

**North Carolina Department of Labor  
Occupational Safety and Health Division**

**Raleigh, North Carolina**

Field Information System

Operational Procedure Notice 149B

***Subject:*** Special Emphasis Program for Amputations

**A. Purpose and Scope.**

This Operational Procedure Notice (OPN) establishes and implements the North Carolina Department of Labor (NCDOL) Occupational Safety and Health (OSH) Division's Special Emphasis Program (SEP) for safety and health inspections where employees may be exposed to amputation hazards on machinery due to lack of guarding and/or the failure to utilize energy control procedures. This SEP is intended to reduce occupational exposures to amputations by focusing on employers' lockout/tagout programs and use of machine guarding. The specific goals for this SEP can be found under the current OSH Division's five-year Strategic Management Plan (SMP). This instruction applies statewide to establishments under OSH Division jurisdiction.

This OPN also provides guidance to compliance safety and health officers (CSHOs) for conducting inspections under this SEP. This document supplements procedures beyond the standard inspection protocol set forth in the NC Field Operations Manual (FOM).

**B. Background.**

This SEP was established based on the analysis of the accidents and referrals reported to the OSH Division from January 1, 2015 to May 29, 2018, which revealed 576 separate incidents where at least a portion of a single digit had been amputated. 29 CFR 1904.39(b)(11) – Reporting Fatalities, Hospitalizations, Amputations, and Losses of an Eye as a Result of a Work-Related Incident to OSHA defines an amputation as "... the traumatic loss of a limb or other external body part." "Amputations include a part, such as a limb or appendage, that has been severed, cut off, amputated (either completely or partially); fingertip amputations with or without bone loss; medical amputations resulting from irreparable damage; amputations of body parts that have since been reattached. Amputations do not include avulsions, enucleations, degloving, scalping, severed ears, or broken or chipped teeth."

In response to this information, the Amputations SEP was added to the OSH Division's five-year SMP for federal fiscal years (FFY) 2019-2023. Formal SEP activity was implemented beginning in FFY 2020 of the 2019-2023 SMP, which began on October 1, 2019. This included the Amputations targeting schedule outlined in paragraph D.2. – Programmed Inspections. The targeting schedule identifies those North American Industry Classification System (NAICS) codes with the highest rate of amputation and pulled into machinery events in North Carolina. Assignments for programmed planned inspections will be randomly pulled from those NAICS codes.

Since 2019, OSH Compliance has conducted 328 programmed planned Amputations SEP inspections including 102 in FFY 2024. This targeting program has proven to be very successful as Serious, Willful or Repeat (SWR) violations have been identified on nearly 70% of those proactive inspections. Nine of the top ten standards cited under this SEP in FFY 2024 were for

machine guarding or lockout/tagout violations, the exact amputation hazards this program is targeting. Because of the success of this SEP in targeting serious hazards that lead to amputations, this SEP was continued in the 2024 – 2028 SMP.

Additionally, North Carolina employers have increasingly updated their processes and machinery to keep up with the demand to be efficient and cost-effective. This requires employers to automate processes, causing employees to work in close proximity to complicated high speed equipment, which is powered by multiple sources of energy. The demand for this type of equipment brings with it a greater need for proper machine maintenance and machine guarding. The operation of machinery and equipment in the workplace can be extremely dangerous (Appendix B includes examples of machinery and equipment that can cause amputations.)

C. **Internal Training.**

Due to the technical and specific nature of these inspections and machinery encountered, CSHOs who conduct these inspections will receive adequate training and/or experience with both general and specific machine guarding concepts, as well as hazardous energy control (lockout/tagout) program requirements.

1. OSH Division staff or other approved providers will provide training in support of this SEP.
2. New CSHOs will receive training on machine guarding and lockout/tagout during the OSH 105 - Safety Standards course.
3. Refresher training opportunities covering one or more topics under this SEP will be offered at least every two to three years.
4. Previous training material can be reviewed via the OSH One Stop Shop.

D. **Targeting/Selection.**

Amputations SEP inspections will be generated through accidents, complaints, referrals, and NAICS-specific programmed criteria. Inspections can occur in any industry. Assignments will have priority based upon the schedule in FOM Chapter II – Compliance Programming, paragraph E – Inspection Priorities.

1. **Unprogrammed Inspections.**
  - a. Reports of imminent danger, fatality/catastrophe reports, employer-reported referrals, formal and non-formal complaints, and safety and health referrals from other federal, state, county and city agencies, media reports, reports from physicians, other medical clinics, and the public will be investigated by the respective field office.
  - b. CSHOs will follow the guidance for making referrals and expanding the scope under FOM Chapter IX – Complaints, Referrals, and Accidents.

- c. In case of denial of entry, the field office will maintain documentation of the event leading up to the denial.

2. Programmed Inspections.

a. The OSH Division will utilize historical data to identify the NAICS codes with multiple amputations and a high rate of amputation injuries per 10,000 full-time employees in NC. The Planning, Statistics and Information Management (PSIM) Bureau will randomly select establishments within those NAICS codes for inspection and create assignment lists for each OSH Compliance district. The targeting methodology will include the following:

- i. Data from OSHA Express (OE) will be compiled for four full calendar years (refer to Appendix A – NC Amputation Data by Industry for dates used for current targeting).
- ii. The “Serious/Fatal (UPA) Report” will be used to identify the NAICS codes for all events classified as “Amputation-Digit,” “Amputation-Limb,” and “Pulled into Machinery.”
- iii. PSIM will provide data regarding the average number of NC employers and employees in each of these NAICS codes from the same four calendar years.
- iv. The data from OE and PSIM will be used to calculate the rate of amputation/pulled into machinery events per 10,000 full-time NC employees, or 20,000,000 hours, for each NAICS code. The rate formula used is:

*Amputations Rate*

$$= \left( \frac{\text{Average Annual Number of Amputation Incidents}}{\text{Average Annual Total Hours Worked}} \right) \times 20,000,000$$

- v. NAICS codes with three or more “Amputation-Digit,” “Amputation-Limb,” or “Pulled into Machinery” events ( $n \geq 3$  total, or  $\geq 0.75$  average annual count per year) and an annual event rate greater than or equal to 3.75 per 10,000 full-time NC employees will be included in the current targeting schedule.
  - vi. The compiled data, sorted by NAICS code, is shown in Appendix A. The NAICS codes matching the targeting criteria in paragraph D.2.a.v. above are shown in bold in Table 1. Table 2 lists the NAICS codes with at least one amputation event that did NOT meet the targeting criteria.
  - vii. From the list of establishments in the targeted NAICS codes, PSIM will randomly select 25 assignments for each OSH Compliance district.
- b. PSIM will review the generated assignment lists to eliminate sites that have received a comprehensive safety or health inspection within the last three years, as well as inactive and duplicate sites. Additional assignments will be pulled as

needed by the Compliance district at the request of the Compliance bureau chief or supervisor.

- c. OSH Compliance supervisors will use their professional judgement and may delete establishments based on local knowledge that the facility is not likely to have the targeted machinery or is out of business. CSHOs will proceed with the programmed inspection where it has been determined that a new business is using the same plant equipment of the previous business.

