

Avery Dennison® Thermal Transfer Printing with Matan Printers

Instructional Bulletin #8.60
Revised September 7, 2011

Description:

Avery Dennison and Matan have developed a digital printing solution for traffic sign applications. The combination of Avery Dennison retroreflective sheeting and Matan printers and thermal transfer ribbons offers the industry an approach to traffic sign fabrication.

Using Matan's DTS-12" or DTS-36" thermal transfer printers and specially formulated thermal transfer ribbons, all Avery Dennison retroreflective sheetings can be digitally printed with the performance and durability as provided herein for producing sign legend. Advantages of this system include:

- A "green"-solution – "solvent-free" printing using digital thermal transfer technology
- Reduced sign fabrication costs by eliminating costly overlay films, transfer films, and associated labor to cut, weed, and apply graphics
- Custom imaging flexibility – short run, multi-color logos and signs can be produced efficiently

Construction:

Retroreflective Film:	T-1500D, T-6500, T-7500, and T-9500 Omni-View™, T-11500 OmniCube™ Series Sheetings
Thermal Transfer Ribbon:	Matan thermal transfer ribbon designed for Avery Dennison sheeting
Overlay Film:	OL-1000, or OL-2000 Clear overlays – see color details

Thermal Transfer Ribbons:

Color	Matan Product Name
Black	DTS-Bk
Traffic Green	DTS-G
Traffic Blue	DTS-B
Traffic Red	DTS-R
Traffic Brown	DTS-Brn

Avery Dennison® Thermal Transfer Printing with Matan Printers

Instructional Bulletin #8.60
Revised September 7, 2011

Physical Properties:

Minimum Surface & Ambient Air Application Temperature	65°F (18°C) when applied with a squeeze roll applicator.
Application Surface	Flat surfaces only. Not recommended for unpainted stainless steel. Always pretest your specific substrate prior to application. Note: Wet method of application is not recommended for Avery Dennison retroreflective sheeting.
Service Temperature Range	-40°F to 180°F (-40°C to 82°C)
Shelf Life	Ribbons, sheeting and overlay films have a one(1) year shelf life, from the date of delivery, when stored at the following temperature and conditions: 68° - 77°F (20° - 25°C) and 50% ± 5%± R.H.
Other Tests:	Meets all other requirements set forth in ASTM D 4956 including Shrinkage, Flexibility, Liner removal, Adhesion, Impact resistance, Specular gloss and Outdoor weathering. Users should independently confirm such testing.

Other Specifications:

Consult your Avery Dennison Representative for information concerning compliance with additional world-wide specifications.

Integrated Component System (ICS) Warranty Performance:

Matan thermal transfer ribbons are currently the only ribbons guaranteed to meet the reflectivity, color, and durability requirements for traffic control devices when applied to Avery Dennison retroreflective sheetings^A. The ribbons referenced in this document are the only ribbons covered by the ICS warranty. Users may find satisfactory results with other Matan ribbons, but warranty coverage is not provided by Avery Dennison. When applying thermal transfer ribbons on white retroreflective sheeting, the coefficient of retroreflection will be no less than 70% of that achieved by the respective color of manufactured sheeting. Reference the retroreflective sheeting product data bulletin for the series of base sheeting being used.

When using thermal transfer ribbons, OL-1000 Anti-Graffiti or OL-2000 Clear overlay film shall be applied over the top of the printed image for all colors. No warranty will be given without using either OL-1000 Anti-Graffiti or OL-2000 Clear overlay films. When overlay films are applied, the additional benefit is that the resulting warranted performance will be extended by two years for all Avery Dennison retroreflective sheetings as shown below:

Instructional Bulletin #8.60
Thermal Transfer Printing

Page 2 of 4

Graphics & Reflective Products Division
250 Chester Street
Painesville, OH 44077



1-800-282-8379

www.reflectives.averydennison.com

Avery Dennison®

Thermal Transfer Printing with Matan Printers

Instructional Bulletin #8.60
Revised September 7, 2011

Warranted Outdoor Durability:

Series^B	Years
T-1500D	9
T-6500, T-7500	12
T-9500 Omni-View™	14
T-11500 OmniCube™	14
^B Excludes Orange and Fluorescent Orange	

^A ASTM D-4956 does not specifically address the requirements of inks and overlay films. Many government agencies have a requirement that inks and overlay films used in sign production meet 70% of the reflectivity level of the manufactured colored sheeting. All thermal transfer ribbons, overlay films, and screen print inks approved for application to Avery Dennison retroreflective sheetings are formulated to comply with this requirement..

