

**Subject:** Replacing of the elastic fairing tapes (elastic lip seal) at the control surface gaps of aileron, horizontal and vertical tail.

**Applicability:** All ASW 27-18, ASW 27-18E

**Reason:** All ASW 27-18 series are fitted as standard with an elastic lip seal at the control surface gaps. The gaps at the aileron 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 lip seal and the sealing tape on the hinge side.

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

Disassembly of aileron and flaps:

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

Disassembly of the elevator:

The elastic lip seal 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 lip seal at the fin.

1. Carefully remove the old elastic lip seal in order to avoid any de-laminations 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 (e.g. Fuldazell Spann- und Klebelack-Verdünnung 9600-01 from Rhodius). Then sand down protruding fibres, which have been pulled out of the laminate when the old tapes were removed. Use 220-grid sandpaper. On the wing, where the step was not milled, but already created from the mould, do **not** sand, but only clean!

To test the surface to be clean, stick a transparent tape strip to the surface and then pull it off again. See, whether further dust particles adhere to it.

4. Wing **lower** side and horizontal tail **upper** side:

See Fig. 1 & 2

Apply the sealing/slip tape ① (3M Scotch Teflon Tape) with a clearance of 16 mm (inner wing) respectively 13mm (outer wing and elevator) to the front edge of the recessed step.

Be careful that the sealing/slip tape ① lies slack over the gap and that flap/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!

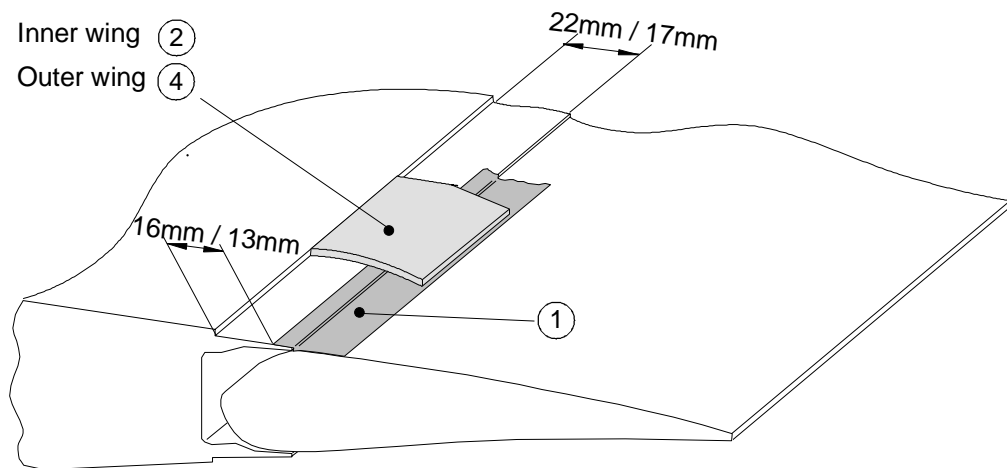
Then peel the protective backing from the elastic fairing tape, and firmly stick the fairing tape into the recessed step of the wing or stabilizer, leaving no gap at the front edge. Use fairing tape 38/15 ② for the inner wings lower side and the elastic fairing tape 30/12 ④&⑥ for the outer wings lower side and stabilizer upper side. The tapes for the wings are scarfed, this is not necessary for the stabilizer tape.

Finally, press the adhesive zones of the elastic fairing tape ②, ④ and ⑥ firmly down to the surface by means of a soft wooden block (e. g.: Balsa) or a hard rubber roller!

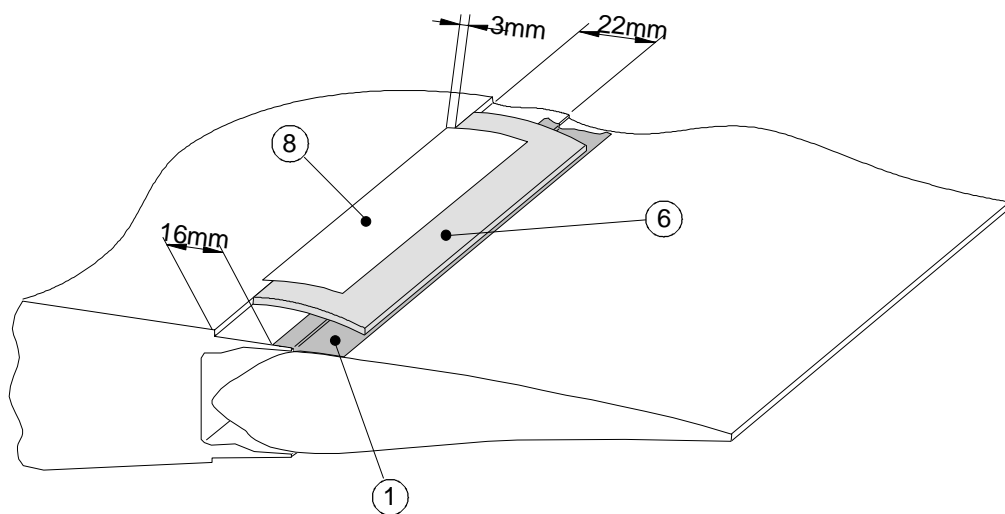
For the horizontal tail in addition (see Fig. 2), a protective adhesive tape ⑧ is applied over the joint at the front edge of the elastic fairing tape ⑥ and the step in the stabilizer. This tape should be as thin and moisture proof as possible; an example of a suitable tape would be white Tesa film No.104, 25 mm wide.

