

# Green Product Development with Comfort and High Quality

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Kato Tech manufactures measuring instruments capable of converting human sensibility of texture (the feeling that people have when they touch an object) into objective data. These instruments are widely known as “Kawabata Evaluation System (KES)”.

In recent years, there is an evidence that the factor of human sense such as comfortableness significantly affects the impression of merchandise. KES is expected to be applied for green products, those commodities made by re-used and recycled materials, in order to improve the quality and added value based on the concept of “comfort”.

## KES (KAWABATA EVALUATION SYSTEM) What Is Texture Measurement?

According to the mechanical design and fundamental research of Dr. Sueo Kawabata of the Faculty of Engineering, Kyoto University, and based on the applied research of Dr. Masako Niwa of Nara Women's University, KES, the texture measuring system was developed in the 1970s.

*Texture* is referred to as the properties that determine fabrics' quality. In the past, texture has been analyzed by subject sensation of textile industry experts. Furthermore, texture has been such an ambiguous expression that there was neither common concept nor precise definition of it. To overcome this, the *Hand Evaluation and Standardization Committee (HESC)* was organized as one of the research committees which belongs to the Textile Machinery Society of Japan; researchers and experts from universities and the leading textile companies in Japan joined as committee members. After much discussion Dr. Kawabata and other members had selected the important hand expressions and defined them. Moreover, the committee has analyzed the techniques and actions of experts when they estimate fabric characteristic by their hands, and succeeded on mechanization. Combining Dr. Kawabata and other researchers' study and experts' experiment, the *KES series* was developed.

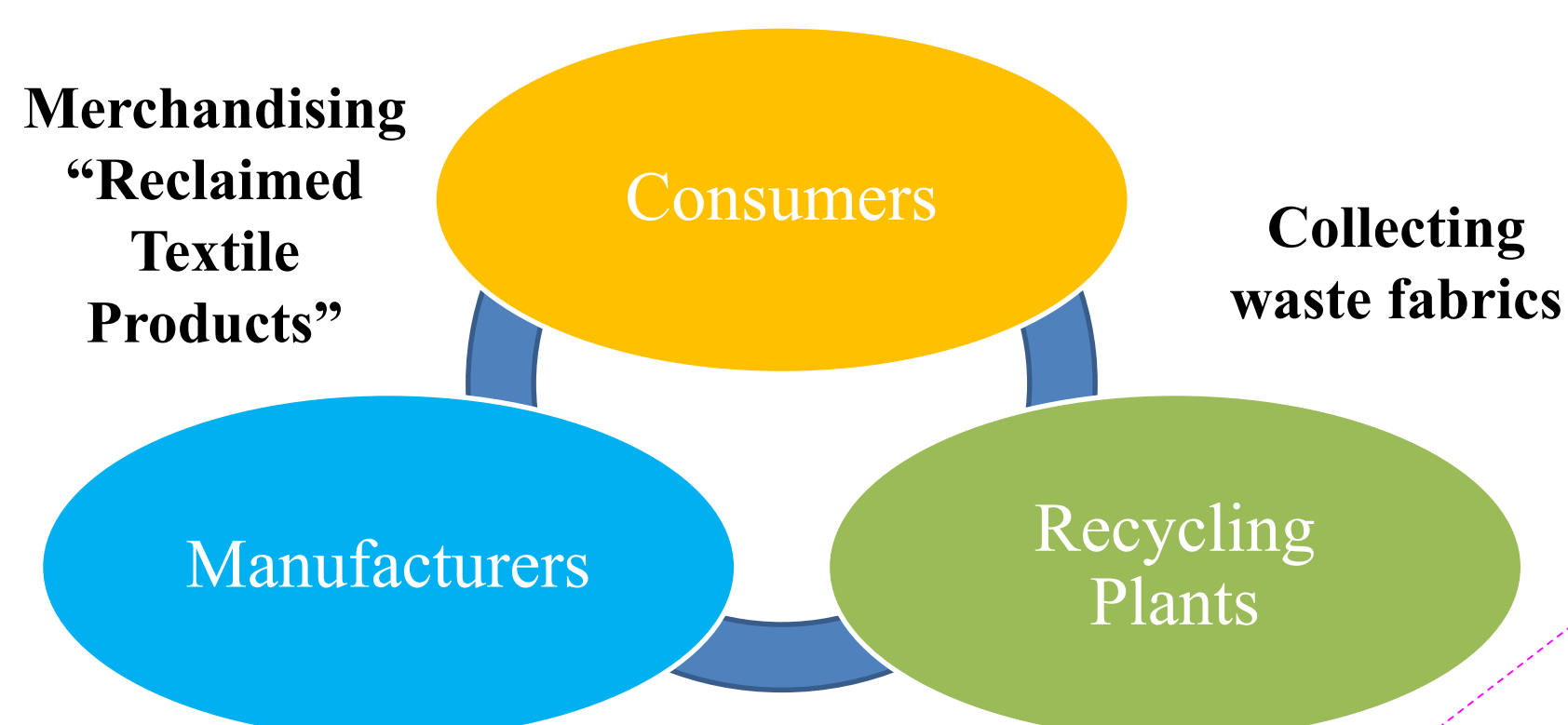
Nowadays KES texture measurement is widely used for development and production in the industries of textile, cosmetics, food, paper, automotive, etc.

