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**JIS K 3850-1** : 2006

(JTCCM/JSA)

**Determination of airborne fibrous  
particles — Part 1 : Optical microscopy  
method and scanning electron  
microscopy method**

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In the event of any doubts arising as to the contents,  
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## Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Testing Center for Construction Materials (JTCCM)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS K 3850-1** : 2000 is replaced with this Standard.

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**JIS K 3850** consists of the following 4 parts under the general title “*Determination of airborne fibrous particles*”:

*Part 1 : Optical microscopy method and scanning electron microscopy method*

*Part 2 : Direct-transfer transmission electron microscopy method*

*Part 3 : Indirect-transfer transmission electron microscopy method*

*Part 4 : Determination of asbestos plant emissions—Method by fibre count measurement*

# Determination of airborne fibrous particles—Part 1 : Optical microscopy method and scanning electron microscopy method

**1 Scope** This Japanese Industrial Standard specifies the measuring method for airborne fibrous particles. Depending on the kind of airborne fibrous particles, many of which exist, a suitable microscope from among the following is used: phase contrast microscope, phase contrast dispersion microscope, scanning electron microscope or transmitted electron microscope. This part of **JIS K 3850** specifically deals with measuring methods by means of phase contrast microscope, phase contrast dispersion microscope and scanning electron microscope.

**2 Normative references** The following standards contain provisions which, through reference in this text, constitute provisions of this part of **JIS K 3850**. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS A 1481 *Determination of asbestos in building material products*

JIS B 7551 *Variable area flowmeters*

JIS K 3802 *Technical terms for membranes and membrane processes*

JIS K 8034 *Acetone*

JIS R 3702 *Cover glasses for microscopes*

JIS R 3703 *Slide glasses for microscope*

JIS Z 8122 *Contamination control—Terminology*

JIS Z 8401 *Guide to the rounding of numbers*

**3 Terms and definitions** For the purposes of this part of **JIS K 3850**, the terms and definitions given in **JIS K 3802** and **JIS Z 8122**, and the following shall apply.

**3.1 fibrous particles** particles of at least 3 aspect ratio (length/width) which float in the air (see **JIS A 1481**)

**3.2 asbestos** fibrous silicate minerals (chrysotile) belonging to a serpentine group and fibrous silicate minerals (amosite, crocidolite, tremolite, actinolite and anthophyllite) belonging to an amphibole group among minerals forming rock (see **JIS A 1481**)

**3.3 fibre concentration** the number of fibrous particles contained in the air of a specific volume (cm<sup>3</sup> or L)

Its unit is expressed by f/cm<sup>3</sup> (f/cm<sup>3</sup> or f/ml) or f/L.

This is called the total fibre concentration since the fibrous particles counted with the phase contrast microscope include organic fibres and inorganic fibres other than asbestos. In the case where the organic fibres are made to disappear through the