

**Subject:** Replacing of the elastic fairing tapes (elastic lipseal) at the control surface gaps of aileron, horizontal and vertical tail, and flaps as well as of the ZZ-turbulator tapes.

**Serial number applicability:** All ASW 27 production series.

**Reason:** All serial numbers of the ASW 27 production series are fitted as standard with an elastic lipseal at the control surface gaps. The gaps at the aileron, flap, and at the elevator are sealed in addition by means of a Teflon sealing/slip tape (3M Scotch adhesive tape) on the hinge side. For the removal of control surfaces, e.g. for any maintenance or repair work, it is necessary to remove the relevant elastic lipseal.

**Action:** When an elastic lipseal needs to be removed only for maintenance or repair purposes, please observe the following:

For the purpose of disassembly of flap or aileron:

The elastic lipseal and the sealing/slip tape need to be removed only on the under side (where the control surface hinges are located).

For the purpose of disassembly of elevator:

The elastic lipseal and the sealing/slip tape need to be removed only on the upper side (where the control surface hinges are located).

Disassembly of the rudder:

It is not necessary to remove the elastic lipseal at the fin.

1. Carefully remove the old elastic lipseal in order to avoid any delaminations of the layers in this area. Remove any adhesive residue from the recessed step by means of synthetic resin thinners.
2. Accomplish any required inspection, maintenance or repair work at the control surfaces themselves and / or their hinges.
3. Cut the new elastic fairing tape and the sealing/slip tape into appropriate lengths (refer to the table under point "Material").

**Note:**

All surfaces must be completely clean, dry and free from dust and grease!

For cleaning of the glue areas pure "Nitro" thinner proved to be best (i.e. Fuldazell Spann- und Klebelack-Verdünnung 9600-01 from Rhodius). Then sand down protruding fibres which have been pulled out of the laminate by removing the old tapes. Use 220 grid sandpaper.

This can best be tested by sticking a Tesa tape strip to the cleaned surface and then pulling it off again to check that no further dust particles adhere to it.

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4. Wing under side and horizontal tail upper side:

See Fig. 1 and Fig. 2

Apply the sealing/slip tape (1) (3M Scotch Teflon Tape 30 mm wide) with a clearance of 16 mm to the front edge of the recessed step (22 mm wide).

Be careful that the sealing/slip tape lies slack over the gap and that flap and aileron are set to maximum negative deflection (whereas the elevator must be set to maximum positive deflection) so that later the Teflon sealing/slip tape is not stretched during normal full control deflections, so as to prevent full deflections.

Apply full deflections several times so that the sealing/slip tape (1) fits well into the gap; it must be firmly rubbed down on to the surface!

Then peel the protective backing from the elastic fairing strip - Mylar foil (2), 38/15mm wide, for the wings and Mylar foil (3), 38/12mm wide, for the elevators - and firmly stick the fairing tape on abutting the front edge of the recessed step in the wing and stabilizer respectively, by means of its adhesive film layer.

Finally, press the adhesive zones of the elastic fairing tape (2) or (3) respectively firmly down on the surface by means of a soft wooden block (e.g: Balsa) or a hard rubber roller!

For the horizontal tail in addition (see Fig. 2), a protective adhesive tape (4) is applied over the abutment of the front edge of the elastic fairing strip (3) and the step in the stabilizer. This tape should be as thin and moisture proof as possible; an example of a suitable tape would be white Tesa film No.104, 25 mm wide.

This protective tape serves to prevent the detachment of the front edge of the elastic fairing strip (elastic lipseal) which might result in dangerous flight characteristics.

5. Wing upper side and horizontal tail lower side:

See Fig. 3

Remove protective backing from elastic fairing strip (5) Mylar foil 22/12mm wide for the wings and Mylar foil (6) 22/15mm wide for the elevators and stick it on abutting the front edge of the recessed step (about 15 mm wide) in the wing upper side and stabilizer lower side respectively, by means of its adhesive film layer.

