PLASTICS
INDUSTRY ASSOCIATION

January 12, 2021

Department of Labor and Economic Opportunity
MIOSHA, Technical Services Division, Standards and FOIA Section
530 West Allegan Street
P.O. Box 30643
Lansing, MI 48909-8143
Attn.: Toscha Klopp, via email: tklopp@michigan.gov

Re: January 12, 2021 Public Hearing Comments for MIOSHA General Industry Safety and Health Standard Part 62. Plastics Molding

Dear Ms. Klopp,

The Plastics Industry Association (PLASTICS) thanks MIOSHA for advancing its process for proposed amendments to MIOSHA General Industry Safety and Health Standard Part 62. Plastics Molding ("Part 62") to reflect current technologies used in the plastics industry. PLASTICS, formerly SPI, is the only organization that supports the entire plastics supply chain, representing nearly one million workers in the $451 billion U.S. industry. Our members include companies that operate plastics molding machinery in Michigan and companies that sell plastic molding machinery to them. PLASTICS is also an American National Standards Institute (ANSI) accredited standards developer.

We remain grateful for and supportive of MIOSHA's efforts to address the Part 62 requirement for a mechanical device on horizontal injection molding machines, as reflected in the current proposed amendments. Despite our efforts in this process, upon further reflection and input, members voiced concerns that requirements for safety circuits are unclear; that is, principles and requirements of relevant standards such as ANSI/PLASTICS B151.1-2017 are not sufficiently incorporated. We respectfully oppose parts of the proposed amendments to R 408.16234, requesting new language in these comments to resolve this and further improve Part 62. We also request a definition in R 408.16207 to clarify the term "safety gate."

Request for Amendment Process – Background
In July 2017, PLASTICS requested initiation of an amendment process to remove the requirement for a mechanical device on plastic horizontal injection molding machines (IMM) built on or after January 7, 2017. Our basis for the request, to amend R408.16234, included:

- A thoroughly documented risk assessment, previously communicated to MIOSHA and conducted by one of the foremost internationally recognized experts in the application of risk assessment to machinery safety, determined the mechanical device to be

unnecessary for machines in compliance with ANSI/SPI B151.1-2007; that is, "removing the mechanical device does not impact the risk."[1]

- The 2017 edition of ANSI/PLASTICS B151.1 allows optional use of a mechanical device for horizontal clamp IMMs (but is still required for vertical clamp IMMs), built to the ANSI/PLASTICS B151.1-2017.[2]
- All machines, whether horizontal or vertical clamp IMMs, built prior to the 2017 ANSI approval date of ANSI/PLASTICS B151.1 (January 6, 2017), are required to have the mechanical device (drop bar/jam bar).
- Brazil is in the process of removing the requirement from its NR-12 standard[3], leaving Michigan as the only known jurisdiction globally that requires this "redundant redundancy" on post January 6, 2017 built IMMs.

Our initial proposal in March 2018 sought to incorporate ANSI/PLASTICS B151.1-2017 for horizontal clamp injection molding machines, either manufactured or modified to be compliant with that standard or any later version that provides equivalent reliability and protection. MIOSHA removed the reference to ANSI/PLASTICS B151.1 in its response, and it remains unclear why its adoption or incorporation was rejected.[4] Since then, PLASTICS has worked with its members and MIOSHA to propose amendments that provide effective protection to workers performing certain activities and reflect current technology and standards for controlling hazardous energy sources.

PLASTICS Requests to Further Improve MIOSHA Part 62

A. PLASTICS requests the addition of the following definition for "safety gate" to R 408.16207:

(3) "Safety gate" means a moveable, interlocked guard allowing the operator access to the point of operation to perform production related tasks.

The existing definitions for "ship-lap machine" and "spin welding" would then need to be renumbered to (4) and (5), respectively.

B. PLASTICS requests the following modifications to Rule 6234 (*italicized* ~~*strike*~~/***bold***):

R 408.16234 Injection molding machinery.

Rule 6234. (1) An injection molding machine, except for one with a movable table that is subject to the provisions of subrule (4) of this rule, shall be equipped with a safety gate~~/~~ **or guard** that is designed and constructed to prevent an employee from reaching into the point

[1] "Analysis of Lockout as a Risk Reduction Measure for Mold Changes on Injection Molding Machines (IMMs)", Prepared for SPI, August 2016. Communicated to MIOSHA on September 9, 2016.
[2] https://ansidotorg.blogspot.com/2017/02/ansiplastics-b1511-2017-safety-injection-molding.html#gref (last accessed January 5, 2021)
[3] Confirmed by the OSH Agency director at the ABIMAQ Conference in Sao Paolo, 3-5 April 2017.
[4] At least six MIOSHA General Industry Safety and Health Standards amended since March 2018 adopt by reference standards from organizations including ANSI: Part 6. Fire Exits (as amended June 11, 2019); Part 20. Underhung Cranes and Monorail Systems (as amended June 12, 2019); Part 63. Pulp, Paper, and Paperboard Mills (as amended April 11, 2018); Part 74. Fire Fighting (as amended June 14, 2019); Part 81. Baking Operations (as amended June 14, 2019), and Part 94. Textiles (as amended April 11, 2018).

