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Measuring methods of surface resistivity for glass substrates

ICS 81.040.01

Descriptors : glass, electrical insulation, electrical resistance, resistance measurement,
display devices

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

This Standard relates with the technique to evaluate the performances of the surface of glass substrate which will largely affect the performances of products utilizing such modern technique as liquid crystal displays, plasma displays, etc.

Therefore, attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The Minister of International Trade and Industry and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

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Measuring methods of surface resistivity for glass substrates

Introduction Nowadays glass substrates are used widely as the substrates for liquid crystal display, plasma display, etc. and their surface resistivity gives a great influence to the performance of the display element and the like. This Standard has been developed to standardize the measuring methods of the resistivity and to promote improvement of performances of the display elements.

1 Scope This Japanese Industrial Standard specifies the measuring methods of surface resistivity of glass substrates.

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The latest editions of them apply.

JIS B 7507 *Vernier, dial and digital callipers*

JIS C 2141 *Testing methods of ceramic insulators for electrical and electronic applications*

3 Measuring method at ordinary temperature

3.1 Principle of measurement Apply voltage to the surface of test piece using the measuring circuit composing of an electrode-test piece system X, d.c. power source E, d.c. voltmeter V and ammeter A as shown in Figure 1 and calculate the surface resistivity by the formula specified in 3.5 from the value of surface electrical resistance obtained by dividing this applied voltage by the current flowing on the surface of test piece.

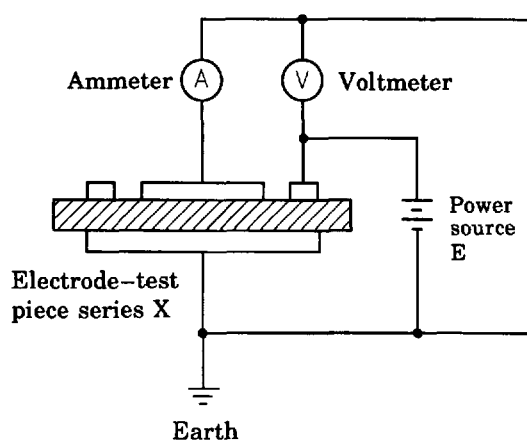


Figure 1 Measuring method of surface resistivity

Informative reference : As a simplified measuring device for surface resistivity in which the equipments shown in Figure 1 are integrated into one set, high isolation resistance meters are sold on the market.