



**DEPARTMENT OF LABOR AND ECONOMIC OPPORTUNITY**  
**GENERAL INDUSTRY STANDARD**

Filed with the Secretary of State on **July 30, 2002**

These rules take effect 7 days after filing with the Secretary of State

(By authority conferred on the director of the department of consumer and industry services by sections 14 and 24 of 1974 PA 154, MCL 408.1014 and 408.1024, and Executive Reorganization Orders Nos. 1996-1 and 1996-2, MCL 330.3101 and 445.2001)

R 325.60701, R 325.60702, R 325.60703, and R 325.60704 are added to the Michigan Administrative Code as follows:

**PART 382. NONIONIZING RADIATION**

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**R 325.60701 Electromagnetic radiation; scope of rule.**

**Rule 1.** (1) This rule applies to all radiations originating from radio stations, radar equipment, and other possible sources of electromagnetic radiation such as used for communication, radio navigation, and industrial and scientific purposes. This rule does not apply to the deliberate exposure of patients by, or under the direction of, practitioners of the healing arts.

(2) This rule replaces O.H. rule 2420.

**R 325.60702 Definitions.**

**Rule 2.** As used in these rules:

(a) "Electromagnetic radiation" means that portion of the spectrum commonly defined as the radio frequency region, which for the purpose of these rules shall include the microwave frequency region.

(b) "Partial body irradiation" means when part of the body is exposed to the incident electromagnetic energy.

(c) "Radiation protection guide" means the radiation level that should not be exceeded without careful consideration of the reasons for doing so.

(d) "Symbol" means the overall design, shape, and coloring of the radio frequency (rf) radiation sign shown in Figure G-11.

(e) "Whole body irradiation" means the entire body is exposed to the incident electromagnetic energy or an exposure where the cross section of the body is smaller than the cross section of the incident radiation beam.

**R 325.60703 Radiation protection guide.**

**Rule 3.** (1) For normal environmental conditions and for incident electromagnetic energy of frequencies from

10 MHz to 100 GHz, the radiation protection guide is 10 mW/cm.<sup>2</sup> (milliwatt per square centimeter) as averaged over any possible 0.1 hour period. This means the following:

Power density: 10 mW/cm.<sup>2</sup> for periods of 0.1 hour or more.

Energy density: 1 mW-hr./cm.<sup>2</sup> (milliwatt hour per square centimeter) during any 0.1 hour period.

This guide applies whether the radiation is continuous or intermittent.

(2) These formulated recommendations pertain to both whole body irradiation and partial body irradiation. Partial body irradiation must be included since it has been shown that some parts of the human body, such as eyes and testicles, may be harmed if exposed to incident radiation levels significantly in excess of the recommended levels.

**R 325.60704 Warning symbol.**

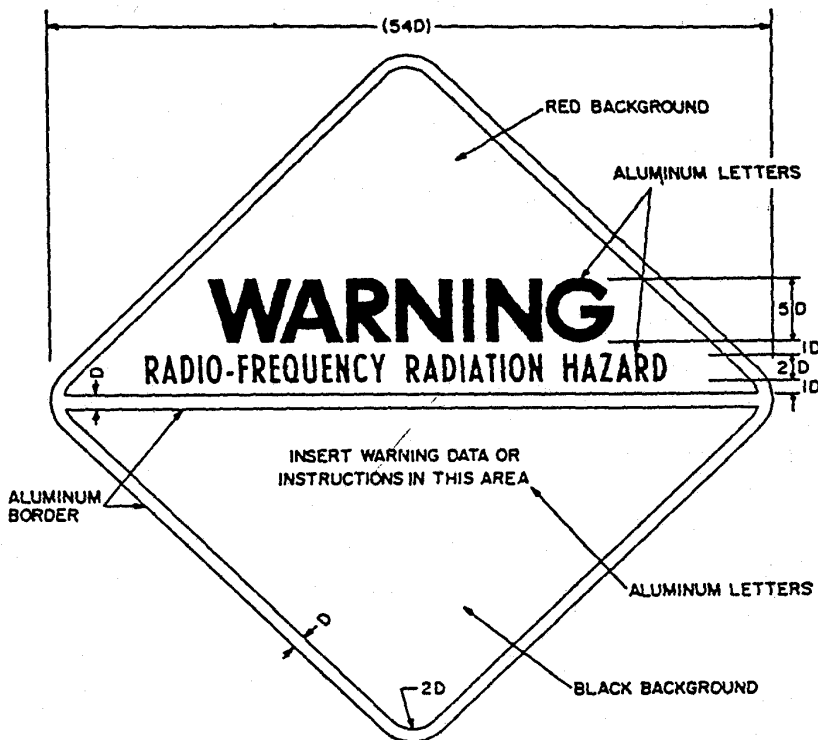
**Rule 4.** (1) An employer shall ensure that the warning symbol for radio frequency radiation hazards consists of a red isosceles triangle above an inverted black isosceles triangle, separated and outlined by an aluminum color border. The words "Warning--Radio-Frequency Radiation Hazard" shall appear in the upper triangle. See Figure G-11.

(2) American national standard safety color code for marking physical hazards and the identification of certain equipment, Z53.1-1953, shall be used for color specification.

All lettering and the border shall be of aluminum color. ANSI Z53.1-1953 is adopted by reference in this rule. Printed copies of ANSI Z53.1-1953 are available from Global Engineering Documents, 15 Inverness Way East, Englewood, Colorado 80112, telephone number 1-800-854-7179, website: [www.global.ihs.com](http://www.global.ihs.com), at a cost as of the time of adoption of these rules of \$25.00 or is available for inspection at the Michigan Department of Labor and Economic Growth, Standards Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan 48909.

(3) The inclusion and choice of warning information or precautionary instructions is at the discretion of the user. If information is included, then the information shall appear in the lower triangle of the warning symbol.

(4) Figure G-11 reads as follows:



1. Place handling and mounting instructions on reverse side.
2. D = Scaling unit.
3. Lettering: Ratio of letter height to thickness of letter lines.  
 Upper triangle: 5 to 1 Large  
                   6 to 1 Medium  
 Lower triangle: 4 to 1 Small  
                   6 to 1 Medium
4. Symbol is square, triangles are right-angle isosceles.



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