



Aircraft Belly Protective Tape

8641

Technical Data

March, 2007

Product Description

3M™ Aircraft Belly Protective Tape 8641 is an exceptionally tough 16-mil thick polyurethane coated with an aggressive, conformable 25-mil thick pressure-sensitive acrylic foam adhesive and is perforated with 15 mil holes, 1/4" apart.

3M 8641 tape comes in the following colors: Matte Black, Glossy White, Grey (#36118 and #36173).

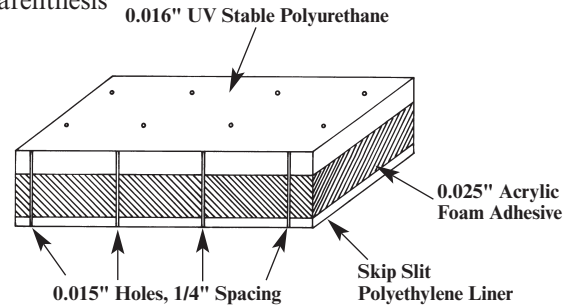
Typical Physical Properties and Performance Characteristics

Note: 1) The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

2) Metric values are listed in parenthesis

A. Dimensions:

Thickness:
Film: 0.016" (0.41 mm)
Adhesive: 0.025" (0.64 mm)
Total: 0.041" ± 0.004"
(1.04 mm ± 0.8 mm)
Roll Width: 24" max.
Roll Length: 36 yds.
Wt. per yd.² = 1.78 lbs. ± .16 lbs.



B. Physical Properties:

Property	Test Method	Units	Results
Tensile	ASTM-D882 Method A	lbs/in. (N/100mm)	93 (1629)
Elongation @ break	"	%	512
Tear Strength	ASTM-D1938	lbs. (kg.)	64.8 (29.4)
Taber Abrasion wt. loss	ASTM-C501 H18, 1kg., 1000 cycle	gms.	0.046
Dielectric Strength	ASTM-D1000	Volts/Mil	280

C. Adhesive Properties:

180° peel adhesion (Initial)	ASTM-D1000 20 min. dwell at R.T. 12"/minute peel	oz./in. (N/100mm)	
Substrate Surface:	Aluminum		75.1 (82.2)
	Stainless Steel		80.2 (87.8)
	Glass		77.5 (84.8)
	Polyurethane Paint		86.4 (94.6)
	Acrylic Lacquer Paint		39.8 (43.6)
	Acrylic Enamel Paint		75.2 (82.3)
180° peel adhesion (Ultimate)	ASTM-D1000 16 hrs. @ 158° dwell tested @ 12"/min.	oz./in.	
Mil-C-83286B polyurethane paint sanded w/320 paper		175+ oz./in. (foam splits)	

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Typical Physical Properties and Performance Characteristics (continued)

C. Environmental Exposure:

Florida – 6 months @ 5° south exposure	Discoloration negligible, slight gloss loss.
Arizona – 6 months @ 45° south exposure	No change

Suggested Surface Preparation Procedures

The entire area to be protected with 3M™ Aircraft Belly Protective Tape 8641 must be prepared as described below:

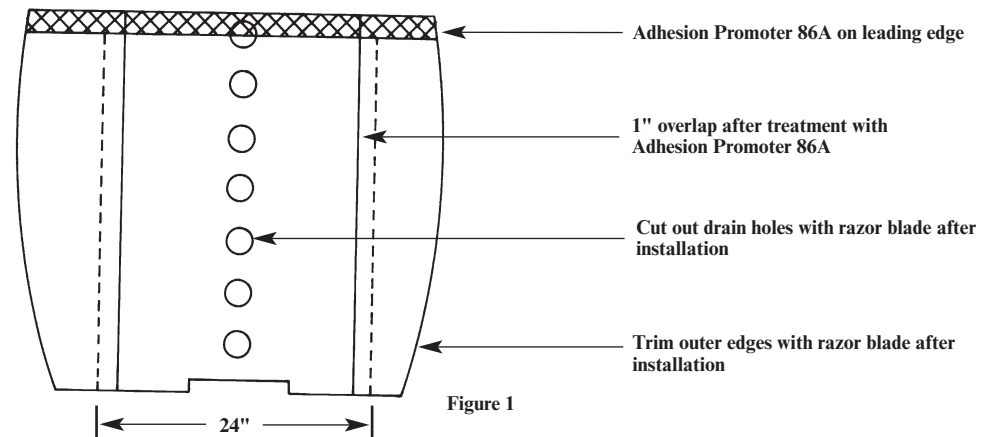
1. Thorough degreasing and debris removal.
2. Completion of all relevant structural repairs.
3. Completion of all required corrosion steps.
4. After the paint has cured for 48 hours, thoroughly scuff area to be treated with “fine” abrasive pad.
5. Cleanse with isopropanol.*

***Note:** When using solvents, extinguish all ignition sources and follow manufacturer’s precautions and directions for use.

Suggested Installation Procedures for Lockheed C130 Aircraft (other aircraft would require a similar procedure)

Nose Gear Door

1. Remove front door gear door and prepare surface as suggested above.
2. Apply 3M™ Adhesion Promoter 86A to front edge of door as shown in Figure 1.



