



## *The Frazier™ Schiefer Uniform Abrasion Testing Instrument*

The Frazier Precision Instrument Company manufactures the *Schiefer Uniform Abrasion Testing Instrument* for the commercial market. This Instrument was developed by Dr. Herbert Schiefer, former Chief of the Textile Section at the National Institute of Standards and Technology and Chairman of the D-13 Committee of the American Society for Testing and Materials.



Frazier Schiefer **Standard** Uniform Abrasion Testing Instrument - [FSUA-S](#)



Frazier Schiefer **Advanced** Uniform Abrasion Testing Instrument - [FSUA-A](#)



Frazier Schiefer **Wet** Uniform Abrasion Testing Instrument - [FSUA-W](#)

The *Schiefer Abrasion Testing Instrument* has the unique feature of having been specifically designed and based upon the mathematical principle in which every point in the surface of the specimen is equally and uniformly abraded in all horizontal directions. This unique action of multi-directional and uniform abrasion of this instrument is the first essential approach in the measurement of the resistance to abrasion of any material.

Resistance to abrasion is one of the most important factors that affect the serviceability of many products. Some of the materials that may be successfully tested for abrasion and wear resistance on the

*Schiefer Instrument* include: most textiles - from carpet through woven, knitted and nonwoven fabrics-yarn, felt, plastic film, paper, rubber, leather, laminates, mastictile, wood, paints, ceramics, stone, metals, and similar materials that can be fitted into the instrument.

The extreme versatility of the Schiefer Instrument is also demonstrated in the available abrasives. The harshness of the applied abrasive action is readily varied by changing abrasives and/or pressure applied to the specimen. The instrument will successfully abrade thin paper, tough plastic, or even hard metal.

In **research**, the *Schiefer Abrasion Testing Instrument* can be indispensable in the development of new and improved materials. It can help evaluate the relationship of factors such as: quality of fiber, quality of yarn, fabric construction, fabric blend, pilling tendencies, finishing treatment, and chemical modification of materials. A special adaptor will even enable the research to produce a scrubbing action to study the effect of detergents or washing.

In **quality control**, the *Schiefer Abrasion Testing Instrument* can provide a quantitative measurement of the abrasion resistance of various materials under closely controlled conditions. The serviceability of the material can be determined directly through comparison with a standard material.

Some representative uses and advantages of the *Schiefer Uniform Abrasion Testing Instrument* are as follows:

1. Used to determine the serviceability of materials.
2. Abrades an area of a sample uniformly in every horizontal direction.
3. Produces constant testing conditions and the results are uniform and comparable.
4. Extremely versatile - will abrade a very wide range of materials.
5. Can be used to uniformly apply a surface treatment, such as a standard soil.
6. **Research** Can be used to study the influence of variations in material and construction on final product.
7. **Quality control** - Easily checks lots on a comparative basis.
8. Used to study the influence of factors involved in wear in mechanical and chemical treatments.
9. Several different specimen and abrading heads are available and readily

interchangeable.

10. Test conditions are easily varied.

11. Samples may be tested either wet or dry.

12. Machine stops automatically when sample -has been abraded through.

13. Abradant load or pressure can be easily varied.

14. Changes in thickness are continually monitored to within a thousandth of an inch.

15. A capacitance bridge accessory enables very accurate dielectric measurement of changes in thickness, in an abrasion test.

16. A counter indicates the number of cycles of testing.

The *Schiefer Uniform Abrasion Testing Instrument* complies with the conditions set forth in: ASTM D1 175; DART 20.0; and Federal Test Method standard #191, Method 5308 and [ASTM D4158](#); GSA Interim Specifications 00-P-0040D (GSA-FSS); [FED-STD-191/5308](#); [FED-STD-191/4308](#); [FED-STD-191/7308](#).

The actual performance of materials in use may be evaluated through the measurement of resistance to abrasion. The *Schiefer Abrasion Instrument* offers a unique, versatile method for producing the uniform abrasion effect that is essential for accurate, quantitative results.

**The Frazier Schiefer Uniform Abrasion Tester** - Frazier, abrasion, abrade, abrading, carpet, material, quality control, uniformly, textile, d-13, iso, astm, abradant, uniform abrasion, D3884 , D3885 , D3886 , D4157 , AATCC 93