

Technical Requirement for Environmental Products

The Certificable Technical Requirement for Environmental Labelling Products

Asbestos free building materials

HJBZ 25—1998

1 Scope

This technical requirement specifies definition, basic requirements, technical contents and test method for environmental labelling products of asbestos free building materials.

This technical requirement shall apply to various building materials, including tile, pipe, board and heat insulator etc., which use fiber other than asbestos fibre.

2 Basic requirements

2.1 Quality of products shall conform with requirement of respective product quality standard.

2.2 Safety performance of the product should meet the requirements of relevant safety standards.

2.3 Pollutant emission of the company should conform with pollutant emission standards nationally or locally.

3 Technical contents

No asbestos fibre is allowed to contain in product.

4 Test

4.1 Requirements for quality of products, pollutant emission of the company should be checked by the way of documentation review.

4.2 "Determination for asbestos in building materials" should be adopted to measure asbestos fibre in the products. (See annex A).

Annotations:

This technical requirement has been prepared by Department of science and technology, standards of State Environment Protection Administration.

The State Environment Protection Administration keeps the right of interpretation for this technical requirement.

Approved by SEPA on 02/26/1998

Entered into force on 02/26/1998

Annex A (annex of the standard)

Determination for asbesine in building materials

A. 1 Instruments

- A. 1.1 Polar light optical microscope: 50 ~ 1000 magnification times.
- A. 1.2 Refractometer: scope for detecting coefficient of refraction $N=1.400\sim 1.700$.

A. 2 Reagents

- A. 2.1 Fluid wax: coefficient of refraction $N = 1.470$ (20°C)
- A. 2.2 Naphthalene chloride: coefficient of refraction $N = 1.634$ (20°C)
- A. 2.3 Immersion oil (several immersion oil with coefficient of refraction of $1.490 \sim 1.570$ by mixing fluid wax and naphthalene chloride in different weight ratio. Coefficient of refraction should be detected by using refractometer)

A. 3 Process

Take several pieces of samples from several parts of the building material; cut into slices or mash into powder. Take ~20kg coarse mashed powder after curtailed sampling, then make powdered sample by screening further fine grinded powder through square mesh less than 0.08mm (4900 holes).

A. 4 Analysis method

Asbestos used for producing building materials are primarily chrysotile, which is a fibrous mineral containing abundant magnesium silicate with structural formula of $Mg_6(OH)_6 \cdot (Si_4O_{11}) H_2O$; Another kind of asbestos is amphibole asbestos, which is a fibrous mineral containing abundant silicate. Test method for asbestine is as follows.

A. 4.1 Method of thin-section analysis

Place a prepared flake on microscope carrier. Observe the sample with objective of different amplifications. If the optical property of the sample matches that of asbestos mineral described above, it should be possible to determine which category the asbestos belongs to. If no asbestos mineral are observed in several samples, it can be determined that the material under testing contains no asbestos mineral.

A. 4.2 Method of powdery analysis

Take a little sample powder on the slide. Drop prepared immersion oil (a kind of immersion oil has the closest coefficient of refraction to asbestos mineral) on the sample. Cover the cover glass. And then observe the sample under micro objective. If the optical property of the sample matches that of asbestos mineral, it should be possible to determine which category the asbestos belongs to. If not asbestos mineral are observed in several samples, it can be determined that the material under testing does not contain asbestos mineral.

A. 5 Notice

- A. 5.1 Observe the sample using low-power objective first, and then observe it by high-power objective.
- A. 5.2 Do not put too much sample on the slide.
- A. 5.3 If samples are observed by powder method, in the case of the coefficient of refraction of immersion oil is higher (or lower) than that of asbestos mineral, it should be replace by immersion oil with lower (or higher) coefficient of refraction, and repeat the process of A. 4. 2.