

ANSI/SPI B151.27-2003

American National Standard

*for Plastics Machinery –
Robots Used with
Horizontal and Vertical
Injection Molding Machines –
Safety Requirements for
the Integration, Care, and Use*



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Revision of
ANSI/SPI B151.27-1994

American National Standard
for Plastics Machinery –

**Robots Used with Horizontal and Vertical
Injection Molding Machines –
Safety Requirements for
the Integration, Care, and Use**

Sponsor

The Society of the Plastics Industry

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American National Standards Institute, Inc.

American National Standard

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Foreword (This foreword is not part of American National Standard ANSI/SPI B151.27-2003.)

This standard is a revision of *American National Standard for Plastics Machinery - Robots Used with Horizontal Injection Molding Machines - Safety Requirements for the Integration, Care, and Use*, ANSI/SPI B151.27-1994.

The project on Safety Requirements for the Integration, Care and Use of Robots Used with Horizontal and Vertical Injection Molding Machines was initiated under the auspices of the Auxiliary Section of the Society of the Plastics Industry (SPI) Machinery Division and the Safety Committee of the SPI Molders Division.

Both divisions have long been concerned with operator safety on plastics processing machinery and auxiliary equipment. Accordingly, each section of the Machinery Division has established a standards committee charged with the task of establishing safety standards.

A standard addressing the integration, care, and use of robots used with horizontal and vertical clamp injection molding machines is complicated by the variety and sizes of machines and robots manufactured and in use and by virtually infinite combinations of parts being produced, production methods used, and operating conditions existing in industry today.

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

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

- eliminate, by design criteria, recognized hazards, and establish standard approaches to design so that robot integration from competitive manufacturers will have similar operational characteristics;
- safeguard the point of operation to protect the operator 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.

Suggestions for improvement of this standard will be welcome. They should be sent to the Society of the Plastics Industry, 1801 K Street, NW, Suite 600, 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.

Alcona Associates
Packaging Machinery Manufacturers Institute
Robotic Industries Association
Rubber Manufacturers
Textron
Society of the Plastics Industry
Machinery Manufacturers Division
Molders Division
Mold Makers Division

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

J. Healy, Chairman
The Conair Group

G. Atkinson
(Husky Injection Molding Systems)
G. Hamilton
(AEC/Sterling)
C. Irick
(EPCO Machinery LLC)
H. Luttmann
(Engel Canada)
M. Lyons
(Automated Assemblies Corporation)
L. Mills
(Van Dorn Demag Corporation)
B. Monteith
(Milacron, Inc.)
J. Rexford
(HPM Corporation)

Explanation of Standard Format

American National Standard ANSI/SPI B151.27-2003 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.

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.

American National Standard
for Plastics Machinery –

Robots Used with Horizontal and Vertical Injection Molding Machines – Safety Requirements for the Integration, Care, and Use

STANDARD REQUIREMENTS

EXPLANATORY INFORMATION

(Not part of American National Standard for Plastics Machinery – Robots Used with Horizontal and Vertical Injection Molding Machines – Safety Requirements for the Integration, Care, and Use, ANSI/SPI B151.27-2003)

1 Scope, Purpose, and Application

1.1 Scope

The requirements of this standard shall apply to all robots used on or in conjunction with horizontal and vertical IMM(s).

1.2 Purpose

The purpose of this standard is to establish recommended safe practices and procedures for the integration, care, and use of robots entering the *mold area* of horizontal and vertical IMM(s). Procedures for automatic mold changers and other ancillary equipment are not included in this standard.