of operation, except when the gate is open. ***For injection molding machines manufactured or remanufactured after February 6, 2008, the safety control systems provided shall be monitored to ensure proper function.***
~~(2) A safety gate on an injection molding machine that was manufactured after August 28, 1973, shall be interlocked with electrical, mechanical, and hydraulic or pneumatic devices, except as noted in subrule (9) of this rule.~~
(2) ~~(3) An~~**A horizontal** injection molding machine ~~that was manufactured on or before August 28, 1973,~~ shall have the safety gate interlocked ***to stop or prevent mold-closing*** by ~~*any 2*~~***two*** of the following:
(a) An electrical mold-closing control.
(b) Hydraulic***, electric,*** or pneumatic ~~*valves that*~~***power*** control ***for*** mold closing.
(c) A mechanical device that prevents mold closing.
~~***(d) A second electrical mold closing control (all electrical horizontal injection molding machines).***~~
(3) A vertical clamp injection molding machine shall have a mechanical restraint device to prevent unintentional gravity descent of the *mold*~~*injection unit*~~, and shall have the safety gate interlocked *to stop or prevent mold-closing* by ~~*any 2*~~*two* of the following:
(a) An electrical mold closing control.
(b) Hydraulic*, electric,* or pneumatic ~~*valves that*~~*power* control *for* mold closing.
~~***(c) A second electrical mold closing control (all electrical vertical injection molding machines).***~~

We believe these modifications would further improve the proposed amendments. Regarding Rule 6234. (1), we believe monitoring is important; if a failure does occur, it will be known. The date specified in that sentence, February 6, 2008, was the compliance date for monitoring requirements in ANSI/SPI B151.1-2007. For what would be new Rule 6234. (2), for horizontal IMM, this would add clarity on the intent of the requirement, reduce confusion and underscore that two safety concepts/systems must be selected, encourage diversity in safety application, and eliminate the need for newly proposed option (d) by clarifying (b) to better convey our original intent. For what would be new Rule 6234. (3), for vertical IMM, this adds clarity by changing “injection unit” to “mold,” with parallel changes to (2) in the initial text, option (b), and elimination of newly proposed option (c).

Without changes tracked, this section of Part 62 would then read:

R 408.16234 Injection molding machinery.
Rule 6234. (1) An injection molding machine, except for one with a movable table that is subject to the provisions of subrule (4) of this rule, shall be equipped with a safety gate or guard that is designed and constructed to prevent an employee from reaching into the point of operation, except when the gate is open. For injection molding machines manufactured or remanufactured after February 6, 2008, the safety control systems provided shall be monitored to ensure proper function.

(2) A horizontal injection molding machine shall have the safety gate interlocked to stop or prevent mold-closing by two of the following:
(a) An electrical mold-closing control.
(b) Hydraulic, electric, or pneumatic power control for mold closing.
(c) A mechanical device that prevents mold closing.
(3) A vertical clamp injection molding machine shall have a mechanical restraint device to prevent unintentional gravity descent of the mold, and shall have the safety gate interlocked to stop or prevent mold-closing by two of the following:
(a) An electrical mold closing control.
(b) Hydraulic, electric, or pneumatic power control for mold closing.

To show the difference between PLASTICS' request and MIOSHA's August 2020 document:[5]

R 408.16234 Injection molding machinery.
Rule 6234. (1) An injection molding machine, except for one with a movable table that is subject to the provisions of subrule (4) of this rule, shall be equipped with a safety gate or guard that is designed and constructed to prevent an employee from reaching into the point of operation, except when the gate is open. **For injection molding machines manufactured or remanufactured after February 6, 2008, the safety control systems provided shall be monitored to ensure proper function.**
(2) A horizontal injection molding machine shall have the safety gate interlocked **to stop or prevent mold-closing** by ~~any 2~~**two** of the following:
(a) An electrical mold-closing control.
(b) Hydraulic**, electric,** or pneumatic ~~valves that~~**power** control **for** mold closing.
(c) A mechanical device that prevents mold closing.
~~(d) A second electrical mold closing control (all electrical horizontal injection molding machines).~~
(3) A vertical clamp injection molding machine shall have a mechanical restraint device to prevent unintentional gravity descent of the **mold**~~ injection unit~~, and shall have the safety gate interlocked **to stop or prevent mold-closing** by ~~any 2~~**two** of the following:
(a) An electrical mold closing control.
(b) Hydraulic**, electric,** or pneumatic ~~valves that~~**power** control **for** mold closing.
~~(c) A second electrical mold closing control (all electrical vertical injection molding machines).~~

Closing
We believe the modified language and added definition will increase the clarity for safety circuit requirements and better reflect current technology and standards, resulting in an improved Part 62. This would resolve our opposition to the current proposed amendments of these sections.

[5] 2019- 122 LE GI Part 62 Plastic Molding (Strike and Bold) – 8-19-2020.pdf. This shows those changes accepted, with PLASTICS' new request in ~~strike~~/**bold**.

PLASTICS' members remain committed to the safety of their workers, including the safety standards to which machinery is built and the safe operation, maintenance, and servicing of such machinery. We thank MIOSHA for the opportunity to participate in this process and appreciate your consideration of our requests. Please let us know if we can further assist.

Sincerely,

Marie Gargas

Marie Gargas
Senior Technical Director, Regulatory Affairs