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The State Department of Health of the State of New Jersey pursuant to the authority vested in it by Chapter 177, Laws of 1947, hereby establishes the following Rules and Regulations for the administration of Chapter VI, Regulation 1 of the State Sanitary Code, adopted by the Public Health Council on December 15, 1952.

STATE DEPARTMENT OF HEALTH OF THE STATE OF NEW JERSEY

By:

Daniel Bergsma

Daniel Bergsma, M.D., M.P.H.
State Commissioner of Health

Effective Date: January 15, 1953

Filed with the Secretary of State: December 31, 1952

REGULATIONS CONCERNING FLUOROSCOPIC SHOE-FITTING MACHINES

DEFINITIONS

Lead equivalent. The thickness of lead affording the same protection under the specified conditions, as the material in question.

Milliroentgen (mr). One one-thousandth of a roentgen.

Primary radiation. Radiation coming directly from the tube target.

Stray radiation. Radiation not serving any useful purpose. It includes direct radiation and secondary radiation.

Useful beam. That part of the primary radiation which passes through the aperture, cone, or other collimator.

Roentgen (r). The International Unit of quantity or dose of X-rays or gamma rays. That quantity of x- or gamma radiation such that the associated corpuscular emission per 0.001293 g. of air, produces, in air, ions carrying 1 e.s.u. of quantity of electricity of either sign.

e.s.u. The electrostatic unit (e.s.u.) of charge which is repelled with a force of 1 dyne by an equal charge 1 centimeter distant.

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REGULATION 1. - Fluoroscopic shoe-fitting machines

All fluoroscopic shoe-fitting machines shall be reported, installed, operated and comply in all respects with regulations two through seven below.

REGULATION 2. - Reporting of installations

(a) Owners of fluoroscopic shoe-fitting machines installed in this state prior to January 15, 1953, shall report in writing the location, model, type of installation, and intended further use of such machines to the Board of Health of the municipality or district wherein the particular machine is located and to the State Department of Health within 30 days after the aforementioned date.

(b) Owners of fluoroscopic shoe-fitting machines installed in this state on or after January 15, 1953 and prior to June 1, 1953, shall report in writing the location, model, type of installation, and intended further use of such machines to the Board of Health of the municipality or district wherein the particular machine is located and to the State Department of Health within 30 days after said installation.

(c) Owners desiring to install or reinstall machines on or after June 1, 1953 shall report in writing the location, model, type of installation and proposed date of installation of such machines to the Board of Health of the municipality or district wherein the proposed installations are to be made and to the State Department of Health at least two weeks prior to the proposed installation date.

REGULATION 3. - Exposure to useful beam of primary radiation

(a) Exposure to the useful beam measured on the base of the foot opening by fluoroscopic shoe-fitting machines installed after June 1, 1953, in this state shall not exceed:

- (1) 0.7 roentgen per fitting of children's shoes.
- (2) 0.8 roentgen per fitting of women's shoes.
- (3) 1.0 roentgen per fitting of men's shoes.

(b) Exposure to the useful beam measured on the base of foot openings of all other machines shall not exceed two roentgens per fitting, regardless of the sex or age of the customer.

REGULATION 4. - Filtration of X-ray beams

The floor of foot openings in machines shall be covered with a sheet of aluminum at least 1mm. thick and of dimensions equal to or greater than the floor. This aluminum filter shall be protected from wear by a layer of other material and shall be installed in such a fashion that its thickness can conveniently be determined.

REGULATION 5. - Control of primary radiation

(a) Machines shall be equipped with an automatic timer that will prevent operation of the X-ray tube from exceeding the exposures specified in Regulation 3 of this Chapter.

(b) Machines equipped to regulate exposures at the three intensities listed in Regulation 3 of this Chapter shall have posted thereon the words, CHILDREN, WOMEN AND MEN to designate the lowest, intermediate and greatest intensities respectively.

(c) Only authorized sales persons shall be permitted to operate shoe-fitting fluoroscopic machines. The starting mechanism shall be so designed and located as to prevent operation by customers.

(d) Fluoroscopic viewing screens shall be covered with leaded glass having a lead equivalent of at least 1.5 millimeters for 65 kilovolts peak.

(e) Total exposure time for any one customer in any one day shall be restricted to 3 fittings.

(f) Operators shall not use their feet or hands for demonstrating X-ray fluoroscopy. Children's feet shall not be held in position by any person while the machine is in operation.

(g) Customers shall be required to wear shoes on both feet during the time of a fluoroscopic examination.

(h) Customers should be questioned regarding dates and number of previous fluoroscopic shoe-fittings and may not be granted such fittings in excess of 12 per year.

(i) Sales persons shall operate machines for their customers only.

(j) Known defects of machines shall be reported to the owner thereof or the person in charge of the premises wherein such machine has been installed.

REGULATION 6. - Control of stray radiation

(a) X-ray tubes shall be so shielded and cabinets so constructed that stray radiation is reduced to less than a rate of 12-1/2 milliroentgens per hour at all positions within 6 inches of the cabinet and at viewing ports at eye level, except at the foot opening.

(b) Foot openings in cabinets shall be so constructed and shielded that stray radiation at a distance of 10 feet forward shall not exceed a rate of 12-1/2 milliroentgens per hour.

(c) Machines shall be located as far as possible from frequently occupied areas.

Employees who work in one location only, such as cashiers and wrappers, shall not be stationed in front of the foot opening. Employees who do not spend their time in one location, such as salesmen, shall not regularly perform duties within ten feet in front of the foot opening.

REGULATION 7. - Warning and instruction signs

(a) A warning placard shall be conspicuously posted as high as practicable on at least two sides of each fluoroscopic shoe-fitting machine, one of which shall be in plain view of the public at all times and the other on the foot opening side. These placards shall be readily legible at all times and shall clearly be printed on cards the minimum size of which shall be five inches by nine inches. The color of all letters shall be "red" and the minimum size of lettering shall be as follows:

- (1) The word "WARNING" in capital letters no less than 0.5 inches high.
- (2) The remainder of the statement in capital letters no less than .25 inches high.
- (3) The placard shall be worded as follows:

W A R N I N G

EXPOSURE TO X-RAY MAY BE HARMFUL

CUSTOMERS MUST NOT OPERATE THIS MACHINE

LIMIT FOR EACH CUSTOMER

3 FITTINGS PER DAY

YEARLY TOTAL NOT TO EXCEED 12 FITTINGS