

RADIATION SAFETY DIRECTORATE

Pursuant to Article 26-e, paragraph 1, item 12 of the Law on Ionising Radiation Protection and Radiation Safety (Official Gazette of the Republic of Macedonia No. 48/02 and 135/07), the Director of the Radiation Safety Directorate hereby adopts a

RULEBOOK ON THE MAXIMUM PERMITTED LEVELS OF RADIONUCLIDES IN METALS, BUILDING MATERIALS, FERTILIZERS, ASHES FROM POWER STATIONS AND WASTE MATERIALS FROM MINES AND SMELTERIES

Article 1

This Rulebook shall prescribe the maximum permitted levels of radionuclides in metals, building materials, fertilizers, ashes from power stations and waste materials from mines and smelteries.

Article 2

Certain terms used in this Rulebook shall have the following meaning:

1) "Waste generated from work activities" shall be ashes from power stations generated by burning fossil fuels and waste materials from mines and smelteries, as well as any material proceeding from work activities established in accordance with the regulations on ionising radiation protection and radiation safety, which the legal entity in whose possession they are discards or has the intention to discard; materials proceeding from past work activities that have been removed elsewhere, as well as materials excavated from contaminated areas.

2) "Activity index" shall be a non-dimensional unit calculated on the basis of the results obtained by measuring the activity of a given radionuclide per unit volume of material.

Article 3

The provisions of this Rulebook shall not apply to radionuclides generated in nuclear industry or in the application of ionising radiation.

Article 4

The activity concentration of radionuclides in metals, fertilizers and waste generated from work activities shall not exceed 5 Bq/g for K-40, 0,5 Bq/g for other natural radionuclides and the exemption levels of artificial radionuclides for materials with a mass exceeding one ton, in accordance with the Rulebook on the criteria for exemption of an ionising radiation source and for release of the exposure to a determined source from control.

In exceptional circumstances, the activity concentration in fertilizers may exceed the levels referred to in paragraph 1 of this Article, provided it refers to natural radioactive sources.

Article 5

Activity levels shall be used to confine the exposure of the general public to ionising radiation originating from building materials.

Article 6

The dose activity level of the general public which is a result of the exposure of the general public to gamma radiation originating from building materials that are used for construction shall be 0,3 mSv per annum.

In cases where the exposure of the general public to gamma radiation is restricted to the value referred to in paragraph 1 of this Article, the probability that the activity per unit volume of air for the radon released in closed premises from the building materials used exceeds the reference levels, established in accordance with the regulations on ionising radiation protection and radiation safety, shall be very small.

Article 7

Activity index shall be used to assess whether the activity level has exceeded the value established in Article 6 paragraph 1 of this Rulebook.

If the activity index referred to in paragraph 1 of this Article is larger than 0,5, the legal entity shall be considered to perform work in accordance with the regulations on ionising radiation protection and radiation safety and it shall carry out an inquiry of the exposure to ionising radiation resulting from the performance of that work.

The legal entity shall submit a report on the findings encountered during the inquiry referred to in paragraph 2 of this Article to the Radiation Safety Directorate within 15 days from the termination of the inquiry.

Article 8

The activity index I_1 for building materials used in construction shall be:

$$I_1 = \frac{C_{Th}}{200 \frac{Bq}{kg}} + \frac{C_{Ra}}{300 \frac{Bq}{kg}} + \frac{C_K}{3000 \frac{Bq}{kg}}$$

where C_{Th} , C^{Ra} and C^K are the activities of ^{232}Th , ^{226}Ra and ^{40}K per unit mass of material, expressed in Bq/kg.

The activity index I_1 referred to in paragraph 1 of this Article shall also apply to materials used for filling floors or in the immediate vicinity of the building.

If the activity index I_1 referred to in paragraph 1 of this Article is less than or equal to 0,5, the building material may be used without any restrictions regarding its radioactivity.

The activity index I_1 referred to in paragraph 1 of this Article may reach the value of 2 only for artificially obtained or similar materials with a limited application.

Article 9

On the day of entry into force of this Rulebook, the provisions on the maximum permitted levels of radioactive contamination of building materials contained in the Rulebook on the maximum permitted levels of radioactive contamination in the environment and on performing decontamination (Official Gazette of SFRY No. 8/87) shall cease to apply.

Article 10

This Rulebook shall enter into force on the eighth day from the date of its publication in the Official Gazette of the Republic of Macedonia.

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16 July 2010

Skopje

Director,

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