**Please note:** Employers that have received a comprehensive safety or health inspection within the last three years may still inadvertently be included on the lists provided by PSIM and should be deleted by the district supervisor if this error is found.

- d. All assignments will be inspected or deleted from the targeting schedule per paragraph D.2.c. prior to requesting another list from PSIM. Justification for deletion of an inspection assignment will be documented on the OSH Targeting System.
- e. Appendix A will be updated annually as new calendar year employment data becomes available.

E. **Compliance Inspection Procedures.**

1. **General.**

- a. If a complaint, referral, or accident inspection is conducted in an establishment covered by this OPN, CSHOs will follow guidance listed below and in FOM Chapter IX – Complaints, Referrals and Accidents.
- b. If a fatality or catastrophe investigation is conducted in an establishment covered by this OPN, CSHOs will follow guidance listed below and in FOM Chapter VIII – Fatality and Catastrophe Investigations.

2. **Pre-Inspection Preparation.**

- a. CSHOs assigned to conduct programmed, partial-scope inspections under this SEP must review the site listing on the OSH Division Targeting System to determine if a deferral has been issued for the employer due to involvement in consultative assistance, SHARP, the Carolina Star Program or through an OSH Partnership. If the site has a deferral, the CSHO will refer to FOM Chapter III – Inspection Procedures, paragraph D.3.h. – Exemptions from Compliance Programmed Planned Inspections, for guidance.
- b. CSHOs assigned to conduct a site inspection under this SEP will familiarize themselves with the following documents, as appropriate:
  - i. NC Field Operations Manual
  - ii. CPL 02-00-147 – Control of Hazardous Energy

- iii. CPL 02-01-025 – Power Press Brakes
- iv. CPL 02-01-043 – Slide-Locks
- v. 29 CFR 1910.147 – The Control of Hazardous Energy
- vi. 29 CFR 1910.212 – General Requirements for All Machines
- vii. 29 CFR 1910.213 – Woodworking Machinery Requirements
- viii. 29 CFR 1910.217 – Mechanical Power Presses
- ix. 29 CFR 1910.219 – Mechanical Power-Transmission Apparatus
- x. 29 CFR 1915, Subpart H – Tools and Related Equipment
- xi. 29 CFR 1915.89 – Control of Hazardous Energy (Lockout/Tags-Plus)
- xii. 29 CFR 1917.151 – Machine Guarding.
- xiii. 29 CFR 1926.417 – Lockout and Tagging of Circuits
- xiv. 29 CFR 1926.300 – General Requirements (Machine Guarding)
- xv. 29 CFR 1928.57 – Guarding of Farm Field Equipment, Farmstead Equipment, and Cotton Gins
- xvi. Industry Data Reports (IDRs) for industries covered under this OPN. The IDRs describe the industry-specific processes and identify the common hazards. They are accessible under the Field Information System (FIS) link on the OSH One Stop Shop.
- xvii. Related ANSI /ASME Standards. Reference Appendix C for a list of consensus standards associated with hazardous machinery and equipment.

3. Inspection Process.

- a. Unprogrammed assignments (e.g., complaints, employer-reported referrals) will be handled in accordance with FOM Chapter IX – Complaints, Referrals, and Accidents. CSHOs should specifically review paragraph A.9. regarding the inspection scope (partial) and the circumstances when it may be expanded to machinery or equipment not included in the original complaint or referral. Paragraph A.9.e.ii. of FOM Chapter IX applies for industries within a NAICS code that is targeted per section D.2.a. – Programmed Inspections.
- b. For programmed planned inspections, CSHOs will indicate during the opening conference that an SEP programmed inspection is being conducted for amputation hazards. The inspection will be partial in scope and involve evaluating onsite machinery for machine guarding hazards, reviewing the employer's lockout/tagout policies/procedures, and addressing any serious hazards in plain view. After obtaining the employer's consent to continue with

the inspection, the CSHO will proceed with the partial inspection by utilizing the inspection guidelines as outlined in FOM Chapter III – Inspection Procedures.

- c. OSHA 300 logs and 301 incident reports for the prior three years (including the current year) will be evaluated during the inspection to identify recorded amputations, severe lacerations, and/or crush injuries created by machinery and equipment. CSHOs should ensure those pieces of equipment are thoroughly evaluated during the walk-through portion of the inspection.
- d. CSHOs will establish/document the types of machinery and equipment present at the workplace and evaluate each one, with a focus on machinery, actions, and processes that could result in an amputation such as, but not limited to: ingoing nip points, pinch points, rotating parts, as well as shear points, cutting actions and other point of operation hazards. **Note:** Some examples of machinery and equipment that can cause amputations are found in Appendix B. CSHOs should evaluate actual **and** potential (i.e., accidental, inadvertent) exposures during normal production operations and address any hazards under OSHA standards for machinery and machine guarding or the General Duty Clause.
- e. CSHOs shall also evaluate potential exposures to amputation hazards during servicing and/or maintenance activities, particularly for machine operators. Those activities may include setup/threading/preparation, clearing jams, making adjustments, cleaning of the machine, oiling or greasing of the machine, and scheduled/unscheduled maintenance. CSHOs shall conduct a comprehensive review of the employer's lockout/tagout program, including but not limited to: the written and unwritten energy control procedures to ensure compliance with the OSHA standards for control of hazardous energy; the lockout/tagout training program content and documentation and to confirm employees received the correct level of training (i.e., affected or authorized) based on their specific job duties; the periodic inspection program and documentation; and the group lockout procedures if multiple employees are involved with servicing and/or maintenance activities. All CSHOs conducting inspections under the Amputations SEP must read and understand all the information in CPL 02-00-147 – The Control of Hazardous Energy - Enforcement Policy and Inspection Procedures, dated February 11, 2008.
- f. CSHOs are required to utilize interview techniques with management officials and employees associated with machinery and equipment to determine if there are amputation hazards present, employee exposure to hazardous conditions, violative nature of hazardous conditions relating to the OSH standard, employer knowledge, etc.

4. Citation Guidance.

Refer to the FOM and other appropriate reference documents (such as CPLs) prior to proceeding with citation issuance.

F. Recording and Tracking.

1. Strategic Plan Coding.

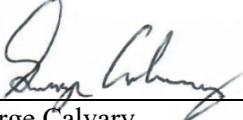
- a. For all unprogrammed inspection activity covered under this SEP, the code “Amputations SEP” shall be marked under the Emphasis/Initiatives tab in OE from the “Strategic Plan Activity Description” pull-down menu. From paragraph A – Purpose and Scope, this SEP covers inspections “where employees may be exposed to amputation hazards on machinery due to lack of guarding and/or the failure to utilize energy control procedures.” Inspections resulting from any unprogrammed activity involving those hazards must have the “Amputations SEP” Strategic Plan code. Examples include the following:
  - i. Complaints/referrals with one or more allegations related to machine guarding or the failure to properly control hazardous energy during servicing and/or maintenance activities.
  - ii. Employer-reported referrals involving an amputation or other traumatic injuries from machinery (e.g., fractured finger or wrist).
  - iii. Follow-up inspections where citations for machine guarding and/or lockout/tagout violations were issued on the original inspections.
- b. All programmed inspections targeted under paragraph D.2. – Programmed Inspections shall be marked with the “Amputations SEP” Strategic Plan code. Programmed inspections from other OSH Compliance targeting schedules (e.g., general schedule, Site-Specific Targeting, etc.) shall NOT be coded as an “Amputations SEP” inspection, even if machine guarding and/or lockout/tagout hazards are identified and cited. The targeting schedule under this OPN is different from others in that it uses NC-specific event and employment data. Limiting the coding to only those programmed planned inspections generated under paragraph D.2. – Programmed Inspections allows OSH to properly evaluate the effectiveness of the targeting schedule.
- c. Inspections covered under this SEP that result in a program improvement will be coded as “Program Improvements” under the Emphasis/Initiatives Tab in OE under “Strategic Plan Activity.”