Application & Conversion Information:

The following Avery Dennison literature will provide information to the user for proper application, storage, and other requirements. Additional support is available from your Avery Dennison representative, from the Avery Dennison web-site www.reflectives.averydennison.com, or on request.

Instructional Bulletins:	
Sheeting Care & Handling	#8.00
Substrate Requirements	#8.01
Application Techniques PS Sheeting	#8.10
Steel Rule Die-Cutting	#8.20
Thermal Die Cutting	#8.20
Sign Cutting	#8.25
Troubleshooting Printing & Processing	#8.34

Matan provides an instructional manual for the DTS-12" and DTS-36" printers that outlines machine setup and operating instructions. Please contact your Matan dealer for additional assistance with system settings, and be sure to follow the manufacturer's recommendations for machine operation. Any deviation from the manufacturer's or Avery Dennison's recommendations may void the Avery Dennison ICS warranty.

The Matan digital printer must be placed in an office environment. This will help minimize dust and maintain a proper room temperature environment for consistent printing. To further reduce dust in the printing process, it is recommended to install a vacuum to the collection nozzle on the

Instructional Bulletin #8.60
Thermal Transfer Printing

Page 3 of 4

Graphics & Reflective Products Division
250 Chester Street
Painesville, OH 44077



1-800-282-8379

www.reflectives.averydennison.com

Avery Dennison®

Thermal Transfer Printing with Matan Printers

Instructional Bulletin #8.60
Revised September 7, 2011

infeed of the machine. The machine's sticky roll needs to be monitored and regularly cleaned of accumulated dust.

Finished Sign Mounting & Orientation:

As with all Avery Dennison retroreflective sheetings, uniquely designed omni-directional prisms eliminate the need for datum marks to reference when cutting sign legend or orienting sheeting on the substrate. Users will experience uniform retroreflective appearance regardless of orientation on the substrate.

Warranty:

All statements, technical information and recommendations about Avery Dennison products are based upon tests believed to be reliable but do not constitute a guarantee or warranty. All Avery Dennison products are sold with the understanding that Purchaser has independently determined the suitability of such products for its purposes. Avery Dennison products are warranted to be free from defects in material and workmanship for either one year (or the period stated on the specific product information literature in effect at time of delivery, if longer) from date of shipment if said product is properly stored and applied. It is expressly agreed and understood that Avery Dennison's sole obligation and Purchaser's exclusive remedy under this warranty, under any other warranty, express or implied, or otherwise, shall be limited to repair or replacement of defective product without charge at Avery Dennison's plant or at the location of product (at Avery Dennison's election), or in the event replacement or repairs is not commercially practical, to Avery Dennison's issuing Purchaser a credit reasonable in light of the defect in the product.

Avery Dennison's liability for defective products shall not exceed the purchase price paid therefore by Purchaser and in no event shall Avery Dennison be responsible for any incidental or consequential damages whether foreseeable or not, caused by defects in such product, whether such damage occurs or is discovered before or after replacement or credit, and whether or not such damage is caused by Avery Dennison's negligence.

NO EXPRESS WARRANTIES AND NO IMPLIED WARRANTIES, WHETHER OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE, OR OTHERWISE (EXCEPT AS TO TITLE), OTHER THAN THOSE EXPRESSLY SET FORTH ABOVE WHICH ARE MADE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, SHALL APPLY TO PRODUCTS SOLD BY AVERY DENNISON. AVERY DENNISON SPECIFICALLY DISCLAIMS AND EXCLUDES ALL OTHER SUCH WARRANTIES. NO WAIVER, ALTERATION, ADDITION OR MODIFICATION OF THE FOREGOING CONDITIONS SHALL BE VALID UNLESS MADE IN WRITING AND MANUALLY SIGNED BY AN OFFICER OF AVERY DENNISON.