# Machine Safeguarding Standards

## ANSI Standards
- **ANSI O1.1** Woodworking Machinery
- **ANSI B11.0** Safety of Machinery - General Requirements and Risk Assessment
- **ANSI B11.1** Mechanical Power Presses
- **ANSI B11.2** Hydraulic Power Presses
- **ANSI B11.3** Power Press Brakes
- **ANSI B11.4** Shears
- **ANSI B11.5** Iron Workers
- **ANSI B11.6** Turning Machines (Lathes) - Manual
- **ANSI B11.7** Cold Headers and Cold Formers
- **ANSI B11.8** Manual Milling, Drilling and Boring
- **ANSI B11.9** Grinding Machines
- **ANSI B11.10** Metal Sawing Machines
- **ANSI B11.11** Gear and Spline Cutting Machines
- **ANSI B11.12** Roll Forming & Roll Bending Machines
- **ANSI B11.13** Single and Multiple-Spindle Bar and Chucking Machines
- **ANSI B11.14** Coil Slitting Machines / Systems
- **ANSI B11.15** Pipe, Tube & Shape Bending Machines
- **ANSI B11.16** Powder / Metal Compacting Presses
- **ANSI B11.17** Horizontal Hydraulic Extrusion Presses
- **ANSI B11.18** Machines Processing of Coiled Strip, Sheet, and Plate

## ANSI Standards - Continued
- **ANSI B11.19** Safeguarding Design, Construction, Installation, Operation, Maintenance
- **ANSI B11.20** Integrated Manufacturing Systems Cells
- **ANSI B11.21** Machines Tools Using Lasers
- **ANSI B11.22** CNC Turning Machines
- **ANSI B11.23** CNC Milling, Drilling & Boring Machines
- **ANSI B11.24** Transfer Machines
- **ANSI / ASME B20.1** Conveyors
- **ANSI / RIA R15.06** Industrial Robots and Robot Systems
- **ANSI B11 / TR3** Risk Assessment / Risk Reduction

## OSHA Regulations
- **OSHA 29 CFR 1910** General Industry Regulations
- **OSHA 29 CFR 1910.212** General Requirements for (Guarding of) All Machines
- **OSHA 1910 - Subpart D** Walking - Working Surfaces
- **OSHA 1910 - Subpart O** Machinery and machine guarding
- **OSHA 1910 - Subpart P** Hand & Portable Powered Tools
- **OSHA 1910 - Subpart S** Electrical
- **OSHA 1910.6** Incorporation by reference - Includes ANSI, NFPA standards
- **OSHA 1910.24** Fixed industrial stairs
- **OSHA 1910.27** Fixed ladders
- **OSHA 1910.147** Control of Hazardous Energy Lockout / Tagout

## OSHA Regulations - Continued
- **OSHA 1910.212** General requirements for all machines
- **OSHA 1910.213** Woodworking machinery
- **OSHA 1910.215** Abrasive wheel machinery
- **OSHA 1910.217** Mechanical power press
- **OSHA 1910.218** Forging machines
- **OSHA 1910.219** Power transmission elements
- **OSHA 1910.333** Electrical Safety

## Additional Standards
- **ANSI / NFPA 70** National Electrical Code
- **ANSI / NFPA 79** Electrical Standard for Industrial Machinery

## Industry Agencies
- **ANSI** American National Standards Institute [www.ansi.org](http://www.ansi.org)
- **ASME** American Society of Mechanical Engineers [www.asme.org](http://www.asme.org)
- **EN** Euronorm - Official European Standard [www.cen.eu](http://www.cen.eu)
- **ISO** International Standards Organization [www.iso.org](http://www.iso.org)
- **NEMA** National Electrical Manufacturers Association [www.nema.org](http://www.nema.org)
- **NFPA** National Fire Protection Association [www.nfpa.org](http://www.nfpa.org)
- **RIA** Robotics Industries Association [www.robotics.org](http://www.robotics.org)

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**OSHA 1910.6 - Incorporation by reference**
The standards of agencies of the U.S. Government, and organizations which are not agencies of the U.S. Government which are incorporated by reference in this part, have the same force and effect as other standards in this part. Only the mandatory provisions (i.e., provisions containing the word “shall” or other mandatory language) of standards incorporated by reference are adopted as standards under the Occupational Safety and Health Act.