

ECT (Edge Crush Test) and Burst (sometimes called "Mullen") ratings for corrugated board are based on two completely different tests, and measure different properties of the material.

Burst tests use hydraulic pressure behind a flexible diaphragm. Increasing the pressure causes the diaphragm to expand through a circular opening. A sample of board is clamped across the opening and the diaphragm forces through due to increasing pressure until it bursts the sample. Test level is maximum pressure in pounds per square inch (Psi).

ECT uses a small sample of board compressed between two platens which are aligned perpendicular to the flute direction. Test value is the maximum force to collapse the board, in pounds force per inch of specimen length.

So the two tests measure different properties: ECT measures primarily top-to-bottom compression strength, while Burst measures primarily puncture and tear resistance.

Corrugated grades are based on these tests. When a test is applied to a sample, then the results allow us to assign a grade. So a particular run of board is not intrinsically ECT or Burst, the designation only refers to how it was tested (board may be designed to optimize one of the other test results, however). If a run is designed to be graded ECT and then is graded ECT and marked accordingly, we typically call it ECT grade board. But the sample could also be graded Burst. Grade is just a classification system and there happens to be two systems. Accordingly it is not typically possible to tell the difference between ECT and Burst grades as all board can fit into both grading systems.

Carrier rules now allow for grading by either system. The ratings are ALTERNATES, but not EQUIVALENTS. No equivalency exists or is implied between the grading systems. For example, while 32 ECT is an ALTERNATIVE to 200 Burst, 32 ECT is not EQUIVALENT to 200 Burst. In fact, we would expect that 200 Burst would test about 38 ECT and 32 ECT would Burst test at roughly 150.

If your primary concern is crushed boxes and stacking problems, consider specifying in terms of ECT. If it's a containment strength and puncture resistance issue, consider specifying in terms of Burst. If you need both, specify both.