Finally, press the adhesive zones of the elastic fairing strips firmly down on the surface by means of a soft wooden block (e.g: Balsa), or a hard rubber roller!

Only for the stabilizer in addition (see Fig. 2), a protective adhesive tape (4) is applied over the abutment of the front edge of the elastic fairing strip (6) and the recessed step in the stabilizer.

No protective adhesive tape (4) is required on the wing.

6. Particular notes for the wing:

The position of the ZZ- turbulator tapes as well as the particulars for Mylar foils near the NACA intakes, near the control actuators of flap and aileron, at the gap between aileron and flap and at the end of the aileron are shown in Fig. 4 and in the table below given under "Material".

7. Vertical tail:

See Fig. 5

There are no recessed steps at the fin. As shown in Fig. 5 the elastic fairing strip (3) (Mylar foil, 30/12mm wide) is stuck on over the rudder-fin transition at the left and right side, then pressed firmly down on the surface, and secured against detachment by sticking on a protective adhesive tape (4) over the abutment of the front edge of the elastic fairing strip (elastic lip).

8 For fixing or replacing the ZZ- (zig-zag-) tapes on wings, horizontal and vertical tail refer to Fig. 4 and Fig. 6 for their location. When glueing on the zig-zag-tapes DO NOT flatten the front teeth (in the direction of the flight) by pressing them too far down into the glue film, otherwise their turbulator effect will be reduced!

9. For the positions of the ZZ - tapes of the inner winglet side, horizontal and vertical tail refer to Fig. 6 .

Material:

	Wing		Winglet innen side	Horizontal Tail		Ver <sup>1)</sup> Tail le/re	Ail. <sup>2)</sup> up
	up	low		up	low		
1 Sealing/slip tape Teflon tape, 30mm breit		2x 7,15m		2x 1,0 m			
2 Elastic fairing 38/15 scarved H:0,25mm Kl:0,13mm		2x 7,15m					
3 Elastic fairing 30/12 H:0,19mm Kl:0,22mm				1x 2,10m		2x 1,0 m	
4 Protective adhesive tape Tesafilm Nr.104, weite, 25mm		2x 7,15m		1x 2,15m	2x 1,02m		
5 Elastic fairing 22/12 scarved H:0,19mm Kl:0,22mm	2x 7,15m						6x*) 0,10m
6 Elastic fairing 22/15 H:0,19mm Kl:0,19mm					2x 1,0 m		
7 Zig-Zag-tape 60° 12mm wide, t=0,52mm, ZA 7mm		siehe A/B/D	2x 0,20m			2x 1,0 m	

1) = Vertical tail, left and right sides

2) = Ailerons

\*) = Use surplus tapes from upper wing surface, see Fig.4 E

A) = 4 times .1 m, lower wing surface at the actuator horns, see Fig. 4 A

B) = 20 times .03 m, lower wing surface in front of each NACA-intake, see Fig. 4 B

D) = 2 times .31 m, lower wing surface from aileron tip inboard, see Fig. 4 D

H) = Hostaphan or Mylar tape

Kl) = Adhesive film

The materials required can be obtained from Messrs. Schleicher GmbH u. Co.,  
Tel.: ++49 6658 890 or Fax : ++49 6658 8940.

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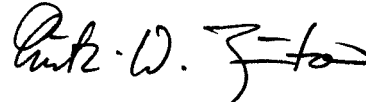
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Notes:

1. The actions under points 1. through 9. can be accomplished by a competent person.
2. Ensure that the elastic fairing (lipseal) is in tight contact even when the control surfaces and flaps are fully deflected. The secure and firm adhesion of the sealing Teflon-tape, the elastic fairing lip and the ZZ (zig-zag) turbulator tapes must be checked.

Poppenhausen, January 20, 1997

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The translation into English has been done by best knowledge and judgement; in any case of doubt the German original is controlling.

