

ANSI/SPI B151.1-1997

# American National Standard

*for Plastics Machinery –  
Horizontal Injection Molding  
Machines –  
Safety Requirements  
for Manufacture, Care, and Use*



**American National Standards Institute**

11 West 42nd Street  
New York, New York  
10036

This is a preview of "ANSI/SPI B151.1-1997". [Click here to purchase the full version from the ANSI store.](#)

**ANSI/SPI B151.1-1997**

Revision of  
ANSI/SPI B151.1-1990

American National Standard  
for Plastics Machinery –  
Horizontal Injection Molding Machines –  
Safety Requirements for  
Manufacture, Care, and Use

Sponsor

**The Society of the Plastics Industry, Inc.**

Approved July 22, 1997

**American National Standards Institute, Inc.**

## American National Standard

Approval of an American National Standard requires review by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

**CAUTION NOTICE:** This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

Published by

**American National Standards Institute  
11 West 42nd Street, New York, New York 10036**

Copyright © 1997 by American National Standards Institute  
All rights reserved.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without prior written permission of the publisher.

Printed in the United States of America

APS2C997

## Contents

	Page
Foreword.....	ii
<b>1</b> Scope, purpose, and application .....	<b>1</b>
<b>2</b> Normative references .....	<b>2</b>
<b>3</b> Definitions .....	<b>3</b>
<b>4</b> Care – Responsibility for .....	<b>6</b>
<b>5</b> Manufacture, remanufacture, and modification .....	<b>7</b>
<b>6</b> Existing HIMMs .....	<b>15</b>
<b>7</b> Use .....	<b>21</b>
<b>8</b> Safety signs .....	<b>22</b>
<b>Figure</b>	
<b>1</b> Parts discharge opening .....	<b>10</b>

**Foreword** (This foreword is not part of American National Standard ANSI/SPI B151.1-1997.)

This standard is a revision of *American National Standard for Plastics machinery – Horizontal injection molding machines – Safety requirements for the manufacture, care, and use*, ANSI/SPI B151.1-1990. The standard was revised because:

- the scope needed to be expanded and the title modified;
- some illustrations required modification to conform to the text and some illustrations were deleted to permit design freedom;
- additional definitions were required;
- some paragraphs required modification and some paragraphs were added to conform more closely to change in technology;
- some paragraphs required modification for clarity and intent.

The project on safety requirements for the manufacture, care, and use of horizontal injection molding machines was initiated under the auspices of the Injection Molding Section of the Machinery Division, and the Safety Committee of the Molders Division, of the Society of the Plastics Industry, Inc. (SPI).

Both divisions of the SPI have long been concerned with operator safety on plastics processing equipment. Accordingly, each section of the divisions has established a standards development committee, charged with the task of establishing necessary standards.

A standard treating the manufacture, care, and use of horizontal injection molding machines is complicated by the wide variety and sizes of machines manufactured and in use, and by the virtually infinite combinations of parts being produced, the production methods used, and the operating conditions existing in industry today.

The primary objective of this standard is to minimize hazards to personnel associated with machine activity by establishing requirements for the manufacture, care, and use of these machines.

To accomplish this objective, the committee decided to approach the problem of machine safety from two directions:

- Eliminating by design certain recognized hazards and establishing standard approaches to design so that machines available from competitive manufacturers will have similar operational characteristics;
- Safeguarding the machine to protect personnel from recognized hazards.

To assist in the interpretation of these requirements, responsibilities have been assigned to the manufacturer, the remanufacturer, the modifier, and the employer.

Recognizing the impossibility of updating equipment and changing operation methods allied with existing machines immediately after approval date of this standard, a grace period has been provided to employers for updating machines (see clause 6).

Recognizing the impossibility of immediate updating of design and manufacturing methods, clauses 5 and 8 shall become effective one year after the approval date (July 22, 1997) of this standard.

Suggestions for improvement of this standard will be welcome. They should be sent to the Society of the Plastics Industry, Inc., 1801 K Street, NW, Washington, DC 20006.

Consensus for this standard was achieved by use of the Canvass Method.

The following organizations recognized as having an interest in the standardization of horizontal injection molding machines were contacted prior to the approval of this standard. Inclusion in this list does not necessarily imply that the organization concurred with the submittal of the proposed standard to ANSI.

- Aerospace Industries Association
- Alliance of American Insurers
- American Automobile Manufacturers Association
- American Insurance Services Group
- American Standards Testing Bureau
- ASTM
- Factory Mutual Research
- Industrial Safety Equipment Association
- Masonry and Concrete Saw Manufacturers Institute
- National Institute of Standards and Technology
- Robotic Industries Association
- Rubber Manufacturers
- Society of the Plastics Industry, Machinery Manufacturers Division
- Society of the Plastics Industry, Molders Division

The Injection Molding Section, Standards Development Committee of the Machinery Division, and the Safety Committee of the Molders Division of The Society of the Plastics Industry, Inc., which was responsible for this standard, had the following members:

J. Rexford, Chairman (HPM Corporation)	R. Arnott (Husky Injection Molding Systems, Ltd.)
W. Bishop, Secretariat (Machinery Division of the Society of the Plastics Industry)	T. Betts (Battenfeld of America, Inc.)
	V. Chudoba (Ube Industries, Inc.)
	F. Engers (Hoffer Plastics Corporation)
	D. Hidding (Dana Molded Products, Inc.)
	C. Irick (EPCO Division, John Brown)
	T. Koury (Blue Water Plastics, Inc.)
	L. Mills (Van Dorn Demag Corporation)
	R. Monteith (Cincinnati Milacron, Inc.)



## Explanation of Standard Format

American National Standard ANSI/SPI B151.1-1997 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* a part of the standard. Where supplementary photographs or sketches are required, they are designated as "illustrations."

Operating rules (safe practices) are not included in either column unless they are of such a nature as to be vital safety requirements, equal in weight to other requirements, or guides to assist in compliance with the standard.

This is a preview of "ANSI/SPI B151.1-1997". [Click here to purchase the full version from the ANSI store.](#)

American National Standard  
for Plastics Machinery –

## Horizontal Injection Molding Machines – Safety Requirements for Manufacture, Care, and Use

### STANDARD REQUIREMENTS

### EXPLANATORY INFORMATION

(Not part of *American National Standard for Plastics machinery – Horizontal injection molding machines – Safety requirements for manufacture, care, and use*, ANSI/SPI B151.1-1997)

#### 1 Scope, purpose, and application

##### 1.1 Scope

The requirements of this standard shall apply to all HIMMs that process plastic materials and inject said material into a mold held closed by a horizontally acting clamp.

Safety requirements for the manufacture, care, and use of ancillary equipment for HIMMs are not covered by this standard.

##### 1.2 Purpose

The purpose of this standard is to minimize hazards to personnel working on, or adjacent to, a HIMM.

##### 1.3 Application

##### *E1.3 Application*

Inquiries with respect to the application of, or substantive requirements of, this standard should be addressed to the Society of the Plastics Industry, Inc., 1801 K Street, NW, Washington, DC 20006.

##### 1.3.1 New HIMMs

The requirements in clauses 5 and 8 of this standard shall apply to all new or remanufactured HIMMs, installed in the United States of America, that were manufactured after the compliance date of this standard. The compliance date shall be one year after the approval date (July 22, 1997) of this standard.