



Polyester Overlaminating Films

7744 • 7744FL

Technical Data

August, 2007

Product Description 3M™ Polyester Overlaminating Films 7744 and 7744FL utilize a matte clear polyester that is recommended for optimum durability and thermal transfer printability. 3M™ Adhesive 400 offers excellent low temperature performance and long term aging for resistance to yellowing in outdoor applications.

Construction	Product Number	Facestock	Adhesive	Liner
	3M overlaminating film 7744	.0013 in. Matte Clear Polyester TT TC (33 micron)	#400 Acrylic 0.8 mil (20 micron)	43# Densified Kraft 2.5 mil (64 micron)
	3M overlaminating film 7744FL	.0013 in. Matte Clear Polyester TT TC (33 micron)	#400 Acrylic 0.8 mil (20 micron)	.0015 in. Clear Polyester Liner (38 micron)

(Calipers are nominal values.)

- Features**
- 43# bleached kraft liner helps improve application accuracy due to excellent liner release consistency.
 - High-bond strength resists edge lifting.
 - Superior abrasion, humidity and solvent resistance.
 - Premium overlaminate performance for extreme environmental conditions.
 - UL recognized (File MH16411).
 - CSA Accepted (File 99316) for overlamination of both polyester and vinyl labelstocks.

- Application Ideas**
- Barcode labels and rating plates.
 - Property identification and asset labeling.
 - Warning, instruction, and service labels for durable goods.
 - Nameplates for durable goods.
 - Protective overlaminate for label and nameplate graphics can be used on appliances, industrial equipment, tools, etc.
 - Printable overlaminate for variable information.

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Typical Physical Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Adhesive Coat Weight	0.81 to 1.35 g/100 in. ²	TM-2279
Release Range 3M™ Film 7744 3M™ Film 7744FL	8 to 55 g/2 in.	TLMI Method, 180° removal, 300 in./min.
	5 to 55 g/2 in.	TLMI Method, 180° removal, 300 in./min.
Service Temperature	-40°F to 250°F (-40°C to 121°C)	
Minimum Application Temperature	10°F (-12°C)	
Convertability	Low temperature, high clarity 3M™ Acrylic Adhesive 400 is specifically designed to be compatible with a variety of print methods and overlaminate applications. When converting labels for thermal transfer applications, care should be taken with regard to proper roll tensions, handling and storage conditions. Please refer to the die cutting/converting section of this data page or the “Guide to Converting and Handling Label Products” technical bulletin for additional information.	

Typical Peel Adhesion Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Adhesion: 180° Peel, 12 in./minute Dwell (ASTM D3330, 305 mm/min.), 1 in. wide sample, at 72°F (22°C) and 50% relative humidity. Values: oz./inch width.

Surface	Initial (10 Minute Dwell/RT)				Conditioned for 3 Days at Room Temperature 72°F (22°C)			
	180° Peel		90° Peel		180° Peel		90° Peel	
	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm
Stainless Steel	29	32	23	25	41	45	32	35
Polycarbonate	33	36	28	31	39	43	37	40
Polypropylene	27	30	19	21	29	32	26	28
Glass	32	35	24	26	40	44	40	44
HD Polyethylene	12	13	8	9	14	15	12	13
LD Polyethylene	11	12	9	10	14	15	17	19

Surface	Conditioned for 3 Days at 120°F (49°C)				Conditioned for 24 hours at 90°F (32°C) at 90% Relative Humidity			
	180° Peel		90° Peel		180° Peel		90° Peel	
	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm
Stainless Steel	46	50	38	42	67	73	33	36
Polycarbonate	26	28	27	30	34	37	33	36
Polypropylene	32	35	25	27	28	31	21	23
Glass	50	55	38	42	47	51	26	28
HD Polyethylene	21	33	15	16	17	19	15	16
LD Polyethylene	5	5	7	8	10	11	17	19

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Environmental Performance

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The properties defined are based on 4-hour immersions at room temperature (72°F/22°C) unless otherwise noted. Samples were applied to stainless steel panels 24 hours prior to immersion and were evaluated one hour after removal from the solution for peel adhesion. Adhesion measured at 180° peel angle (ASTM D3330) at 12 inches/minute.