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Fig. 1:  
Wing lower side

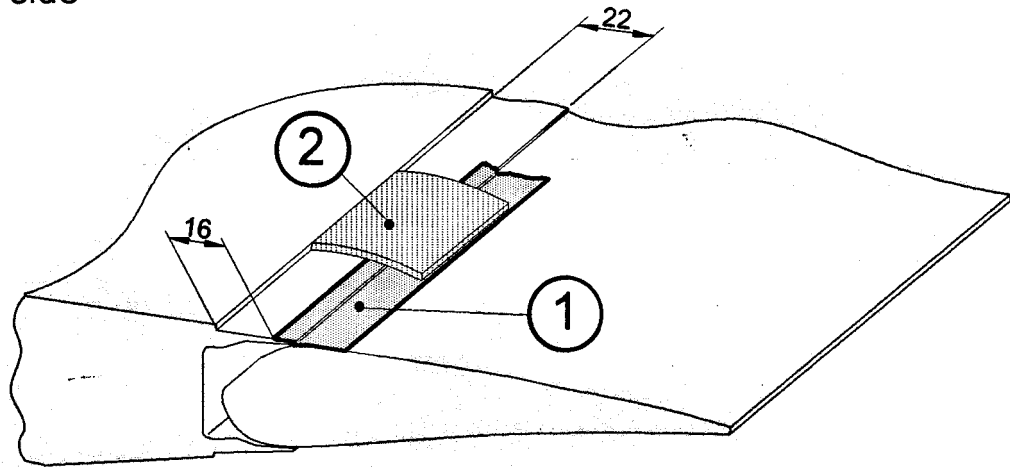


Fig. 2:  
Horizontal tail upper side

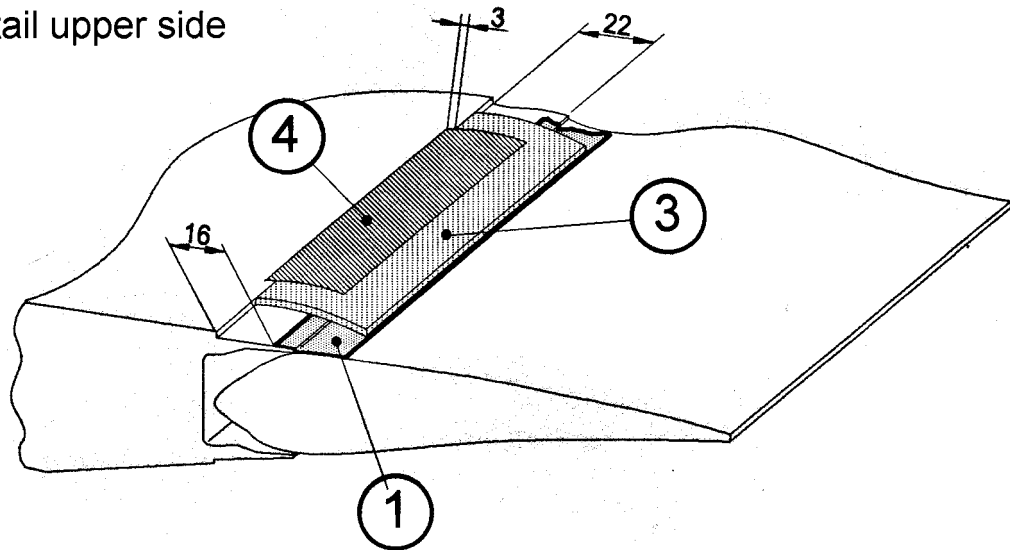


