Afera 4026 Test Method

Accelerated Ageing of Adhesive Tapes

1. Scope

The test method is designed to obtain an indication of the long-term stability of adhesive tapes by simulation of the ageing behaviour at elevated temperatures.

Note: there is no direct correlation between accelerated ageing and real ageing behaviour for all types of adhesive tapes.

2. Summary of Test Method

The adhesive tape is placed in an air circulation oven at an elevated temperature for a defined period to observe the possible change of the physical or chemical properties of the adhesive tape.

2.1 Comparison of adhesive values (e.g. adhesion and unwind adhesion) before and after accelerated ageing.

2.2 Examination of appearance (cf. Glossary of Terms).

3. Equipment

3.1 Air circulation oven. The oven shall be able to keep a constant temperature of (65 ± 2) °C or (40 ± 2) °C in the area where the tape rolls are placed, usually placed on a perforated platform. .

4. Test Specimens

Commercial rolls of adhesive tapes, preferably 25 mm wide and at least 9 m long, shall be taken as test specimens. Rewound rolls shall not be used.

4.1 Preparation of test specimens: The rolls are tested "as received".

4.2 The rolls should be placed horizontally on the perforated platform, not touching each other, and so that they can absorb the heat from all sides.

4.3 The accelerated ageing shall be carried out either at 40 °C for 1, 2, 4 and 8 months or 65 °C for 1, 2, 4 and 8 weeks.

4.4 After accelerated ageing according to 4.3, the rolls shall be placed in standard conditions (23 ± 1) ° C and (50 ± 5) % relative humidity for 24 hours and then be inspected acc. to 5.1 and tested acc. to 5.2.

5. Procedure

5.1 Visual examination of the rolls after accelerated ageing: any visible change to the rolls , which may be important for the application, shall be noted. The criteria of the “Glossary of Terms” may serve as a guidance.

5.2 Testing of the rolls: unwinding the rolls at a speed of 300 mm/s, the tape being stripped at an angle of 90° tangentially to the roll.

After removal of the first three turns of the tape any breakage, twisting, adhesive transfer or backing splitting, which may occur, shall be reported.

Depending on the application of the tape, further testing shall be carried out by measuring specific properties such as adhesion properties, tensile strength, unwind adhesion. The corresponding Afera Test Methods shall be used.

6. Results

6.1 The test period (point 4.3) and the corresponding temperatures are noted.

6.2 The results of the visual examination according to 5.1 and the test results according to 5.2 are used to compare the adhesive tapes before and after the ageing test;

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