AUSTRALIAN STANDARD
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Appita P428rp —83
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CRACKING RESISTANCE OF PAPERBOARD

Cracking resistance of paperboard is defined for the purpose of this method as the ratio of half the 'looped breaking load' of the paperboard to the 'breaking load' of the same material expressed as a percentage. This method specifies the procedures to be used when measuring, by means of a pendulum-type tensile testing machine, the 'looped breaking load' and the 'breaking load' of the paperboard, and for calculating the cracking resistance from these results.

The cracking resistance test is used to predict whether a linerboard will crack along the outside of bends when made up into solid or corrugated containers. The results obtained from the test are in no way comparable with the bending quality (Reference 6.1) as applied to certain boards.

1. APPARATUS

1.1 Pendulum-type tensile testing machine as described in Appita Standard P404.

1.2 Test piece cutter as described in Appita Standard P404.

1.3 Stopwatch or other timer graduated in seconds.

1.4 Cracking resistance hook. When the tensile testing machine is one from which the bottom clamp is readily removed, the hook illustrated in Fig. 1 is used. The tapered hole through the shank of the hook is in such a position that, when the hook is inserted in the machine in place of the lower clamp, the bottom of the silver steel bar is 75 ±1 mm below the lower edge of the top clamp of the machine at the start of the test.

When the bottom clamp is not readily removed from the machine, the hook illustrated in Fig. 2 is used. The length of the shank is so adjusted that, when the hook is clamped in the top clamp of the machine, the top of the silver steel bar is 75 ±1 mm above the top edge of the lower clamp of the machine at the start of the test.

2. PREPARATION OF TEST PIECES

2.1 Condition the sample in accordance with Appita Standard P414 in the standard atmosphere prescribed in Appita Standard P415.

2.2 Cut test pieces 15.0 ±0.1 mm wide and approximately 250 mm long (Note 5.1). Ensure that the edges are clean-cut and parallel, and reject any test piece which is deformed during cutting or which contains visible creased or rare manufacturing defects. Prepare at least 20 test pieces in the required principal direction of the board, but do not handle any portion of the test piece which could be between the lines of contact when clamped. Test pieces cut with the longer dimension in the machine direction give information relevant to bending or creasing parallel to the cross direction.

3. PROCEDURE

3.1 Measurement of Breaking Load.

3.1.1 Carry out all testing in the standard atmosphere prescribed in Appita Standard P415.

3.1.2 To determine the average breaking load follow the procedure outlined in Appita Standard P404. Record the average of the ten results.

3.2 Measurement of Looped Breaking Load.

3.2.1 Set the pointer in the zero position and lock the upper clamp in that position. Remove the lower clamp from the machine and install the hook (Fig. 1).

3.2.2 Place the test piece, liner side down (Note 5.2), around the hook and carefully raise the ends until they meet. Draw the test piece up sufficiently to straighten it, place the ends centrally between the jaws of the upper clamp and close it. View the test piece from a position at right angles to its surface and ensure that it is vertically aligned. If not, lock the clamp and adjust the test piece position in the clamp so that it will hang vertically. Then unlock the clamp and tighten it so that the test piece cannot slip during the test.