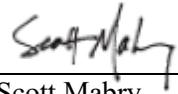
G. **Outreach Activity.**

As outlined in the goals set forth in the most current Strategic Management Plan, ETTA and the Consultative Services Bureau will provide outreach that supports this SEP such as developing publications, updating the website, providing training and conducting consultative surveys.

H. **Effective Date.**

OPN 149A is canceled. This OPN is effective on the date of signature. It will remain in effect until revised or canceled by the director.

  
\_\_\_\_\_  
George Calvary  
SEP Team Leader

  
\_\_\_\_\_  
Scott Mabry  
OSH Director  
3-9-2026  
\_\_\_\_\_  
Date of Signature

**Appendix A: NC Amputation Data by Industry**

- Refer to paragraph D.2.a for the targeting process.
- Current event data: January 1, 2021 – December 31, 2024
- NAICS codes with zero amputation events were removed.
- In certain instances, employer and employee data are unavailable from BLS. Without the data, the amputation injury rate could not be calculated. NAICS codes with no data for the # of NC employers and employees are marked “ND” and were not included in this targeting schedule.
- Within an industry that has sub-industries meeting minimum amputation numbers, and where BLS employer and employee data isn’t available, professional discretion for using a higher level of aggregation was utilized. The specific NAICS codes rolled together are listed in the first column, where applicable.

**Table 1 – Targeted Industries**

| NAICS                               | NAICS Title  | NC Total Amputations (2021-2024) | Annual Average # of Amputations (2021-2024) | Annual Average # of Employers (2021-2024) | Annual Average # of Employees (2021-2024) | Amputations Rate per 10,000 Full-Time Employees |
|-------------------------------------|--|----------------------------------|---|---|---|---|
| 221310                              | Water Supply and Irrigation Systems  | 4                                | 1.00  | 147                                       | 1,904                                     | 5.25  |
| 311421                              | Fruit and Vegetable Canning  | 5                                | 1.25  | 25  | 1,801                                     | 6.94  |
| 311612                              | Meat Processed from Carcasses  | 4                                | 1.00  | 45  | 1,767                                     | 5.66  |
| 311813                              | Frozen Cakes, Pies, and Other Pastries Manufacturing   | 3                                | 0.75  | 5   | 475                                       | 15.79   |
| 311911                              | Roasted Nuts and Peanut Butter Manufacturing   | 3                                | 0.75  | 8   | 592                                       | 12.67   |
| 311919                              | Other Snack Food Manufacturing   | 3                                | 0.75  | 23  | 1,605                                     | 4.67  |
| 313110<br>*(313111, 313112, 313113) | Fiber, Yarn, and Thread Mills. Includes events in Yarn Spinning Mills (8), Yarn Texturing, Throwing, and Twisting (2), and Thread Mills (2). | 12                               | 3.00  | 67  | 7,345                                     | 4.08  |
| 313210                              | Broadwoven Fabric Mills  | 6                                | 1.50  | 51  | 3,915                                     | 3.83  |
| 313230                              | Nonwoven Fabric Mills  | 12                               | 3.00  | 45  | 3,630                                     | 8.26  |
| 321113                              | Sawmills   | 11                               | 2.75  | 121                                       | 3,485                                     | 7.89  |
| 321214                              | Truss Manufacturing  | 4                                | 1.00  | 30  | 1,468                                     | 6.81  |

| NAICS  | NAICS Title   | NC Total Amputations (2021-2024) | Annual Average # of Amputations (2021-2024) | Annual Average # of Employers (2021-2024) | Annual Average # of Employees (2021-2024) | Amputations Rate per 10,000 Full-Time Employees |
|--------|---|----------------------------------|---|---|---|---|
| 321911 | Wood Window and Door Manufacturing                                    | 4                                | 1.00  | 30  | 1,771                                     | 5.65  |
| 321912 | Cut Stock, Resawing Lumber, and Planing                               | 5                                | 1.25  | 31  | 510                                       | 24.51   |
| 321918 | Other Millwork (including Flooring)                                   | 3                                | 0.75  | 53  | 1,863                                     | 4.03  |
| 321920 | Wood Container and Pallet Manufacturing                               | 11                               | 2.75  | 100                                       | 2,914                                     | 9.44  |
| 321992 | Prefabricated Wood Building Manufacturing                             | 5                                | 1.25  | 28  | 320                                       | 39.06   |
| 321999 | All Other Miscellaneous Wood Product Manufacturing                    | 4                                | 1.00  | 76  | 1,511                                     | 6.62  |
| 322211 | Corrugated and Solid Fiber Box Manufacturing                          | 7                                | 1.75  | 60  | 3,734                                     | 4.69  |
| 325411 | Medicinal and Botanical Manufacturing                                 | 4                                | 1.00  | 12  | 325                                       | 30.77   |
| 325991 | Custom Compounding of Purchased Resins                                | 3                                | 0.75  | 19  | 667                                       | 11.24   |
| 326112 | Plastics Packaging Film and Sheet (including Laminated) Manufacturing | 3                                | 0.75  | 20  | 1,984                                     | 3.78  |
| 326113 | Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing  | 4                                | 1.00  | 14  | 1,677                                     | 5.96  |
| 326122 | Plastics Pipe and Pipe Fitting Manufacturing                          | 5                                | 1.25  | 11  | 1,605                                     | 7.79  |
| 326140 | Polystyrene Foam Product Manufacturing                                | 6                                | 1.50  | 31  | 3,670                                     | 4.09  |
| 326199 | All Other Plastics Product Manufacturing                              | 20                               | 5.00  | 162                                       | 11,974                                    | 4.18  |
| 327215 | Glass Product Manufacturing Made of Purchased Glass                   | 4                                | 1.00  | 32  | 1,366                                     | 7.32  |