3. Use 3 – 24" wide sections of 3M 8641 tape as shown. Mark approximate center of the tape with chalk and remove 2 liner strips nearest the center. With a person on each end of the tape, align the center of the tape with the nose gear door drain holes and apply the tape to the nose gear door.

Squeegee out the trapped air being careful not to stretch the 3M 8641 tape.

4. Remove remaining protective “Poly” liner a section at a time and squeegee air out.
5. Scuff left and right edges of center sheet with abrasive pad, clean with Isopropanol (or, if available, MEK which is preferred because it slightly “bites” into the urethane surface)* and allow to dry for 5 minutes, then apply an even coat of 3M 86A promoter and allow to dry for 20 minutes.

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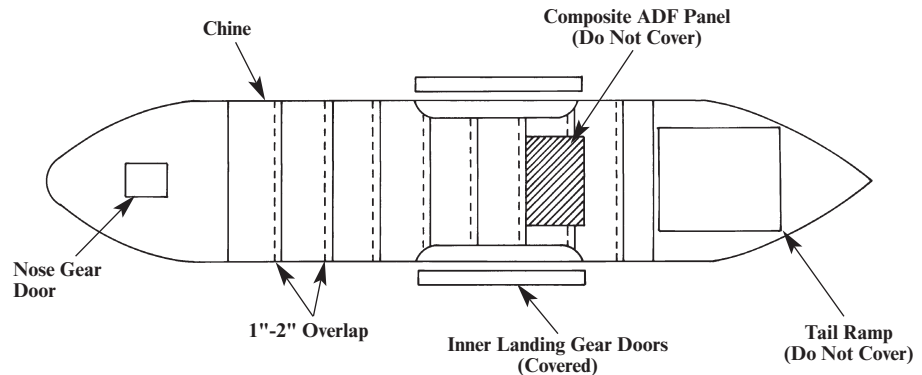
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Suggested Installation C130 (continued)

6. Remove 1 section of liner from the edge of the side sheets and apply progressively as before.
7. Main gear doors can be done in place using a similar procedure.

Belly Installation

8. Remove all belly mounted lights, antennas, etc. to provide a flat installation area. These areas may be trimmed free of 3M™ Aircraft Belly Protective Tape 8641 after installation and parts re-installed. **DO NOT COVER THE LARGE FLAT ANTENNAE UNLESS AUTHORIZED.**
9. Apply 3M™ Adhesion Promoter 86A to leading edge and chine areas in a 3" wide strip. Allow to dry 20 minutes.*



10. 3M 8641 tape will be installed front to rear, from side to side, beginning approximately 4 feet behind the nose gear door.
 - a. Measure and precut 3M 8641 tape to length +8" to allow 4" overlap of chine on each side. **DO NOT PRECUT MORE THAN ONE PIECE AT A TIME.**
 - b. Have 2 persons align the piece with a row of rivets to assure proper placement.
 - c. A third person removes the front 2" section of "Poly" liner and squeegees 3M 8641 tape in place, working from the aircraft centerline out toward the chines.
 - d. Remove remaining 2" "Poly" liner strips one at a time. **DO NOT REMOVE THE REAR MOST "POLY" LINER STRIP AT THIS TIME.** Use masking tape to hold this out of the way.
 - e. Install subsequent sheets as described above. Cut out vent holes, etc. as you proceed.
 11. Trim chine edges with a razor blade and squeegee in place.
 12. Treat all overlap areas per step "5" above. **BE CERTAIN TO TREAT ENTIRE OVERLAP AREA.**
 13. Remove masking tape and squeegee overlaps into place. Be certain to firmly squeegee the seam area.
 14. Use 3M™ Scotch-Weld™ Epoxy Adhesive DP-190 Grey to edge seal the leading edges of 3M 8641 tape. Edge seal along the chines as well. Edge sealer may be covered with discarded liner strips to aid in feathering.
- *Note:** When using solvents, extinguish all ignition sources and follow manufacturer's precautions and directions for use. Consult local air quality rules which may regulate product use.

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Repair Procedures

1. Cut out damaged or loose area.
2. Remove adhesive residue with 3M™ Citrus Base Cleaner or 3M™ Tape and Residue Remover
3. Clean with Isopropyl Alcohol and repair corrosion treatment as required.*
4. Allow 48 hours for paint to dry, then prepare as suggested in Surface Preparation Procedures on page 2.
5. Apply an even coat of 3M™ Adhesion Promoter 86A and allow to dry 20 minutes.*
6. Cut new piece of 3M™ Aircraft Belly Protective Tape 8641 to dimension + 2" and install.
7. Hold overlap areas back with masking tape and prepare overlap per Step 5 on page 3. Then squeegee into place.
8. Edge seal per Step 14 on page 3.

***Note:** When using solvents, extinguish all ignition sources and follow manufacturer's precautions and directions for use.

Precautionary Information

Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, visit www.3M.com/msds or call 1-800-364-3577 or (651) 737-6501.

For Additional Information

In the U.S., call toll free 1-800-235-2376, or fax 1-800-435-3082 or 651-737-2171. For U.S. Military, call 1-866-556-5714. If you are outside of the U.S., please contact your nearest 3M office or one of the following branches:

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