

SERVICE INSTRUCTION

SI No.: 01/24 - Initial Issue
Title: Envelope fabric repair with Ultramagic MagicPatch tape

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The technical content of this document is approved under the authority of DOA Nr. EASA.21J.351

Description:

This Service Instruction provides specific information and procedures necessary for the correct use of the MagicPatch envelope fabric repair tape.

This SI takes precedence to the instructions from section §2.5 in the Ultramagic Maintenance Manual, which refer to conventional patching materials. Such section continues to apply where materials other than MagicPatch are used.

Background:

As opposite to conventional sticky patches, MagicPatch enables field repairs of certain cuts or holes on the envelope regardless of the position and type of fabric, avoiding the immediate need for sewing work to safely release the balloon to service.

Applicability:

All nylon panels on Ultramagic Envelopes, including Ultralast, standard Ripstop (PU coated) and Ultralite fabrics, where a damage has been identified and its dimensions fall within Table 2.

The adoption of this Service Instruction is deemed to be part of the Pilot-Owner Maintenance.

NOTE: The use of MagicPatch is not valid on Nomex/Aramid fireproof fabric

NOTE: MagicPatch tape can be used on the outer layer of EcoMagic envelopes

NOTE: Observe local requirements on continuing airworthiness

Restrictions:

Table 1: Requirements on patch stitching

Position	STICKY PATCHES - STITCHING AROUND REQUIREMENT	
	BELOW EQUATOR	ABOVE EQUATOR
Perimetra l Stitching	OPTIONAL RECOMMENDED IN A DEFFINITIVE REPAIR	OPTIONAL ON A TEMPORARY REPAIR* MANDATORY IN A DEFFINITIVE REPAIR (1 row minimum)

* For up to 25 flight hours or 12 months (whichever occurs sooner), requiring flight-by-flight monitoring of the bonding

Table 2: Damage extension

Position	STICKY PATCHES - PERMITTED EXTENT			
	BELOW EQUATOR		ABOVE EQUATOR	
Type	Hole	Tear*	Hole	Tear**
Max Dimensions of a single patch	Ø10 cm	1.5 m	Ø 2.5 cm	0.4 m
Quantity	Up to 5 per panel Max.15 panels with sticky patches *Sum of all tear lengths below equator limited to 4m		Up to 2 per panel Max. 5 panels with sticky patches **Sum of all tear lengths above equator limited to 1 m	
Min distance with other patches	2.5 cm		10 cm	
Min distance to adjacent seams or tapes	0 cm		2.5 cm	

NOTE: Extents above are identical to those from Maintenance Manual section §2.5 for conventional adhesive patches

Procedure:

CAUTION: MagicPatch must only be used on dry fabric

WARNING: Always use two patches on a repair, one on each of the inner and outer fabric faces

- 1) Grant access to both sides of the panel (inside and outside)
- 2) Using a cloth or soft brush, gently remove any dust or debris from the fabric adjacent to the damage on both sides. Do not use cleaners nor solvents. Loose threads should be trimmed.
- 3) Measure the extent of the damage if necessary, making sure it meets the size limits from Table 2
- 4) Cut the pair of patches (for both inside and outside). Leave a minimum local overlap of 20mm ($\frac{4}{5}$ ") from the contour of the damage - or 25mm (1") where possible. MagicPatch tape is 70mm ($2\frac{3}{4}$ ") wide. Round all corners to prevent peeling.
- 5) Lay flat the damaged section so that it is free from wrinkles, and carefully apply the patch over the damage. Try to avoid wrinkles.
- 6) Should the repair require the overlay of several MagicPatch pieces (ref. Figure 1-a below), make sure the minimum overlap from step (4) above is adopted.
- 7) Repeat the process on the opposite face of the fabric. Apply pressure by hand or ideally, by using a rubberized rolling pin.
- 8) Pull gently the fabric adjacent to the repair to check the overall adhesion.
- 9) Refer to Table 1 and consider the feasibility of the stitching. If due, apply a row of stitching around the Patch as per the generic technique in the Maintenance Manual. Otherwise on damages above the equator, adopt the deferral of the stitching as appropriate.
- 10) Identify the panel number and gore. Log/sign off the patching.

NOTE: MagicPatch is not required to align with the warp or weft direction of the fabric

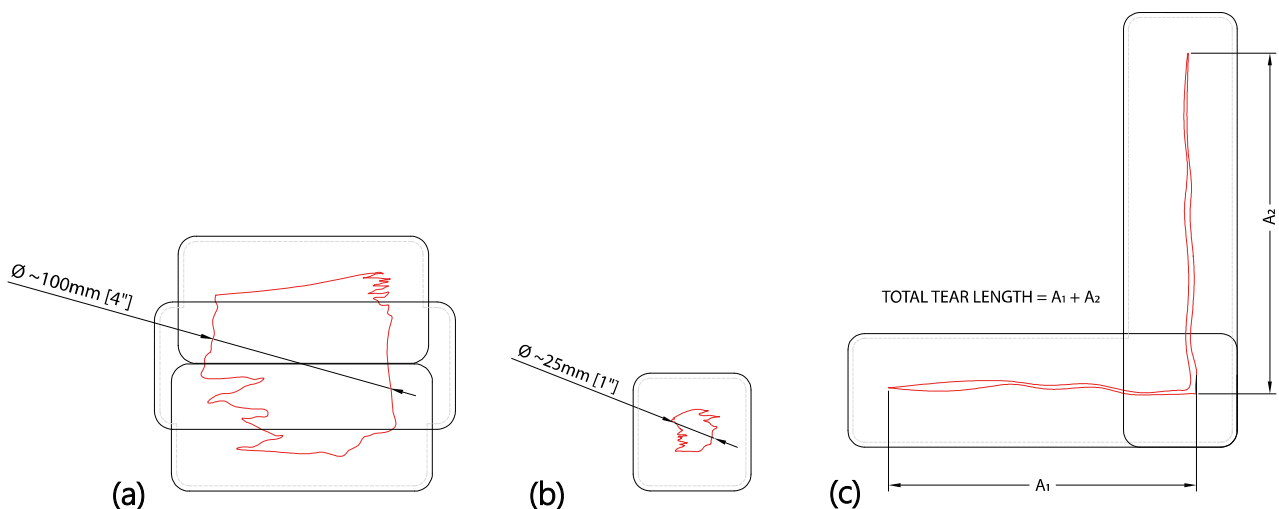


Figure 1 – Examples (not to scale)

(a) Maximum patch extent for a single hole **below** equator

(b) Maximum patch extent for a single hole **above** equator

(c) Tear combination patch (Total tear length = $A_1 + A_2$)

Material(s):

EM-09-0400 MagicPatch repair tape

NOTE: Genuine MagicPatch repair tape is delivered with EASA Form 1
Tape is available for bulk sale in metres. As the tape is translucent, no colour range is offered.
Conventional Spinnaker and Dacron tapes EM-09-00XX, EM-09-01XX, EM-09-02XX and EM-09-03XX continue to be a valid adhesive patch as per Maintenance Manual section §2.5.

Contact details:

Technical questions regarding this Instruction can be addressed to support@ultramagic.com
Where replacement materials are needed, please contact sales@ultramagic.com

Date of Approval	Name & Role	Signature
18/October/2024	Josep M Lladó DO Head	