| NAICS                                     | NAICS Title   | NC Total Amputations (2021-2024) | Annual Average # of Amputations (2021-2024) | Annual Average # of Employers (2021-2024) | Annual Average # of Employees (2021-2024) | Amputations Rate per 10,000 Full-Time Employees |
|---|---|----------------------------------|---|---|---|---|
| 327390                                    | Other Concrete Product Manufacturing  | 3                                | 0.75  | 59  | 1,407                                     | 5.33  |
| 332100<br>*(332112,<br>332115,<br>332116) | Forging and Stamping. Includes events in Nonferrous Forging (1), Crown and Closure Manufacturing (1), and Metal Stamping (2). | 4                                | 1.00  | 43  | 1,498                                     | 6.68  |
| 332321                                    | Metal Window and Door Manufacturing   | 3                                | 0.75  | 40  | 1,953                                     | 3.84  |
| 332322                                    | Sheet Metal Work Manufacturing  | 7                                | 1.75  | 104                                       | 2,461                                     | 7.11  |
| 332510                                    | Hardware Manufacturing  | 3                                | 0.75  | 17  | 1,441                                     | 5.20  |
| 332618                                    | Other Fabricated Wire Product Manufacturing   | 3                                | 0.75  | 24  | 536                                       | 13.99   |
| 332812                                    | Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers                                | 3                                | 0.75  | 87  | 1,364                                     | 5.50  |
| 332991                                    | Ball and Roller Bearing Manufacturing   | 4                                | 1.00  | 9   | 1,204                                     | 8.31  |
| 333414                                    | Heating Equipment (except Warm Air Furnaces) Manufacturing  | 3                                | 0.75  | 17  | 692                                       | 10.84   |
| 335929                                    | Other Communication and Energy Wire Manufacturing   | 3                                | 0.75  | 6   | 1,023                                     | 7.33  |
| 337122                                    | Nonupholstered Wood Household Furniture Manufacturing   | 7                                | 1.75  | 105                                       | 2,269                                     | 7.71  |
| 337127                                    | Institutional Furniture Manufacturing   | 3                                | 0.75  | 33  | 886                                       | 8.47  |

| <b>NAICS</b>  | <b>NAICS Title</b>   | <b>NC Total Amputations (2021-2024)</b> | <b>Annual Average # of Amputations (2021-2024)</b> | <b>Annual Average # of Employers (2021-2024)</b> | <b>Annual Average # of Employees (2021-2024)</b> | <b>Amputations Rate per 10,000 Full-Time Employees</b> |
|---------------|--|---|--|--|--|--|
| <b>339999</b> | <b>All Other Miscellaneous Manufacturing</b>   | <b>7</b>                                | <b>1.75</b>  | <b>81</b>  | <b>2,094</b>                                     | <b>8.36</b>  |
| <b>423930</b> | <b>Recyclable Material Merchant Wholesalers</b>                                      | <b>7</b>                                | <b>1.75</b>  | <b>248</b>                                       | <b>2,558</b>                                     | <b>6.84</b>  |
| <b>532412</b> | <b>Construction, Mining, and Forestry Machinery and Equipment Rental and Leasing</b> | <b>4</b>                                | <b>1.00</b>  | <b>158</b>                                       | <b>2,229</b>                                     | <b>4.49</b>  |

**Table 2 – Untargeted Industries**

| NAICS  | NAICS Title   | NC Total Amputations (2021-2024) | Annual Average # of Amputations (2021-2024) | Annual Average # of Employers (2021-2024) | Annual Average # of Employees (2021-2024) | Amputations Rate per 10,000 Full-Time Employees |
|--------|---|----------------------------------|---|---|---|---|
| 221320 | Sewage Treatment Facilities                                       | 1                                | 0.25  | 14  | 374                                       | 6.68  |
| 236115 | New Single-Family Housing Construction (except For-Sale Builders) | 3                                | 0.75  | 5783                                      | 20,907                                    | 0.36  |
| 236116 | New Multifamily Housing Construction (except For-Sale Builders)   | 1                                | 0.25  | 110                                       | 960                                       | 2.60  |
| 237110 | Water and Sewer Line and Related Structures Construction          | 6                                | 1.50  | 527                                       | 7,454                                     | 2.01  |
| 237130 | Power and Communication Line and Related Structures Construction  | 5                                | 1.25  | 559                                       | 11,253                                    | 1.11  |
| 237210 | Land Subdivision  | 1                                | 0.25  | 185                                       | 744                                       | 3.36  |
| 237310 | Highway, Street, and Bridge Construction                          | 7                                | 1.75  | 393                                       | 13,749                                    | 1.27  |
| 237990 | Other Heavy and Civil Engineering Construction                    | 3                                | 0.75  | 342                                       | 2,701                                     | 2.78  |
| 238110 | Poured Concrete Foundation & Structure Contractors                | 7                                | 1.75  | *ND                                       | *ND                                       | N/A   |
| 238120 | Structural Steel & Precast Concrete Contractors                   | 4                                | 1.00  | *ND                                       | *ND                                       | N/A   |
| 238130 | Framing Contractors   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 238140 | Masonry Contractors   | 4                                | 1.00  | *ND                                       | *ND                                       | N/A   |
| 238150 | Glass and Glazing Contractors                                     | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 238170 | Siding Contractors  | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 238210 | Electrical Contractors & Other Wiring Installation Contractors    | 4                                | 1.00  | *ND                                       | *ND                                       | N/A   |

| NAICS  | NAICS Title                                      | NC Total Amputations (2021-2024) | Annual Average # of Amputations (2021-2024) | Annual Average # of Employers (2021-2024) | Annual Average # of Employees (2021-2024) | Amputations Rate per 10,000 Full-Time Employees |
|--------|--|----------------------------------|---|---|---|---|
| 238220 | Plumbing, Heating & Air-Conditioning Contractors | 11                               | 2.75  | *ND                                       | *ND                                       | N/A   |
| 238290 | Other Building Equipment Contractors             | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 238310 | Drywall and insulation contractors               | 3                                | 0.75  | *ND                                       | *ND                                       | N/A   |
| 238330 | Flooring contractors                             | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 238350 | Finish Carpentry Contractors                     | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 238910 | Site Preparation Contractors                     | 5                                | 1.25  | *ND                                       | *ND                                       | N/A   |
| 238990 | All Other Specialty Trade Contractors            | 3                                | 0.75  | *ND                                       | *ND                                       | N/A   |
| 311119 | Other Animal Food Manufacturing                  | 1                                | 0.25  | 39  | 1032                                      | 2.42  |
| 311211 | Flour Milling                                    | 2                                | 0.50  | 19  | 977                                       | 5.12  |
| 311230 | Breakfast Cereal Manufacturing                   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 311412 | Frozen Specialty Food Manufacturing              | 1                                | 0.25  | 12  | 399                                       | 6.27  |
| 311422 | Specialty Canning                                | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 311611 | Animal (except Poultry) Slaughtering             | 3                                | 0.75  | 77  | 8,124                                     | 0.92  |
| 311613 | Rendering and Meat Byproduct Processing          | 1                                | 0.25  | 9   | 739                                       | 3.38  |
| 311615 | Poultry Processing                               | 32                               | 8.00  | 44  | 22,751                                    | 3.52  |
| 311811 | Retail Bakeries                                  | 1                                | 0.25  | 346                                       | 2663                                      | 0.94  |
| 311812 | Commercial Bakeries                              | 5                                | 1.25  | 119                                       | 3,689                                     | 3.39  |
| 311821 | Cookie and Cracker Manufacturing                 | 2                                | 0.50  | 14  | 2411                                      | 2.07  |
| 311920 | Coffee and Tea Manufacturing                     | 1                                | 0.25  | 32  | 742                                       | 3.37  |
| 311991 | Perishable Prepared Food Manufacturing           | 1                                | 0.25  | 17  | 1959                                      | 1.28  |
| 311999 | All Other Miscellaneous Food Manufacturing       | 1                                | 0.25  | 31  | 1087                                      | 2.30  |
| 312210 | Tobacco Stemming and Redrying                    | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |

| NAICS  | NAICS Title   | NC Total Amputations (2021-2024) | Annual Average # of Amputations (2021-2024) | Annual Average # of Employers (2021-2024) | Annual Average # of Employees (2021-2024) | Amputations Rate per 10,000 Full-Time Employees |
|--------|---|----------------------------------|---|---|---|---|
| 313240 | Knit Fabric Mills   | 1                                | 0.25  | 49  | 2343                                      | 1.07  |
| 313241 | Weft Knit Fabric Mills  | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 313310 | Textile and Fabric Finishing Mills                            | 1                                | 0.25  | 108                                       | 4166                                      | 0.60  |
| 313312 | Textile and Fabric Finishing (except Broadwoven Fabric) Mills | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 313320 | Fabric Coating Mills  | 1                                | 0.25  | 12  | 593                                       | 4.22  |
| 314129 | Other Household Textile Product Mills                         | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 314911 | Textile Bag Mills   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 314991 | Rope, Cordage, and Twine Mills                                | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 314992 | Tire Cord and Tire Fabric Mills                               | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 314999 | All Other Miscellaneous Textile Product Mills                 | 1                                | 0.25  | 118                                       | 2118                                      | 1.18  |
| 315211 | Mens Cut and Sew Apparel Contractors                          | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 321211 | Hardwood Veneer and Plywood Manufacturing                     | 1                                | 0.25  | 27  | 986                                       | 2.54  |
| 321213 | Engineered Wood Member Manufacturing                          | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 322110 | Pulp Mills  | 1                                | 0.25  | 6   | 848                                       | 2.95  |
| 322121 | Paper (except Newsprint) Mills                                | 1                                | 0.25  | 19  | 2553                                      | 0.98  |
| 322214 | Fiber Can, Tube and Drum Manufacturing                        | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 322215 | Nonfolding Food Container Manufacturing                       | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 322220 | Paper Bag and Coated and Treated Paper Manufacturing          | 2                                | 0.50  | 49  | 3062                                      | 1.63  |

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|--------|---|----------------------------------|---|---|---|---|
| 322221 | Coated and Laminated Packaging Materials                    | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 322222 | Coated and Laminated Paper Manufacturing                    | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 322291 | Sanitary Paper Product Manufacturing                        | 2                                | 0.50  | 14  | 882                                       | 5.67  |
| 322299 | All Other Converted Paper Product Manufacturing             | 1                                | 0.25  | 13  | 1002                                      | 2.50  |
| 323110 | Commercial Lithographic Printing                            | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 323111 | Commercial Printing (except Screen and Books)               | 5                                | 1.25  | 607                                       | 8,555                                     | 1.46  |
| 325180 | Other Basic Inorganic Chemical Manufacturing                | 1                                | 0.25  | 30  | 980                                       | 2.55  |
| 325188 | All Other Basic Inorganic Chemicals                         | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 325211 | Plastics Material and Resin Manufacturing                   | 1                                | 0.25  | 56  | 1685                                      | 1.48  |
| 325220 | Artificial and Synthetic Fibers and Filaments Manufacturing | 1                                | 0.25  | 28  | 2603                                      | 0.96  |
| 325222 | Noncellulosic Organic Fiber Manufacturing                   | 3                                | 0.75  | *ND                                       | *ND                                       | N/A   |
| 325311 | Nitrogenous Fertilizer Manufacturing                        | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 325312 | Phosphatic Fertilizer Manufacturing                         | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 325314 | Fertilizer (Mixing Only) Manufacturing                      | 1                                | 0.25  | 5   | 146                                       | 17.12   |
| 325412 | Pharmaceutical Preparation Manufacturing                    | 3                                | 0.75  | 106                                       | 18,905                                    | 0.40  |

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|--------|---|----------------------------------|---|---|---|---|
| 325414 | Biological Product (except Diagnostic) Manufacturing                        | 1                                | 0.25  | 24  | 5617                                      | 0.45  |
| 325510 | Paint and Coating Manufacturing   | 2                                | 0.50  | 37  | 1650                                      | 3.03  |
| 325520 | Adhesive Manufacturing  | 2                                | 0.50  | 18  | 862                                       | 5.80  |
| 325620 | Toilet Preparation Manufacturing  | 1                                | 0.25  | 29  | 2495                                      | 1.00  |
| 325910 | Printing Ink Manufacturing  | 1                                | 0.25  | 22  | 578                                       | 4.33  |
| 326111 | Plastics Bag and Pouch Manufacturing  | 1                                | 0.25  | 10  | 402                                       | 6.22  |
| 326121 | Unlaminated Plastics Profile Shape Manufacturing                            | 1                                | 0.25  | 15  | 721                                       | 3.47  |
| 326130 | Laminated Plastics Plate, Sheet (except Packaging), and Shape Manufacturing | 1                                | 0.25  | 14  | 935                                       | 2.67  |
| 326150 | Urethane and Other Foam Product (except Polystyrene) Manufacturing          | 3                                | 0.75  | 59  | 4,010                                     | 1.87  |
| 326211 | Tire Manufacturing (except Retreading)                                      | 7                                | 1.75  | 10  | 4,837                                     | 3.62  |
| 327120 | Clay Building Material and Refractories Manufacturing                       | 1                                | 0.25  | 27  | 1313                                      | 1.90  |
| 327121 | Brick and Structural Clay Tile Manufacturing                                | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 327212 | Other Pressed and Blown Glass and Glassware Manufacturing                   | 1                                | 0.25  | 28  | 2740                                      | 0.91  |
| 327320 | Ready-Mix Concrete Manufacturing  | 2                                | 0.50  | 192                                       | 3481                                      | 1.44  |
| 327331 | Concrete Block and Brick Manufacturing                                      | 1                                | 0.25  | 27  | 1153                                      | 2.17  |
| 327332 | Concrete Pipe Manufacturing   | 1                                | 0.25  | 19  | 412                                       | 6.07  |