This protective tape serves to prevent the detachment of the front (leading) edge of the elastic fairing tape (elastic lip seal), which might result in dangerous flight characteristics.

*Fig. 1: Wing, lower surface*



*Fig. 2: Horizontal tail plane, upper surface*



At the junction between aileron and flap, the fairing tape must be cut in up to the wing (Fig 3).

At the ailerons, notches parallel to the inner contour of the NACA inlets must be cut into the fairing tape and into the sealing tape, when the flap is in setting 3 (Fig 4).

Fig. 3: gap between flap and aileron

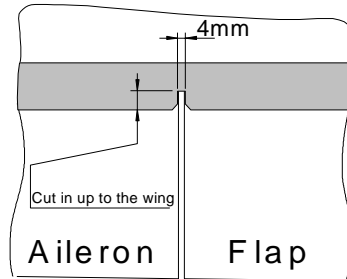
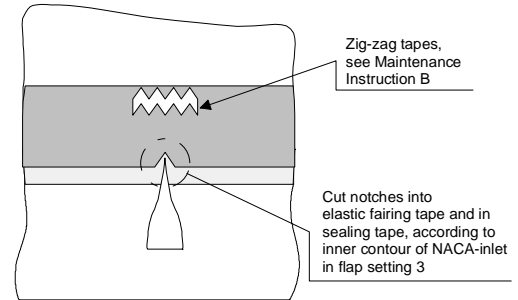


Fig. 4: Notches at outer NACA ducts



5. Wing upper surfaces and horizontal tail lower surfaces:

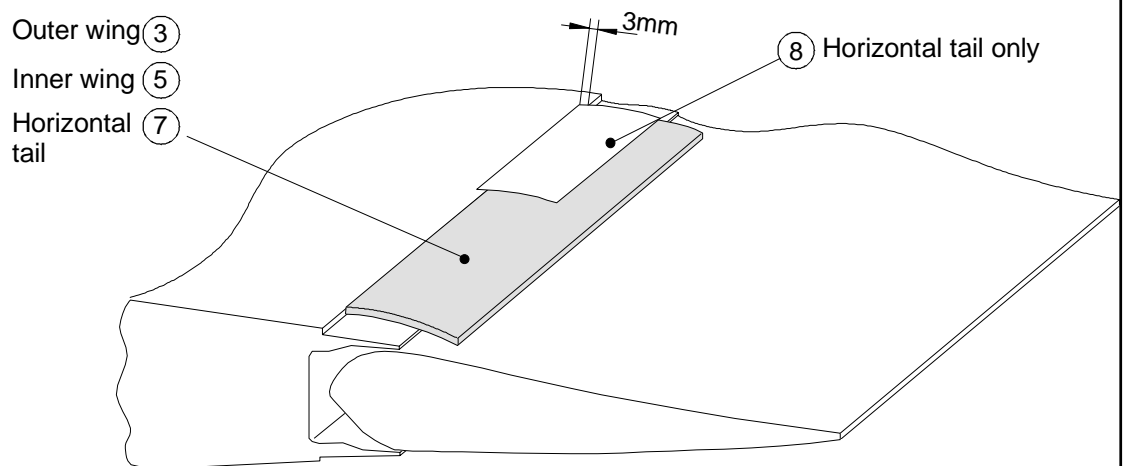
See Fig. 5

Remove the backing from the elastic fairing tape, and firmly stick the fairing tape into the recessed step of the wing or stabilizer, leaving no gap at the front edge. Use fairing tape 30/15 ③ for the inner wings upper side, fairing tape 30/12 ⑤ for the outer wings upper side, and fairing tape 22/15 ⑦ for the horizontal tail lower side

Finally, press the adhesive zones of the elastic fairing tapes ③, ⑤ and ⑦ firmly down on the surface by means of a soft wooden block (e.g.: Balsa), or a hard rubber roller!

Only at the stabilizer a protective adhesive tape ⑧ is applied over the joint the front edge of the elastic fairing tape ⑦ and the recessed step in the stabilizer.

Fig. 5: Wing, upper surface and horizontal tail, lower surface



6. Vertical tail:

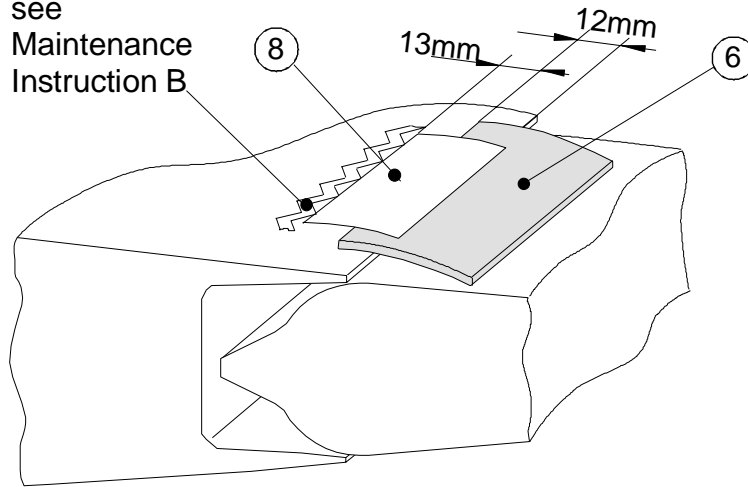
See Fig. 6

There are no recessed steps at the fin. As shown in Fig. 5 the elastic fairing tape, 30/12 ⑥ 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 ⑧ over the leading edge of the elastic fairing tape. Application of the zig-zag turbulator is described in Maintenance Instruction B.

*Fig. 6: Vertical Tail*

see  
Maintenance  
Instruction B



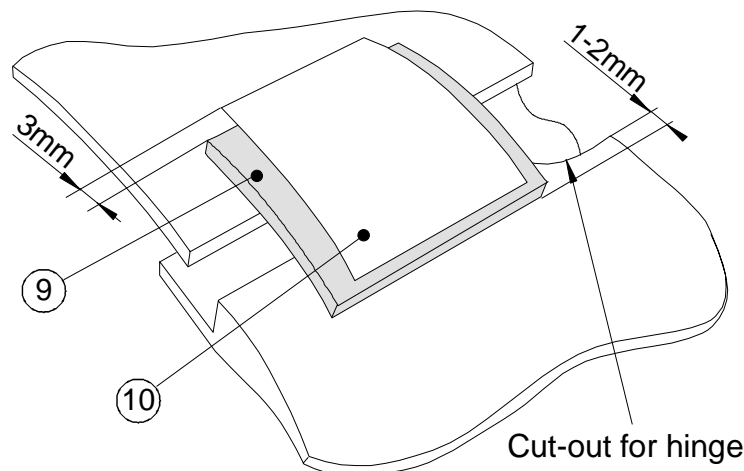
**7. Engine bay doors (only ASW 27-18E):**

See Fig. 7

Place the elastic fairing tape 38/15 ⑨ so that it exceeds the gaps at the hinges by 1-2mm. Press it firmly down on the surface, and secure it against detachment by sticking on a protective adhesive tape ⑩ over the leading edge of the elastic fairing tape, exceeding it by 3mm.

When no engine is installed, it is reasonable to cover the gaps all around the engine bay doors with the same tape used for the wing junctions.

*Fig. 7: Engine bay doors*



**Notes:**

1. The actions under points 1. through 7. can be accomplished by a competent person.
2. Ensure that the elastic fairing tapes is in tight contact even when the control surfaces are fully deflected. (Exception: Some gap is acceptable for the ailerons of the inner wing in flap settings 1-3 and full aileron upwards deflection.)

The secure and firm adhesion of both the sealing teflon-tape and the elastic fairing lip must be checked.

3. The re-installation of Zig-Zag-Tapes is described in **Maintenance Instruction B**.

**Material:**

	Side	Inner wing		Outer wing		Horizontal tail		Vertical tail	Engine bay doors
		upper	lower	upper	lower	upper	lower	both	
①	Sealing/slip tape, Teflon tape, 30 mm wide		2x 5,2m		18m: 2x3,4m 15m: 2x1,9m	1x 2,1m		2x 1,0m	
②	Elastic fairing tape 38/15, scarved		2x 5,2m						
③	Elastic fairing tape 30/15, scarved, low camber	2x 5,2m							
④	Elastic fairing tape 30/12, scarved				18m: 2x3,4m 15m: 2x1,9m				
⑤	Elastic fairing tape 30/12 scarved, low camber			18m: 2x3,4m 15m: 2x1,9m					
⑥	Elastic fairing tape 30/12					1x 2,1m		2x 1,0m	
⑦	Elastic fairing tape 22/15						2x 1,0m		
⑧	Protective adhesive tape, Tesafilm Nr. 104, white, 25 mm					1x 2,1m	2x 1,0m	2x 1,0m	
⑨	Elastic fairing tape 38/15								2x 1,35m
⑩	Protective adhesive tape, Tesafilm Nr. 104, white, 38 mm								2x 1,35m

Only with engine installed:

The elastic fairing tapes are described with their width and with the width of the adhesive film attached to it (e.g. 38mm / 15mm)

The material can be ordered from Alexander Schleicher GmbH & Co.,  
Phone: ++49 (0)6658-890 or -8929, FAX ++49 (0)6658-8940,  
or e-mail: [info@alexander-schleicher.de](mailto:info@alexander-schleicher.de)

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**Alexander Schleicher**  
GmbH & Co.

by order

(Michael Greiner)