

Abstract

Study on the management and policy of indoor air quality

Objectives

This study was performed to provide fundamental data for revising "Guide of indoor air quality in office (No. 2012-71)" documented in the "Law of Occupational Safety and Health" which has not been reviewed since 2006. Another purpose of this study is to suggest a management standard of radon related to office and workplace based on foreign cases and regulation effect analysis.

Methods

- Review of foreign and domestic management system for indoor air quality of office
- Assessment of environmental state of office
- Regulation effect analysis regarding indoor air quality of office
- Radon management standard establishment of office and workplace
- On-site investigation of radon in subway for rationalizing exposure limit in workplace

Results

- An additional project related to ozone in office is recommended because no its domestic document is reported although there are many reports related to ozone measurement in multiple-use facility.
- It is considered that management standards of PM_{2.5} and airborne fungi as well as radon should be prepared in office for coping with current situation of EPA(Environmental Protection Agency) and MOE(Ministry of Environment).
- The fundamental data for rationalizing exposure limit of radon in workplace were obtained in tunnel and drainage pump of subway.
- Mean concentrations of radon in subway were 140.4(±66.6)Bq/m³ for drainage pump and 58.9(±50.9)Bq/m³ for tunnel, respectively, utilizing E-perm which is recommended to approved measuring method in the "Guide of indoor air quality in office".
- It is suggested that several substances managed with recommendation standard in the "Guide of indoor air quality in office" should be tightened up into regulation standard.

Conclusions

- The radon is added to the "Guide of indoor air quality in office" with recommendation standard substance. The criteria of radon are suggested to 148Bq/m³ for office with management standard and 1,000Bq/m³ for workplace with exposure limit, respectively.
- Among three measurement methods (impaction, impingement and filtration) which are currently provided with standard method for measuring total airborne bacteria in office environment, the impaction method is unified

as considering its various advantages and domestic situation.

○ The target substances for evaluating emission amount of hazardous substances from construction materials of office are classified into adhesive, paint, sealant and general material and their criteria and detailed investigation method are provided by revising the Article 9 of the "Guide of indoor air quality in office".

○ The "E-perm" is recommended to approved measurement method for radon in the "Guide of indoor air quality in office" based on the finding that there is no significant difference between radon concentrations measured by "E-perm" and existing radon monitoring device ($p>0.05$).