Fig. 3:  
Wing upper side and horizontal tail lower side

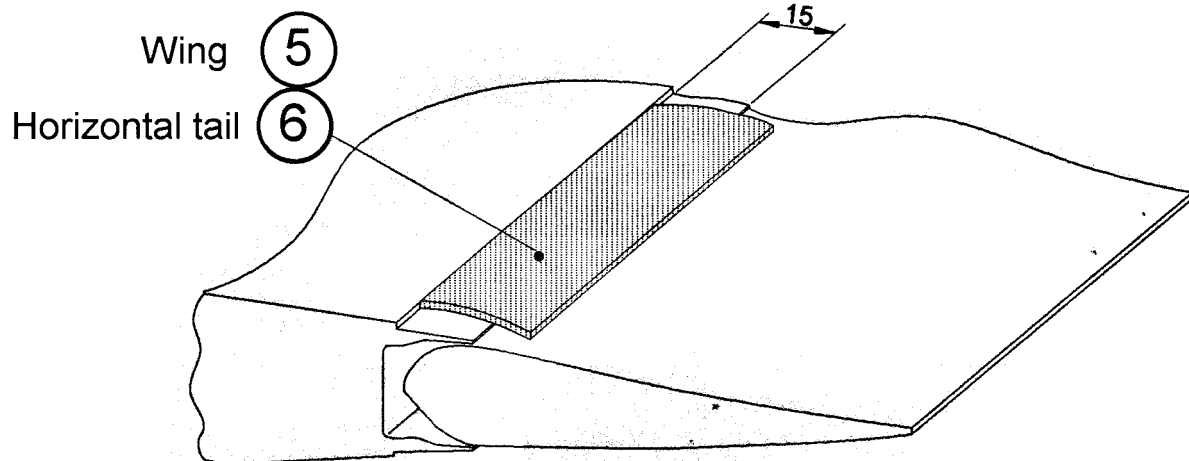
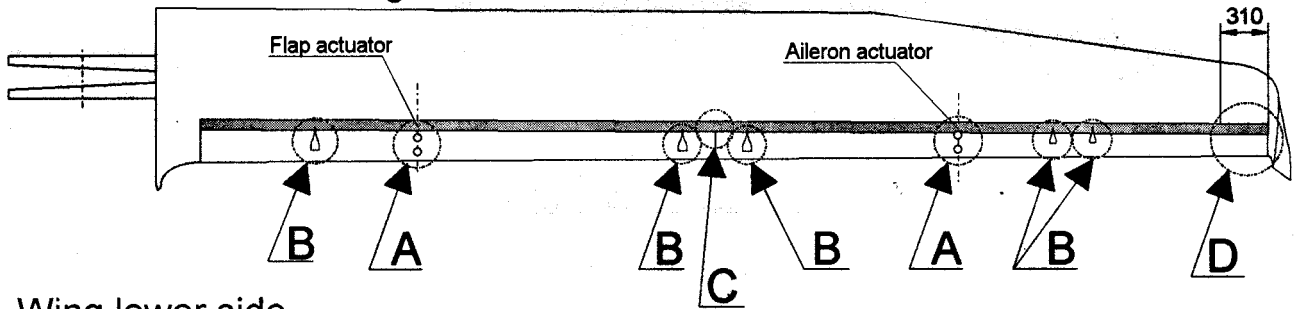
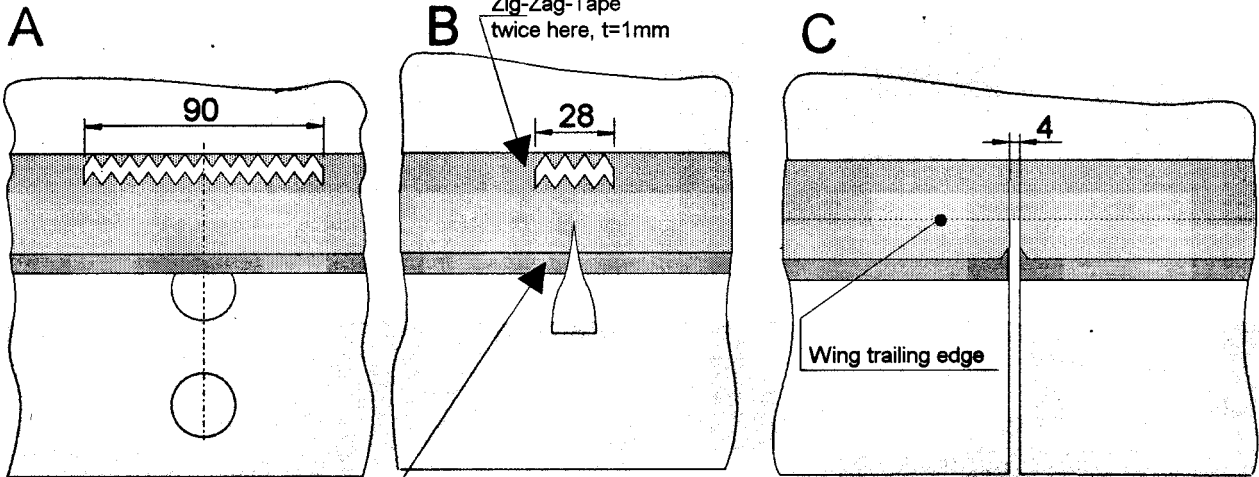


