(b) Grounding circuits, other than by means of the structure of the vessel on which the tool is being used, shall be checked to ensure that the circuit between the ground and the grounded power conductor has resistance which is low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.

(c) Portable electric tools which are held in the hand shall be equipped with switches of a type which must be manually held in the closed position.

(d) Worn or frayed electric cables shall not be used.

(e) The employer shall notify the officer in charge of the vessel before using electric power tools operated with the vessel’s current.

§ 1915.133 Hand tools.

The provisions of this section shall apply to ship repairing, shipbuilding and shipbreaking.

(a) Employers shall not issue or permit the use of unsafe hand tools.

(b) Wrenches, including crescent, pipe, end and socket wrenches, shall not be used when jaws are sprung to the point that slippage occurs.

(c) Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.

(d) The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

§ 1915.134 Abrasive wheels.

This section shall apply to ship repairing, shipbuilding and shipbreaking.

(a) Floor stand and bench mounted abrasive wheels used for external grinding shall be provided with safety guards (protection hoods). The maximum angular exposure of the grinding wheel periphery and sides shall be not more than 90 degrees, except that when work requires contact with the wheel below the horizontal plane of the spindle, the angular exposure shall not exceed 125 degrees. In either case the exposure shall begin not more than 65 degrees above the horizontal plane of the spindle. Safety guards shall be strong enough to withstand the effect of a bursting wheel.

(b) Floor and bench mounted grinders shall be provided with work rests which are rigidly supported and readily adjustable. Such work rests shall be kept a distance not to exceed ¾ inch from the surface of the wheel.

(c) Cup type wheels used for external grinding shall be protected by either a revolving cup guard or a band type guard in accordance with the provisions of the United States of America Standard Safety Code for the Use, Care, and Protection of Abrasive Wheels, B7.1–1964. All other portable abrasive wheels used for external grinding shall be provided with safety guards (protection hoods) meeting the requirements of paragraph (e) of this section, except as follows:

(1) When the work location makes it impossible, in which case a wheel equipped with safety flanges as described in paragraph (f) of this section shall be used.

(2) When wheels 2 inches or less in diameter which are securely mounted on the end of a steel mandrel are used.

(d) Portable abrasive wheels used for internal grinding shall be provided with safety flanges (protection flanges) meeting the requirements of paragraph (f) of this section, except as follows:

(1) When wheels 2 inches or less in diameter which are securely mounted on the end of a steel mandrel are used.

(2) If the wheel is entirely within the work being ground while in use.

(e) When safety guards are required, they shall be so mounted as to maintain proper alignment with the wheel, and the guard and its fastenings shall be of sufficient strength to retain fragments of the wheel in case of accidental breakage. The maximum angular exposure of the grinding wheel periphery and sides shall not exceed 180 degrees.

(f) When safety flanges are required, they shall be used only with wheels designed to fit the flanges. Only safety flanges of a type and design and properly assembled so as to insure that the pieces of the wheel will be retained in case of accidental breakage shall be used.

(g) All abrasive wheels shall be closely inspected and ring tested before mounting to ensure that they are free from cracks or defects.

(b) Grinding wheels shall fit freely on the spindle and shall not be forced on.
§ 1915.135 Powder actuated fastening tools.

(a) The section shall apply to ship repairing and shipbuilding only.

(b) General precautions. (1) Powder actuated fastening tools shall be tested each day before loading to ensure that the safety devices are in proper working condition. Any tool found not to be in proper working order shall be immediately removed from service until repairs are made.

(2) Powder actuated fastening tools shall not be used in an explosive or flammable atmosphere.

(3) All tools shall be used with the type of shield or muzzle guard appropriate for a particular use.

(4) Fasteners shall not be driven into very hard or brittle materials such as cast iron, glazed tile, surface hardened steel, glass block, live rock, face brick or hollow tile.

(5) Fasteners shall not be driven into soft materials unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the opposite side.

(6) Unless a special guard, fixture or jig is used, fasteners shall not be driven directly into materials such as brick or concrete within 3 inches of the unsupported edge or corner, or into steel surfaces within ½ inch of the unsupported edge or corner. When fastening other material, such as 2x4 inch lumber to a concrete surface, fasteners of greater than ⅜ inch shank diameter shall not be used and fasteners shall not be driven within 2 inches of the unsupported edge or corner of the work surface.

(7) Fasteners shall not be driven through existing holes unless a positive guide is used to secure accurate alignment.

(8) No attempt shall be made to drive a fastener into a spalled area caused by an unsatisfactory fastening.

(9) Employees using powder actuated fastening tools shall be protected by personal protective equipment in accordance with the requirements of subpart I of this part.

(c) Instruction of operators. Before employees are permitted to use powder actuated tools, they shall have been thoroughly instructed by a competent person with respect to the requirements of paragraph (b) of this section and the safe use of such tools as follows:

(1) Before using a tool, the operator shall inspect it to determine that it is clean, that all moving parts operate freely and that the barrel is free from obstructions.

(2) When a tool develops a defect during use, the operator shall immediately cease to use it and shall notify his supervisor.

(3) Tools shall not be loaded until just prior to the intended firing time and the tool shall not be left unattended while loaded.

(4) The tool, whether loaded or empty, shall not be pointed at any person, and hands shall be kept clear of the open barrel end.

(5) In case of a misfire, the operator shall hold the tool in the operating position for at least 15 seconds and shall continue to hold the muzzle against the work surface during disassembly or opening of the tool and removal of the powder load.

(6) Neither tools nor powder charges shall be left unattended in places where they would be available to unauthorized persons.

§ 1915.136 Internal combustion engines, other than ship’s equipment.

The provisions of this section shall apply to ship repairing, shipbuilding and shipbreaking.