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|--------|--|----------------------------------|---|---|---|---|
| 331111 | Iron and Steel Mills   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 331422 | Copper Wire (except Mechanical) Drawing                        | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 331511 | Iron Foundries   | 1                                | 0.25  | 7   | 904                                       | 2.77  |
| 331521 | Aluminum Die-Casting Foundries                                 | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 332212 | Hand and Edge Tool Manufacturing                               | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 332312 | Fabricated Structural Metal Manufacturing                      | 5                                | 1.25  | 139                                       | 3,664                                     | 3.41  |
| 332313 | Plate Work Manufacturing                                       | 2                                | 0.50  | 59  | 1942                                      | 2.57  |
| 332323 | Ornamental and Architectural Metal Work Manufacturing          | 2                                | 0.50  | 77  | 803                                       | 6.23  |
| 332431 | Metal Can Manufacturing  | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 332611 | Spring (Heavy Gauge) Manufacturing                             | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 332612 | Spring (Light Gauge) Manufacturing                             | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 332613 | Spring Manufacturing   | 1                                | 0.25  | 12  | 327                                       | 7.65  |
| 332710 | Machine Shops  | 3                                | 0.75  | 556                                       | 6,381                                     | 1.18  |
| 332911 | Industrial Valve Manufacturing                                 | 2                                | 0.50  | 22  | 1316                                      | 3.80  |
| 332912 | Fluid Power Valve and Hose Fitting Manufacturing               | 1                                | 0.25  | 16  | 836                                       | 2.99  |
| 332919 | Other Metal Valve and Pipe Fitting Manufacturing               | 1                                | 0.25  | 8   | 715                                       | 3.50  |
| 332996 | Fabricated Pipe and Pipe Fitting Manufacturing                 | 1                                | 0.25  | 24  | 754                                       | 3.32  |
| 332999 | All Other Miscellaneous Fabricated Metal Product Manufacturing | 2                                | 0.50  | 62  | 1438                                      | 3.48  |

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|--------|---|----------------------------------|---|---|---|---|
| 333112 | Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing  | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 333120 | Construction Machinery Manufacturing  | 7                                | 1.75  | 40  | 6,151                                     | 2.85  |
| 333411 | Air Purification Equipment Manufacturing  | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 333415 | Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing | 1                                | 0.25  | 46  | 3275                                      | 0.76  |
| 333514 | Special Die and Tool, Die Set, Jig, and Fixture Manufacturing   | 1                                | 0.25  | 37  | 620                                       | 4.03  |
| 333515 | Cutting Tool and Machine Tool Accessory Manufacturing   | 2                                | 0.50  | 29  | 996                                       | 5.02  |
| 333611 | Turbine and Turbine Generator Set Units Manufacturing   | 1                                | 0.25  | 14  | 2624                                      | 0.95  |
| 333612 | Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing  | 1                                | 0.25  | 9   | 375                                       | 6.67  |
| 333921 | Elevator and Moving Stairway Manufacturing  | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 333994 | Industrial Process Furnace and Oven Manufacturing   | 1                                | 0.25  | 5   | 74  | 33.78   |
| 333995 | Fluid Power Cylinder and Actuator Manufacturing   | 2                                | 0.50  | 6   | 459                                       | 10.89   |

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|--------------|--|---|--|--|--|--|
| 333996       | Fluid Power Pump and Motor Manufacturing                       | 1                                       | 0.25   | 6  | 290  | 8.62   |
| 333999       | Miscellaneous General Purpose Machinery                        | 1                                       | 0.25   | 41   | 1345   | 1.86   |
| 334419       | Other Electronic Component Manufacturing                       | 1                                       | 0.25   | 23   | 447  | 5.59   |
| 334514       | Totalizing Fluid Meter and Counting Device Manufacturing       | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 335228       | Other Major Household Appliance Manufacturing                  | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 335313       | Switchgear and Switchboard Apparatus Manufacturing             | 1                                       | 0.25   | 22   | 1452   | 1.72   |
| 335314       | Relay and Industrial Control Manufacturing                     | 1                                       | 0.25   | 30   | 4144   | 0.60   |
| 335931       | Current-Carrying Wiring Device Manufacturing                   | 1                                       | 0.25   | 28   | 2591   | 0.96   |
| 336111       | Automobile Manufacturing                                       | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 336120       | Heavy Duty Truck Manufacturing                                 | 5                                       | 1.25   | 5  | 4,406  | 2.84   |
| 336211       | Motor Vehicle Body Manufacturing                               | 4                                       | 1.00   | 39   | 3,893  | 2.57   |
| 336300       | Motor Vehicle Parts Manufacturing                              | 13                                      | 3.25   | 172  | 16,107   | 2.02   |
| 336350       | Motor Vehicle Transmission and Power Train Parts Manufacturing | 2                                       | 0.50   | 27   | 5118   | 0.98   |
| 336360       | Motor Vehicle Seating and Interior Trim Manufacturing          | 2                                       | 0.50   | 13   | 259  | 19.31  |
| 336370       | Motor Vehicle Metal Stamping                                   | 2                                       | 0.50   | 11   | 265  | 18.87  |

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|--------|--|----------------------------------|---|---|---|---|
| 336399 | All Other Motor Vehicle Parts Manufacturing                    | 7                                | 1.75  | *ND                                       | *ND                                       | N/A   |
| 336413 | Other Aircraft Parts and Auxiliary Equipment Manufacturing     | 2                                | 0.50  | 13  | 2551                                      | 1.96  |
| 336612 | Boat Building  | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 337110 | Wood Kitchen Cabinet and Countertop Manufacturing              | 3                                | 0.75  | 252                                       | 4,719                                     | 1.59  |
| 337121 | Upholstered Household Furniture Manufacturing                  | 9                                | 2.25  | 186                                       | 16,558                                    | 1.36  |
| 337124 | Metal Household Furniture Manufacturing                        | 2                                | 0.50  | 9   | 259                                       | 19.31   |
| 337212 | Custom Architectural Woodwork and Millwork Manufacturing       | 1                                | 0.25  | 86  | 1015                                      | 2.46  |
| 339111 | Laboratory Apparatus and Furniture                             | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 339991 | Gasket, Packing, and Sealing Device Manufacturing              | 1                                | 0.25  | 11  | 415                                       | 6.02  |
| 339992 | Musical Instrument Manufacturing                               | 1                                | 0.25  | 20  | 256                                       | 9.77  |
| 339993 | Fastener, Button, Needle, and Pin Manufacturing                | 1                                | 0.25  | 6   | 456                                       | 5.48  |
| 423110 | Automobile and Other Motor Vehicle Merchant Wholesalers        | 1                                | 0.25  | 259                                       | 3872                                      | 0.65  |
| 423220 | Home Furnishing Merchant Wholesalers                           | 1                                | 0.25  | 284                                       | 2445                                      | 1.02  |
| 423310 | Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers | 5                                | 1.25  | 419                                       | 5,407                                     | 2.31  |

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|--------------|---|---|--|--|--|--|
| 423330       | Roofing, Siding, and Insulation Material Merchant Wholesalers                                   | 2                                       | 0.50   | 150  | 1544   | 3.24   |
| 423390       | Other Construction Material Merchant Wholesalers  | 2                                       | 0.50   | 240  | 2133   | 2.34   |
| 423420       | Office Equipment Merchant Wholesalers   | 1                                       | 0.25   | 194  | 2195   | 1.14   |
| 423440       | Other Commercial Equipment Merchant Wholesalers   | 1                                       | 0.25   | 229  | 1149   | 2.18   |
| 423450       | Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers                       | 1                                       | 0.25   | 1606   | 11594  | 0.22   |
| 423490       | Other Professional Equipment and Supplies Merchant Wholesalers                                  | 1                                       | 0.25   | 191  | 1536   | 1.63   |
| 423510       | Metal Service Centers and Other Metal Merchant Wholesalers                                      | 3                                       | 0.75   | 411  | 3,190  | 2.35   |
| 423610       | Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers | 2                                       | 0.50   | 785  | 6021   | 0.83   |
| 423720       | Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers                    | 1                                       | 0.25   | 441  | 4120   | 0.61   |
| 423810       | Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers          | 1                                       | 0.25   | 160  | 3440   | 0.73   |

