emtec PAPER TESTING TECHNOLOGY

Tissue Softness Analyzer

TSA

Multifunctional Measuring Instrument
for the Measurement of the "Handfeel" as well as
■ Softness ■ Smoothness/Roughness ■ Stiffness ■ Ball Burst Strength of Tissue

Area of Use

- process optimization
- quality assurance
- benchmarking tests
- product optimization
- R&D
- assessment of pulp/fibers by hand sheet measurements

Main Application

- base tissue
- facial tissue
- toilet tissue
- handkerchiefs

Main User

- Manufacturers of Tissue
- Converters of Tissue
- Pulp Producers
- Chemical Suppliers
- Machine builder

➔ **Substitution of the subjective hand test by an objective measuring method**

updated: 2014-08-14

Features

The “handfeel” is a fundamental quality parameter of tissue, nonwoven and fabrics. It may be characterized by e.g. real softness (determined by fiber stiffness, refining and softener chemicals), smoothness (creping/embossing), stiffness (e.g. fiber behavior, structure), compressibility and “crumpleability“.

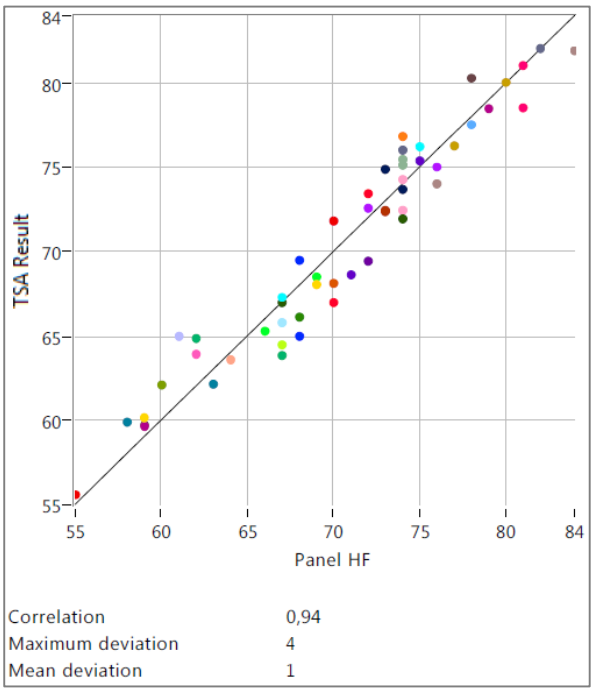
The assessment of the softness usually will be performed by a human panel, consisting of a few persons. This test is very expensive, unreliable, time-consuming, and the results are subjective and influenced by many factors such as culture, personal preferences, and mood.

The **Tissue Softness Analyzer TSA** is an objective measuring instrument and the only existing device which fulfills all the according requirements in the tissue industry. It simultaneously gathers all single relevant parameters which have an influence on the haptic characteristics of tissue which are: Softness, Smoothness/Roughness, and Stiffness.

Additionally, with optional accessories it is possible to measure the ball burst strength, compressibility, and “crumpleability“. Parameters for those values will be automatically calculated by high-performance PC software.

The correlation of the measuring results of the TSA to reliable hand panel numbers, determined by experienced hand panels, is excellent (up to 100 %).

Example:
54 different
toilet paper samples



Application area	tissue, handsheets, nonwoven, textiles, leather, printing paper, plastic foils
Functions/ Measuring results	**3 basic parameters: Softness, Smoothness/Roughness, Stiffness, Calculated HF number * Compressibility, Ball Burst Strength according to DIN EN ISO 12625-9**

* The HF parameter is a value calculated by means of the TSA software. It represents the overall handfeel and results from a complex mathematical modelling of the concerning panels. **When required, algorithms for the computation of HF values can be created by emtec based on customer samples (with known and reliable panel assessment).**

Advantages	objective measuring method, high reproducibility of the results menu-driven measurement integrated temperature and humidity sensor easy handling, robust construction
Software EMS	very user-friendly and easy to operate easy handling in quality assurance, e.g. with special QA Software
Technical data	sample dimension: ∅ 112,8 mm dimension of device: 440x190x470 mm (H x W x D) weight: 19 kg power supply: 115-230 VAC, 50/60 Hz

emtec Electronic GmbH • Gorkistrasse 31 • 04347 Leipzig • Germany
E-mail: info@emtec-papertest.de
Phone: +49 (0) 341 245 70 90 • Fax: +49 (0) 341 245 70 99
www.emtec-papertest.com

RIFERIMENTO PER L'ITALIA
Qi technologies
Qi srl
t +39 06 9105461
www.qitech.it | sales@qitech.it