Chemical Resistance:

Chemical	Adhesion to Stainless Steel		Appearance	Edge Penetration
	Oz./in.	N/100 mm	Visual	Millimeters
Isopropyl Alcohol	39	43	No change	0.0
Detergent (1% Alconox® Cleaner)	42	46	No change	0.0
Engine Oil (10W30) @ 250°F (121°C)	53	58	No change	2.0
Water for 48 hours	62	68	No change	0.0
pH 4	43	47	No change	0.0
pH 10	44	48	No change	0.0
409® Formula	45	49	No change	0.0
Toluene	23	25	No change	7.0
Acetone	28	31	No change	5.0
Brake Fluid	54	59	No change	0.0
Gasoline	24	26	No change	6.0
Diesel Fuel	39	43	No change	1.5
Mineral Spirits	34	37	No change	3.0
Hydraulic Fluid	43	47	No change	0.0

Temperature Resistance:

300°F (149°C) for 24 hours:

No significant visual change.

-60°F (-51°C) for 10 days:

No significant visual change.

Humidity Resistance:

24 hours at 100°F (38°C) and 100% relative humidity:

No significant changes in appearance or adhesion.

Application Techniques

For maximum bond strength, the surface should be clean and dry. A typical cleaning solvent is heptane or isopropyl alcohol. *

For best bonding conditions, application surfaces should be at room temperature or slightly higher. Low temperature surfaces, below 50°F (10°C), cause the adhesive to become firm and will not allow the adhesive to flow and develop intimate contact with the substrate.

Silicone overspray/contamination of the substrate can cause poor adhesion.

***Note:** When using solvents, read and follow the manufacturer's precautions and directions for use.

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Printing

Facestock is topcoated for improved ink receptivity and is designed for thermal transfer printing. It is printable by all standard roll processing methods including flexography, hot stamp, letterpress, and screen printing.

Thermal Transfer Printing:

Ink Ribbon Components:

Advent: 301 Black; 303 Black; 501 Black; 501 Red; 501 Blue; 501 Green

Armor: AXR-7; AXR-7+; AXR-600

Astromed: R5

CP: 5440 Red; 5640 Blue; 5940 Black

Dasco: DR-74; DR-84

Great Ribbon: SDR; GPR

ICS: ICS-CC-2000; ICS-CC-4099.1

Iimak: SH-36; SP-330; PrimeMark

Intermec: 051864-3; 053258-2; 054048-4; 054195-2

Japan Pulp and Paper: JP Resin 1; JP Resin 2 Blue; JP Resin 2 Red; JP Resin 2 Green

Kurz: K501

Markem: 716

Mid City Columbia: CGL-80; CGL-80HE

NCR: Matrix Resin; Matrix (suitable for indoor use only); PaceSetter; Promark II;
Ultra V

Pelikan: T016

Ricoh: B110A; B110C; B110CS

Sato: Premier 1

Sony: 4050; 4051; 4070; 4072; 4075; 4085; 5070; Signature Series Resin; Signature
Series Wax

UBI: HR03; HR04

Zebra: 5095; 5097; 5099; 5100; 5175; 5555

Laser Toner Printing:

Toner and Printer Components:

Hitachi HMT 446 toner kit for producing finished printed labels with Synergex
CT-1000 laser printer.

Die Cutting/ Converting

Rotary die-cutting is recommended. Fanfolding of labels is not recommended. Small labels should be evaluated carefully. Winding tensions should be kept at a minimum to help prevent adhesive from oozing.

Packaging

Finished labels should be stored in plastic bags.

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Storage Store at room temperature conditions of 72°F (22°C) and 50% relative humidity.

Shelf Life If stored under proper conditions, product retains its performance and properties for two years from date of manufacture.

Product Use All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

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