Fig. 4:  
 Particulars at the wing



Wing lower side



For flap position 2 (neutral, flap deflection -24 mm up) the sealing and fairing tape must be cut parallel with the NACA intake contour !

Wing upper side

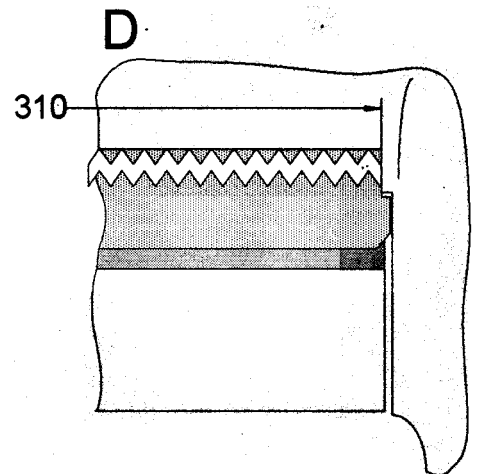
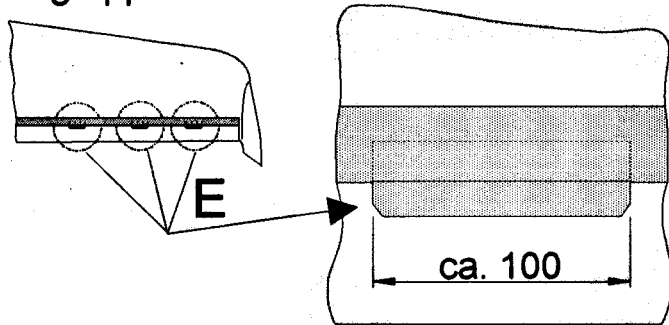


