

SSI FS 2005:4

The Swedish Radiation Protection Authority's Regulations on Lasers;

issued on June 9th, 2005.

On the basis of sections 7 and 12 in the Radiation Protection Ordinance (1988:293) the Swedish Radiation Protection Authority has issued the following regulations.¹

Applicability

1 § These regulations are applicable to lasers.

The regulations do not apply to transfer of lasers to a manufacturer if they are intended as components in another product. In such cases the regulations apply to the final product.

Definitions

2 § In these regulations terms and concepts are used with the meanings specified here.

Laser: technical device emitting electromagnetic radiation in the wavelength interval 180 nanometre to 1 millimetre mainly generated by the process stimulated emission, or a product that contains such a device,

laser class: designation according to Swedish Standard SS EN 60825-1, edition 3, 2003, which is identical with international standard IEC 60825-1 edition 1.2, 2001, that depends on the radiation properties by the laser or a product that contains a laser,

MPE: Maximum permissible exposure according to Swedish Standard SS EN 60825-1, edition 3, 2003.

Design

3 § At transfer to be taken into use lasers shall be designed, classified and labelled according to Swedish Standard SS EN 60825-1, edition 3, 2003 or by other means afford the corresponding degree of safety. Concerning medical devices also CE-marked lasers shall be considered to be acceptable.

The regulations in the first sub clause regarding the clauses 4.4 – 4.7 on certain safety devices do not apply to lasers which are transferred to an authority in the total defence for use at war or under similar conditions.

¹ Notification has been made in according to the European Parliament and Council Directive 98/34/EC of June 22, 1998 concerning an information procedure for technical standards and regulations OJ L204, 21.7.1998, p. 37, (Celex 398L0034), changed by the European Parliament and Council Directive 98/48/EG, OJ L217, 5.8.1998 p. 18 (Celex 398L0048).

Operation

4 § Anyone who operates a laser shall possess good knowledge on the way in which the laser is handled and know what hazards that might be involved in the practice.

5 § When operating lasers attention shall be paid to avoid human exposure. The beam-path shall be supervised and measures shall be taken in order to prevent human exposure exceeding the MPE-values. At exposure of patients in medical or odontological practices or at irradiation of humans for cosmetic purposes the MPE-values may however be exceeded.

Licence

6 § A licence according to section 21 in the Radiation Protection Law (1988:220) is required for use of lasers in class 3B or 4 if the intended use is entertainment, art or advertising or if there is a possibility that exposures may exceed the MPE-values in public places or in the air.

7 § An application for a licence shall be sent to the Radiation Protection Authority and consist information on

1. the intended practice,
2. time and place for the practice,
3. information on the type of laser and its radiation data,
4. name, address, telephone number and the companies registration number and
5. name of a person appointed to be contact person with the Radiation Protection Authority.

If the application concerns education, art or advertisement it shall also include an outline of the premises showing the beam path in relation to the audience.

8 § A licence for entertainment, art or advertisement outdoors is granted only if the beam path is terminated in a similar way as indoors or if there are special reasons.

Lasers in medical practices

9 § Exposure of patients with lasers in class 4 may only take place under responsibility by a registered physician or a registered dentist. If the exposure concerns the eye or eyelid the section 10 shall apply.

Cosmetic exposure of other skin that the eyelids are not considered to be medical

10 § Exposure with lasers in class 3B or 4 concerning the eye or eyelid must be performed only under responsibility by a registered physician who is a fully qualified ophthalmologist.

Use of lasers in class 3B or 4 for entertainment, art or advertising

11 § For the use of lasers in class 3B or 4 for which a licence is required according to section 6 with the purpose of creating optical effects for entertainment, art or advertising the sections 12 – 16 shall apply.

12 § Laser radiation of wavelengths outside the interval 400 to 700 nanometres must not exceed the emission limit for Class 1 under any possible condition of operation.

13 § The laser equipment shall be provided with at least one readily accessible control to immediately terminate the emission of laser radiation.

14 § Unless physical barriers obstruct the access to the laser radiation the beams shall be directed according to the *annex* so that

1. no beam can reach a point less than 3 metres above any floor accessible to the audience or
2. no beam can reach a point closer than 2.5 metres, measured horizontally, from any point accessible to the audience.

The limitations given above shall apply also to scanning or pulsed beams, even if a normal scanning or pulse function should imply that the applicable MPE-values are not exceeded. The limitations do not apply to laser radiation that comes as reflexes from matte surfaces (diffuse reflexes).

15 § Optical components affecting the beam shall be firmly mounted in such a way that the intended path of the beam can not be changed unintentionally.

16 § In proximity to each aperture from which laser radiation is sent out, the field of radiation shall be masked in such a way that the beam can not be directed into the audience.

Exemptions

17 § If special grounds exist, the Swedish Radiation Protection Authority may grant exemptions from these regulations.

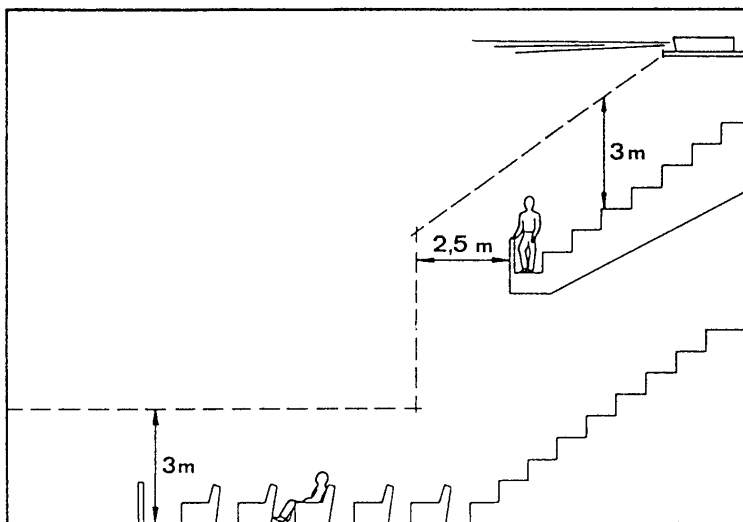
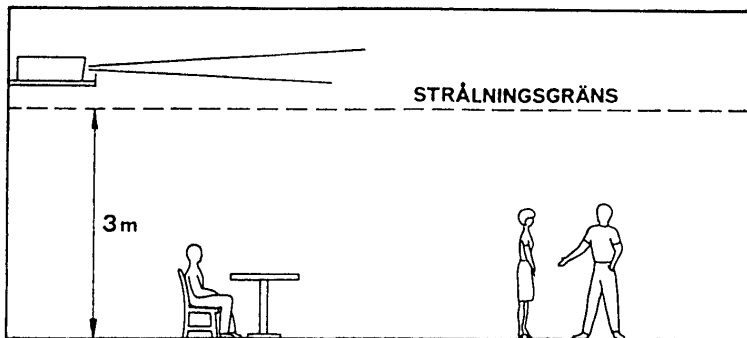
The coming into force and provisional regulations

These regulations enter into force on September 1st 2005 when the Swedish Radiation Protection Authority's regulation (SSI FS 1993:1) on lasers shall cease to apply. Lasers that are designed, classified and labelled according to older standards may be transferred until the end of year 2005.

On behalf of the board of the Swedish Radiation Protection Authority

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Examples on limitations of the beam path other than diffuse reflexes