



## LABEL SPECIFICATION DOCUMENT

NUMBER: 141846-821  
ISSUED: June 6, 2000  
Revision: September 1, 2010  
APPLICATION: Label material for DataPlace® machines

### LABEL CHARACTERISTICS AND REQUIREMENTS

#### SCOPE

This Specification Document outlines characteristics and manufacturing requirements for all labels destined to be printed, picked, placed or scanned by Amistar's DataPlace® labeling machines. The purpose of this specification is to ensure proper and dependable performance of the DataPlace® machine.

#### AGE AND STORAGE OF MATERIALS

To ensure consistent label characteristics, and therefore DataPlace® machine performance, both the manufacturing of label material and the conversion of the label material by die cutting must be recent events. Generally, the label material shall have been manufactured within 90 days of the die cutting (conversion) date. Once die cutting has created the labels, those labels should be printed and applied to a product within the next 90 days. At all times, labels shall be stored in a dry, humidity stable, cool (<72° F.), contamination-free environment.

#### SPLICES ON REELS AND MISSING LABELS.

The quality of the label creation process can be judged by the number of splices and the number of missing labels found on a reel: i.e. the fewer splices and missing labels, the higher the quality.

The number of splices should be limited to less than 1 splice per 3,300 labels. All splices shall be made with diagonal cuts to the liner (backing layer) to avoid "butt joints".

#### DESIGNATION AND QUALITY OF CONVERSION

The rolls of labels to be used on DataPlace® machines shall be designated by the label converter or supplier to have been "designed for" or "appropriate for" automation: i.e. removal from the liner by vacuum and other mechanisms common to automated labeling machines. The conversion process shall add no contamination including adhesive, release agents, lubricants, dust and other debris. Conversion dies shall be fitted with wear-free drive gears mounted concentric to die cut cylinder, and shall have die cutting blades whose cutting edges provide a T.I.R. (total indicated run-out) of 0.0005", or less. Dies shall provide the optimum cut angle for the label material and for automated label dispensing. Dies shall be manufactured and maintained to produce uniformly spaced labels, with no over-cut into the liner. Samples from each roll of labels shall be dye stain tested during the conversion process.

#### LINER WIDTH

Liner width shall be constant for all rolls of a given label part number to within  $\pm 0.005$  inches.

#### LABEL POSITIONS ON THE LINER

The position of each label from the liner edge shall not vary more than  $\pm 0.005$  inches from the specification value for any label part number.

The space between labels along the length of the liner shall be no less than 0.079 inches and no greater than 0.157 inches, and on a single roll have a  $3\sigma$  variation no greater than 0.002 inches.

The variation of the distance measured from the leading edge of one label and the leading edge of another label approximately four inches further down the length of the liner shall have a  $3\sigma$  value no greater than 0.005 inches.

### LABEL PEEL CHARACTERISTICS

All labels shall peel immediately from the liner when the liner is pulled with a tension of 1200 grams over the edge of a 90-degree peel blade having a corner radius of 0.003 inches.

### STAIN TESTING

Samples from each roll of labels shall be dye stain tested to verify that die cuts are to an acceptable depth: i.e. cut completely through the label and the adhesive but not through the silicone coating on the liner or into the liner. A stain test is used to determine if the die-cuts are to an acceptable depth. A methyl red dye solution or a felt-tip marker may be used for this test.

A red dye solution can be mixed as follows:

- Add 8 grams of methyl red dye to 38 grams of methyl alcohol. Mix until the dye goes into solution.
- Add 348 grams of ethyl alcohol and mix.

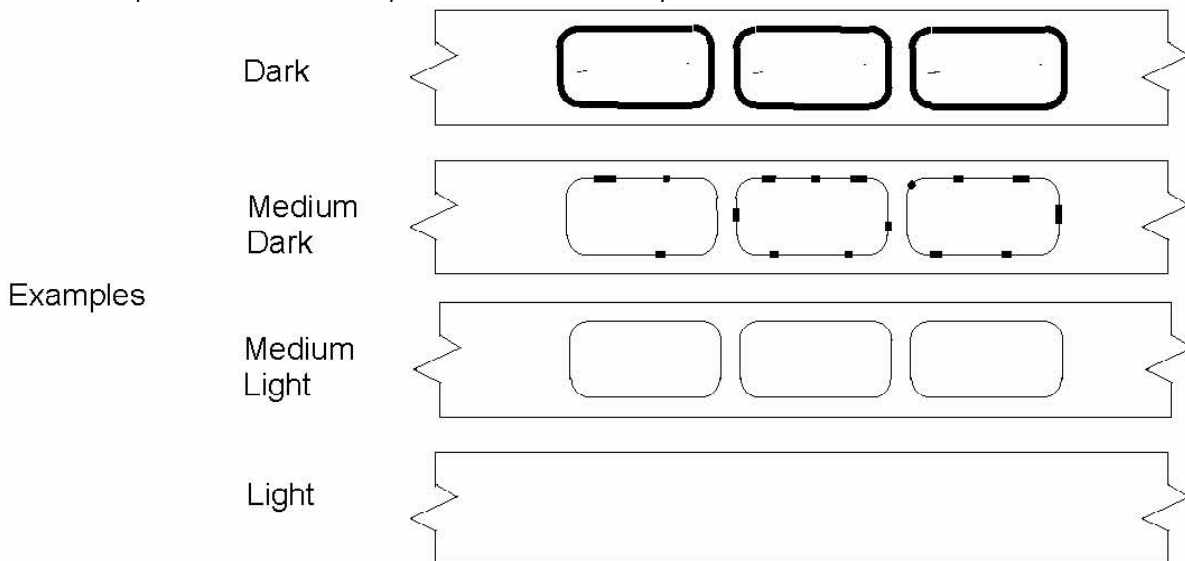
The test procedure is as follows:

- Saturate a Q-tip or cloth with dye solution

With a back-and-forth motion (covering a width of the liner and at least one repeat of labels) lightly wipe the dye across the liner. Alternately, make multiple, but gentle strokes with the felt-tip marker.

Inspect the liner for spots where the dye has penetrated. A medium-light to medium-dark dye stain is recommended. Use examples below as a guide for determining if the die cut is at proper depth.

The stain test should be performed at the start of every roll, after every splice, and after an adjustment has been made to the conversion press (such as changed settings for roller or die pressure). The stain test should be performed after the press operator believes the conversion press has been set properly and has run for one to three minutes at production speeds. Die pressure and liner tension should be increased or decreased depending on the results of the stain test. This procedure should be repeated until a satisfactory die-cut is achieved.



### OTHER CONSIDERATIONS

Zebra printers are the primary print engine for DataPlace® machines. DataPlace® users should also refer to printer and label specifications provided by Zebra for label media and ribbon characteristics.