

# T 516 cm-00

SUGGESTED METHOD – 1969

CLASSICAL METHOD – 1982

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## CAUTION:

This method may require the use, disposal, or both, of chemicals which may present serious health hazards to humans. Procedures for the handling of such substances are set forth on Material Safety Data Sheets which must be developed by all manufacturers and importers of potentially hazardous chemicals and maintained by all distributors of potentially hazardous chemicals. Prior to the use of this test method, the user should determine whether any of the chemicals to be used or disposed of are potentially hazardous and, if so, must follow strictly the procedures specified by both the manufacturer, as well as local, state, and federal authorities for safe use and disposal of these chemicals.

## Envelope seal, seam, and window patch testing

### 1. Scope

This method describes procedures for evaluating the following properties of envelopes: (1) film thickness of seal, (2) seal, seam, and window patch adhesion, (3) humidity resistance, (4) discoloration and staining of seal, seams, and patch.

### 2. Significance

The functionality of an envelope may be impaired if the adhesion characteristic between paper surfaces is impaired due to the changing environment to which the envelope is subjected. Since many envelope adhesives are affected by increased humidity environments, the adhesive properties of envelopes should be examined at various high humidities. The thickness of the adhesives may also affect adhesive properties. Discoloration and/or staining may result from exposure to high humidities that might damage the contents of the envelope. These test procedures are useful for the comparison of envelope quality. In addition, these standard methods are needed by the envelope industry in place of the wide variety of non-standard tests previously used.

### 3. Apparatus

3.1 *Micrometer*, graduated in units of 0.002 mm (0.0001 in.) [see TAPPI T 411 “Thickness (Caliper) of Paper and Paperboard”].

3.2 *Oven*, maintained at 60°C (140°F).

3.3 *Brush applicator*, or the equivalent, for moistening seals.

3.4 *Enclosed vessels*, such as large desiccators, to give required RH (1,2) with different saturated salt solutions.

3.5 *Conditioning room*, or chamber with a circulating atmosphere accurately controlled to a relative humidity of 50% ± 2% and a temperature of 23.0° ± 2°C (73.4° ± 3.6°F).

**NOTE 1:** If a conditioning room is not available, use an enclosed vessel with a saturated solution of calcium nitrate, Ca(NO<sub>3</sub>)<sub>2</sub>•4H<sub>2</sub>O, at 23°C, to obtain the equivalent RH (1,2).

**NOTE 2:** The room or vessel must be brought to equilibrium before any tests are conducted.