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|--------------|--|---|--|--|--|--|
| 423830       | Industrial Machinery and Equipment Merchant Wholesalers            | 4                                       | 1.00   | 1826   | 14,515   | 0.69   |
| 423840       | Industrial Supplies Merchant Wholesalers                           | 2                                       | 0.50   | 565  | 3645   | 1.37   |
| 423920       | Toy and Hobby Goods and Supplies Merchant Wholesalers              | 1                                       | 0.25   | 93   | 280  | 8.93   |
| 423990       | Other Miscellaneous Durable Goods Merchant Wholesalers             | 1                                       | 0.25   | 403  | 2414   | 1.04   |
| 424130       | Industrial and Personal Service Paper Merchant Wholesalers         | 1                                       | 0.25   | 191  | 1979   | 1.26   |
| 424310       | Piece Goods, Notions, and Other Dry Goods Merchant Wholesalers     | 1                                       | 0.25   | 241  | 1894   | 1.32   |
| 424420       | Packaged Frozen Food Merchant Wholesalers                          | 1                                       | 0.25   | 97   | 823  | 3.04   |
| 424450       | Confectionery Merchant Wholesalers                                 | 1                                       | 0.25   | 166  | 1974   | 1.27   |
| 424480       | Fresh Fruit and Vegetable Merchant Wholesalers                     | 1                                       | 0.25   | 139  | 1555   | 1.61   |
| 424490       | Other Grocery and Related Products Merchant Wholesalers            | 2                                       | 0.50   | 650  | 6657   | 0.75   |
| 424510       | Grain and Field Bean Merchant Wholesalers                          | 2                                       | 0.50   | 25   | 212  | 23.58  |
| 424610       | Plastics Materials and Basic Forms and Shapes Merchant Wholesalers | 1                                       | 0.25   | 213  | 1563   | 1.60   |

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|--------|--|----------------------------------|---|---|---|---|
| 424720 | Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals) | 1                                | 0.25  | 171                                       | 1427                                      | 1.75  |
| 424910 | Farm Supplies Merchant Wholesalers   | 4                                | 1.00  | 425                                       | 3,437                                     | 2.91  |
| 425120 | Wholesale Trade Agents and Brokers   | 1                                | 0.25  | 3261                                      | 17594                                     | 0.14  |
| 441110 | New Car Dealers  | 4                                | 1.00  | 709                                       | 36,049                                    | 0.28  |
| 441228 | Motorcycle & other motor vehicle dealers   | 1                                | 0.25  | 279                                       | 2427                                      | 1.03  |
| 441310 | Automotive Parts and Accessories Stores  | 2                                | 0.50  | 1435                                      | 16406                                     | 0.30  |
| 441320 | Tire Dealers   | 1                                | 0.25  | 861                                       | 6947                                      | 0.36  |
| 442110 | Furniture Stores   | 2                                | 0.50  | 961                                       | 8856                                      | 0.56  |
| 442299 | All Other Home Furnishing Stores   | 1                                | 0.25  | 350                                       | 5121                                      | 0.49  |
| 443112 | Radio, TV & Other Electronics Stores   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 444110 | Home Centers   | 1                                | 0.25  | 340                                       | 30302                                     | 0.08  |
| 444190 | Other Building Material Dealers  | 8                                | 2.00  | 750                                       | 8,290                                     | 2.41  |
| 445110 | Supermarkets and Other Grocery Retailers (except Convenience Retailers)                    | 11                               | 2.75  | 1916                                      | 94,937                                    | 0.29  |
| 445131 | Convenience Retailers  | 1                                | 0.25  | 721                                       | 2806                                      | 0.89  |
| 447190 | Other Gasoline Stations  | 1                                | 0.25  | 252                                       | 2142                                      | 1.17  |
| 452111 | Department Stores, except Discount Department Stores                                       | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 452990 | All Other General Merchandise  | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 481111 | Scheduled Passenger Air Transportation   | 2                                | 0.50  | 41  | 16449                                     | 0.30  |

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|--------|--|----------------------------------|---|---|---|---|
| 484121 | General Freight Trucking, Long-Distance, Truckload                 | 1                                | 0.25  | 2571                                      | 17455                                     | 0.14  |
| 484230 | Specialized Freight (except Used Goods) Trucking, Long-Distance    | 1                                | 0.25  | 226                                       | 2797                                      | 0.89  |
| 485210 | Interurban and Rural Bus Transportation                            | 1                                | 0.25  | 12  | 1107                                      | 2.26  |
| 486210 | Pipeline Transportation of Natural Gas                             | 1                                | 0.25  | 10  | 101                                       | 24.75   |
| 488510 | Freight Transportation Arrangement                                 | 1                                | 0.25  | 631                                       | 5779                                      | 0.43  |
| 488991 | Packing and Crating  | 1                                | 0.25  | 54  | 1363                                      | 1.83  |
| 492110 | Couriers and Express Delivery Services                             | 4                                | 1.00  | 513                                       | 29,100                                    | 0.34  |
| 493110 | General Warehousing and Storage                                    | 5                                | 1.25  | 481                                       | 52,572                                    | 0.24  |
| 493120 | Refrigerated Warehousing and Storage                               | 1                                | 0.25  | 28  | 1018                                      | 2.46  |
| 517311 | Wired Telecommunications Carriers                                  | 1                                | 0.25  | 617                                       | 18512                                     | 0.14  |
| 531110 | Lessors of Residential Buildings and Dwellings                     | 1                                | 0.25  | 1456                                      | 6731                                      | 0.37  |
| 531210 | Offices of Real Estate Agents and Brokers                          | 1                                | 0.25  | 7825                                      | 17029                                     | 0.15  |
| 532420 | Office Machinery and Equipment Rental and Leasing                  | 1                                | 0.25  | 26  | 128                                       | 19.53   |
| 541330 | Engineering Services   | 5                                | 1.25  | *ND                                       | *ND                                       | N/A   |
| 541611 | Administrative Management & General Management Consulting Services | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |

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|--------------|--|---|--|--|--|--|
| 541870       | Advertising Material Distribution Services                       | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 561311       | Employment Placement Agencies                                    | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 561320       | Temporary Help Services  | 4                                       | 1.00   | *ND  | *ND  | N/A  |
| 561621       | Security Systems Services (except Locksmiths)                    | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 561720       | Janitorial Services  | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 561730       | Landscaping Services   | 8                                       | 2.00   | *ND  | *ND  | N/A  |
| 561790       | Other Services to Buildings and Dwellings                        | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 561990       | All Other Support Services                                       | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 562111       | Solid Waste Collection   | 4                                       | 1.00   | *ND  | *ND  | N/A  |
| 562910       | Remediation Services   | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 562920       | Materials Recovery Facilities                                    | 2                                       | 0.50   | *ND  | *ND  | N/A  |
| 611310       | Colleges, Universities, and Professional Schools                 | 5                                       | 1.25   | *ND  | *ND  | N/A  |
| 621111       | Office of Physicians (except Mental Health Specialists)          | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 621910       | Ambulance Services   | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 622110       | General Medical and Surgical Hospitals                           | 2                                       | 0.50   | *ND  | *ND  | N/A  |
| 623110       | Nursing Care Facilities (Skilled Nursing Facilities)             | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 623210       | Residential Intellectual and Developmental Disability Facilities | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 623311       | Continuing Care Retirement Communities                           | 1                                       | 0.25   | *ND  | *ND  | N/A  |
| 713110       | Amusement and Theme Parks  | 2                                       | 0.50   | *ND  | *ND  | N/A  |

| NAICS  | NAICS Title   | NC Total Amputations (2021-2024) | Annual Average # of Amputations (2021-2024) | Annual Average # of Employers (2021-2024) | Annual Average # of Employees (2021-2024) | Amputations Rate per 10,000 Full-Time Employees |
|--------|---|----------------------------------|---|---|---|---|
| 713910 | Golf Courses and Country Clubs  | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 722110 | Full-Service Restaurants  | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 722511 | Full-Service Restaurants  | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 811111 | General Automotive Repair   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 811121 | Automotive Body, Paint, and Interior Repair and Maintenance   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 811192 | Car Washes  | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 811198 | All Other Automotive Repair and Maintenance   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 811219 | Other Electronic Equipment Repair   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 811310 | Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance | 3                                | 0.75  | *ND                                       | *ND                                       | N/A   |
| 811412 | Appliance Repair and Maintenance  | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 812332 | Industrial Launderers   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 921120 | Legislative Bodies  | 8                                | 2.00  | *ND                                       | *ND                                       | N/A   |
| 921140 | Executive and Legislative Offices, Combined   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 921190 | Other General Government Support  | 2                                | 0.50  | *ND                                       | *ND                                       | N/A   |
| 922120 | Police Protection   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |
| 924110 | Administration of Air and Water Resource and Solid Waste Management Programs                                | 4                                | 1.00  | *ND                                       | *ND                                       | N/A   |
| 924120 | Administration of Conservation Programs   | 1                                | 0.25  | *ND                                       | *ND                                       | N/A   |

| <b>NAICS</b> | <b>NAICS Title</b>                                       | <b>NC Total Amputations (2021-2024)</b> | <b>Annual Average # of Amputations (2021-2024)</b> | <b>Annual Average # of Employers (2021-2024)</b> | <b>Annual Average # of Employees (2021-2024)</b> | <b>Amputations Rate per 10,000 Full-Time Employees</b> |
|--------------|--|---|--|--|--|--|
| 926120       | Regulation and Administration of Transportation Programs | 2                                       | 0.50   | *ND  | *ND  | N/A  |
| 926140       | Regulation of Agricultural Marketing and Commodities     | 2                                       | 0.50   | *ND  | *ND  | N/A  |

## **Appendix B: Examples of Machinery and Equipment That Can Cause Amputations**

**Note:** This list is not inclusive of all machinery/equipment that can cause amputations.

1. Bailers
2. Aerial Lift Platforms
3. Benders, Rollers and Shapers
4. Cranes (Unspecified)
5. Casting Machinery
6. Conveyors – Belt, Chain, Live Roller, and Auger Screw
7. Heating and Cooking Machinery and Appliances
8. Drills – Stationary
9. Extruding Machinery
10. Food and Beverage Processing
11. Grinders, Abraders, and Meat Grinders
12. Material and Personnel Handling Machinery
13. Metal, Woodworking, and Special Material Machinery
14. Milling Machines
15. Mowing Machinery
16. Mixers, Blenders, Whippers, Slicers, and Food Beverage Processing Equipment
17. Packing, Wrapping, Bundling Machinery
18. Plastic Injection Molding Machinery
19. Press Brakes (All Types)
20. Presses (Mechanical, Hydraulic, and Pneumatic)
21. Printing Presses
22. Sawing Machinery – (Band, Table, Radial Arm Saws)
23. Shears (All Types)

### Appendix C: Related ANSI /ASME Standards

**Note:** This appendix is not an inclusive list of all ANSI and ASME standards that are associated with hazardous machinery and equipment.

1. ANSI B11.1 – Mechanical Power Presses
2. ANSI B11.2 – Hydraulic Power Presses
3. ANSI B11.3 – Power Press Brakes
4. ANSI B11.4 – Shears
5. ANSI B11.5 – Ironworkers
6. ANSI B11.6 – Lathes
7. ANSI B11.7 – Cold Headers and Cold Formers
8. ANSI B11.8 – Drilling, Milling, and Boring Machines
9. ANSI B11.9 – Grinding Machinery
10. ANSI B11.10 – Metal Sawing Machines
11. ANSI B11.11 – Gear Cutting Machines
12. ANSI B11.12 – Roll-Forming and Roll-Bending Machines
13. ANSI B11.14 – Coil-Slitting Machines
14. ANSI B11.15 – Pipe, Tube, and Shape Bending Machines
15. ANSI B11.16 – Metal Powder Compacting Presses
16. ANSI B11.17 – Horizontal Hydraulic Extrusion Presses
17. ANSI B11.18 – Machinery and Machine Systems for Processing Strip, Sheet, or Plate From Coiled Configuration
18. ANSI B11.19 – Safeguarding When Referenced by the Other B11 Machine Tool Safety Standards
19. ANSI B5.37 – External Cylindrical Grinding Machines (Centerless)
20. ANSI B5.42 – External Cylindrical Grinding Machines (Universal)
21. ANSI B65.1 – Printing Press Systems
22. ANSI B65.2 – Safety Standard – Binding and Finishing Systems
23. ANSI B65.3 – Safety Standard for Guillotine Paper Cutters
24. ANSI B7.1 – Use, Care, and Protection of Abrasive Wheels
25. ANSI B151.5 – Plastic Film and Sheet Winding Equipment
26. ANSI B151.20 – Plastic Sheet Production Machinery
27. ANSI B155.1 – Packaging Machinery and Packaging-Related Converting Machinery
28. ANSI B177.1 – Three Roller Printing Ink Mills
29. ANSI O1.1 – Woodworking Machinery
30. ANSI Z244.1 – Control of Hazardous Energy – Lockout/Tagout and Alternative Methods
31. ASME B5.52M – Mechanical Power Presses, General Purpose Single Point
32. ASME B15.1 – Mechanical Power Transmission Apparatus
33. ASME B15.1A – Addenda to B15.1
34. ASME BL5.1B – Addenda to B15.1
35. ASME B20.1 – Conveyors and Related Equipment, with Interpretations A and B
36. ASME B20.1A and B20.1B – Addenda to B20.1
37. ASME/CEMA 350 – Screw Conveyors
38. ASME/CEMA 401 – Unit Handling Conveyors – Roller Conveyors – Non-Powered
39. ASME/CEMA 402 – Unit Handling Conveyors – Belt Conveyors
40. ASME/CEMA 403 – Unit Handling Conveyors – Belt Driven Live Roller Conveyors
41. ASME/CEMA 404 – Unit Handling Conveyors – Chain Driven Live Roller Conveyors
42. ASME/CEMA 405 – Packaging Handling Conveyors – Slant Conveyors