Fig. 5:  
 Vertical tail

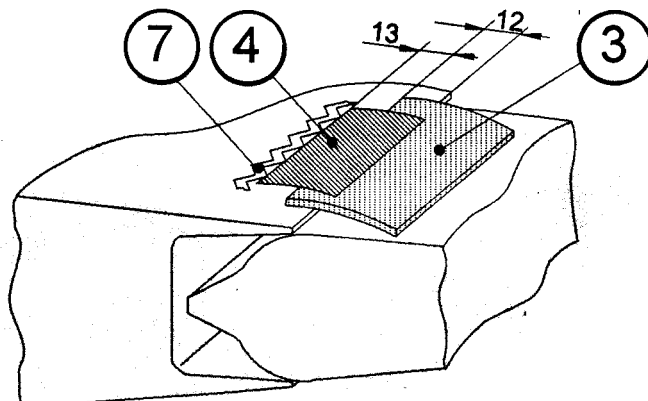
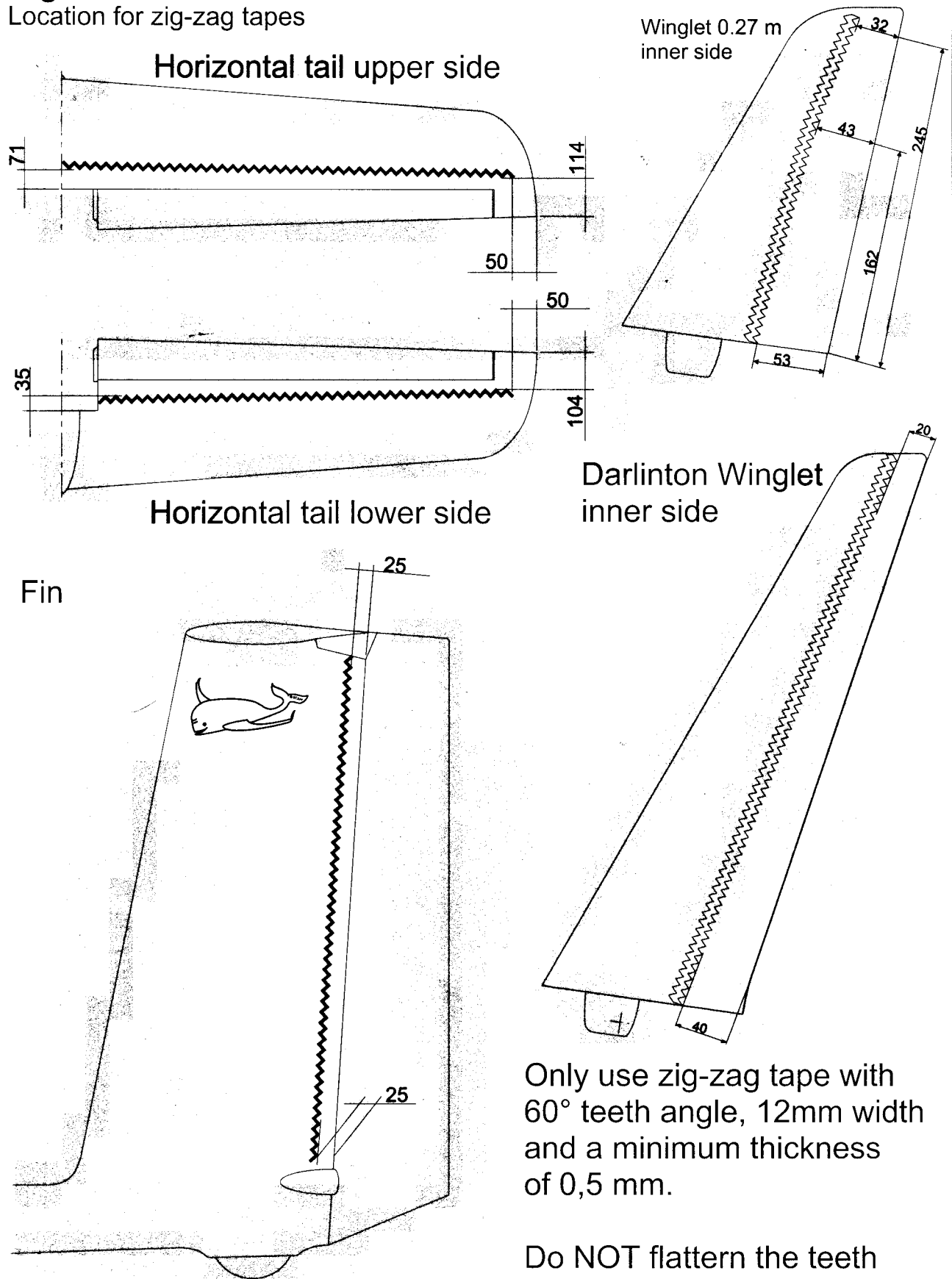


Fig. 6:

Location for zig-zag tapes



Only use zig-zag tape with 60° teeth angle, 12mm width and a minimum thickness of 0,5 mm.

Do NOT flatten the teeth of the tape !