Basic Mechanical Properties	Product Name	Obtainable Data
<b>Bending</b>	KES-FB2-A Pure Bending Tester	Bending rigidity, Bending hysteresis (recoverability)
<b>Surface</b>	KES-FB4-A Surface Tester	Mean frictional coefficient, Fluctuation of mean frictional coefficient, Surface roughness

## Reclaimed Textile Products × KES Texture Measurement

As consumers in modern society are requiring more added values such as *high quality*, *comfortableness*, and *functionality*, for quantification and object evaluation KES texture measurement is expected to be applied to green products, those commodities made by re-used and recycled materials, in order to improve the quality and added value based on the concept of *comfort*.

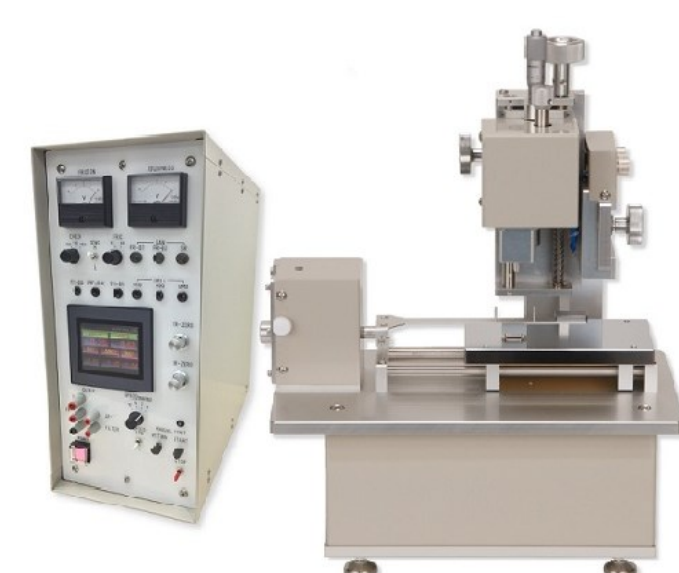
As an application, KES instruments are capable to evaluate the texture of those clothes made by recycled textile. The compressional properties of green clothes, i.e. the soft feeling while people touching them, can be measured by *KES-G5 Compression Tester*, and the surface properties i.e. the slipperiness and stickiness of human sense can be measured by *KES-SESRU Roughness / Friction Tester*.



**Recycled fabric is reused as reclaimed raw material**

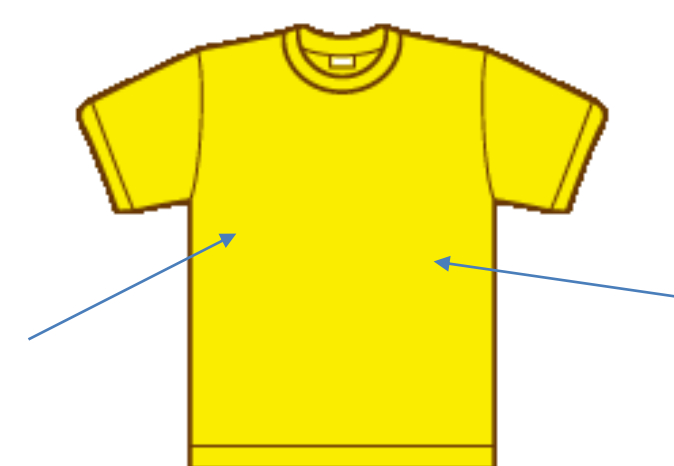
### Example of Product

- Clothing
- Bedding, interior
- Household goods
- General material, industrial material



**KES-SESRU Friction Tester**  
Slipperiness / Stickiness

Measuring the slippery sensation that people have while touching a garment.



**KES-G5 Compression Tester**  
Softness / Hardness

Measuring the soft sensation that people have while touching a garment.

