Test Procedure Guidelines

Test Method: **PRINT-TO-DIE CUT REGISTRATION**

PURPOSE OF PROCEDURE:

The purpose of this specification is to standardize test methods and terminology of the tolerances related to print-to-die cut relationships. It will also give a common frame of reference in judging test results.

DEFINITION OF TERMS:

Print-to-die cut: This term relates to the registration of all of the colors on a single label to the die cut edges. The color or combination of colors closest to the edge of the label is the measuring point of reference.

EQUIPMENT/MATERIALS NEEDED:

Measuring devices: Linear measuring device that is calibrated and readable to ± 0.1mm. Recommended device is Peak #1972 Glass Scale with Magnifier (*www.peakoptics.com*) or equivalent.

TEST PROCEDURE:

1. The finished, die cut single label must be in a position that the measuring device can be accurately placed on the label. If the label is applied to a curved surface, it will be difficult to get an accurate measurement.
2. The measuring point of reference must be determined from the die edge. Many labels are special shapes and do not have a straight edge to measure from. Because of this, a point on the label that is most representative of the registration appearance must be picked for the measuring point.
3. To accurately measure the printing to the die cut edge, a point of reference must also be determined from the printing. The most accurate information will be achieved if the reference point on the label has a straight edge that is parallel to the die cut edge of the label. When this is not possible the printing closest to the die cut edge of the label becomes the measuring point.
4. The ruler (as described in the equipment section) is then used to measure the distance between the die cut edge and the reference point on the printed label. The target distance between the two points of reference must be predetermined by the customer and printer.

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5. As a history is developed through a single order, and throughout multiple runs of a given label, the distance between the printing and die cutting will fluctuate. This fluctuation is caused by many issues that are not addressed in this test method. It becomes the printer's responsibility to observe this movement and measure the differences between the largest distance between die cutting and printing to the smallest distance. This fluctuation becomes what the printer has as a print to die cut registration tolerance.
6. This registration tolerance becomes the printer's responsibility to control from one order to the next. The amount of tolerance allowable must be agreed upon by the printer and the customer. If the customer is not the bottle manufacturer, or a contract packager for an end user, the allowable registration tolerance must be communicated to all of the interested parties.

DOCUMENTATION:

The allowable tolerance of print to die cut registration that is agreed upon by the customer and printer should be in written specification provided to the printer from the customer.

The frequency of the test to be performed by the printer must also be agreed upon by the customer. That is to say that the customer should provide in their specification a frequency that the printer is to pull samples from the die cutter. These will be used to record results.

Many customers will require the printer to keep representative samples (retains) of the press run in inventory to reference in the event that the customer finds a defect in the provided order. This frequency of these retains should also be specified to ensure compliance.

REFERENCES: