a key consideration in employee safety and in the prevention of worker slips and falls.

Environments requiring more physically intensive tasks generally require a higher level of traction for the safety of workers. Slip and fall accidents can be associated with several major factors or conditions such as:

- Floor surface characteristics;
- Footwear traction properties;
- Environmental factors
(contaminants such as water, oil, etc.);
- Human factors (gait, human activity, etc.);
- Psychological and physiological conditions of the walker.

This standard addresses the first three items, which can more generally be controlled by management.

2. *Scope, purpose, and application of Standard*

2.1 *Scope.* This standard sets forth provisions for protecting persons where there is potential for slipping and falling as a result of surface characteristics or conditions.

2.2 *Purpose.* The purpose of this standard is to establish provisions for reasonably safe working and walking environments for persons pursuing their foreseeable activities.

2.3 *Application.* This standard is intended to apply primarily to industrial and workplace situations and is not intended to apply to construction or residential occupancies, floating

E2. For additional information refer to ANSI A1264.1-1995.