

Subject: **Replacing the elastic fairing tape at the control surface gaps and at the gaps of the engine compartment doors.**

Installing and replacing the turbulators on wings and vertical tail.

Affected: AS 33 (all variants)

Reason: The control surface gaps of the AS 33 are covered as standard with elastic fairing tapes. The ailerons, flaps and the elevator gaps are additionally sealed by means of a sealing/slip tape on the hinge sides. The engine compartment doors are also sealed with elastic fairing tape.

For the removal of control surfaces, e.g. for any maintenance or repair work, it is necessary to remove the relevant elastic fairing tape and the sealing/slip tape on the control surface hinge sides.

Dimple turbulator tapes are affixed on the wing. On the vertical stabilizer, there is a combined tape (zig-zag and elastic fairing tape). Damage or deformation can make replacement necessary.

Action: If the elastic fairing tape needs to be removed for maintenance or repair of the control surfaces, please observe the following:

For the purpose of disassembly of flap or aileron:

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

For the purpose of disassembly of elevator:

The elastic fairing tape 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 and the engine compartment doors:

It is not necessary to remove the elastic fairing tape!

1. Carefully remove the old elastic fairing tape in order to avoid any delamination of the layers in this area. Remove any adhesive residue from the recessed step by means of synthetic resin thinners. With careful handling a Rubber Eraser Pad can be very helpful.
2. Accomplish any required inspection, maintenance or repair work on the control surfaces themselves and / or their hinges. Notes on removal and re-assembly of control surfaces can be found in section 10 of the Maintenance Manual.
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 Acetone (min. 99%) has proven to be best.

Wing lower side and horizontal tail upper side:

See Fig. 1 to 5

Apply the sealing/slip tape [1] with a clearance of 15 mm / 0.59" (wing) resp. 12 mm / 0.47" (horizontal tail) to the front edge of the recessed step. Ensure that the sealing/slip tape lies slack over the gap. The flap and aileron are set to maximum negative deflection and the elevator to maximum pushed deflection (positive). During normal full control deflections, the sealing/slip tape must not be stretched, so that full deflections are not hindered.

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!

Remove the protective backing from the elastic fairing tape and firmly stick it into the recessed step of the wing's lower side resp. horizontal stabilizer's upper side, leaving no gap at the front edge. Use elastic fairing tape 30/15 [2] for the wing and the elastic fairing tape 30/12 [5] for the horizontal stabilizer upper side. The elastic fairing tapes for the wings are scarfed on their trailing edge.

Finally, press the adhesive zones of the elastic fairing tape [2/5] firmly down on the surface using a soft wooden block (e.g: Balsa) or a hard rubber roller! Make sure that the substrate is not damaged.

Fig. 1
Wing,
lower side

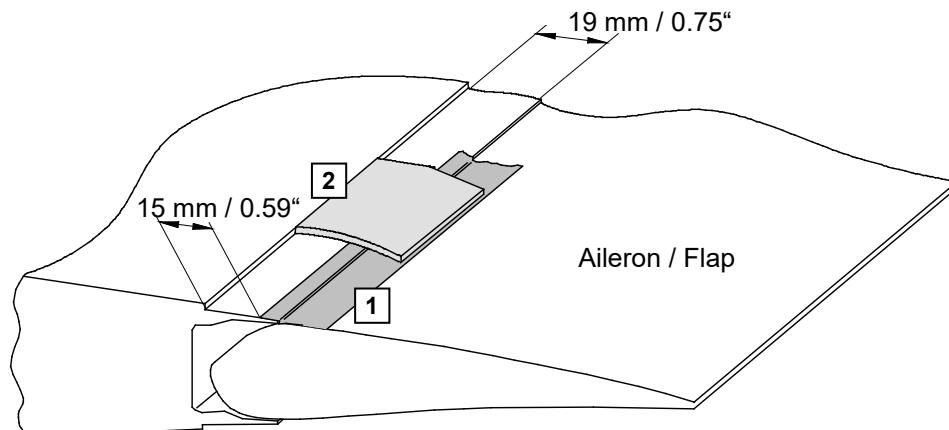
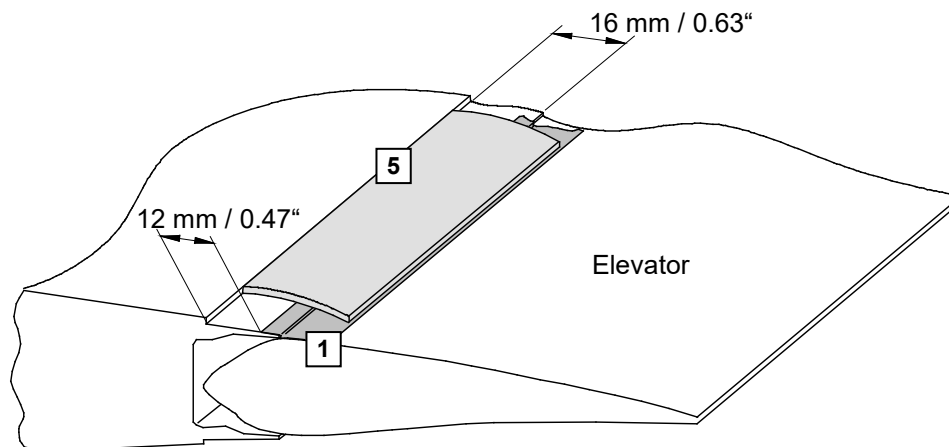


Fig. 2
Horizontal
tail, upper
side



On the lower side of the **inner wing** at the junction between aileron and flap, the elastic fairing tape must be cut up to the wing (*Fig. 3*).

Fig. 3

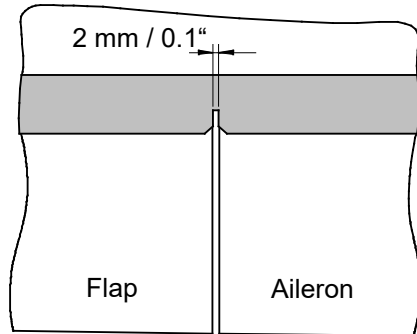
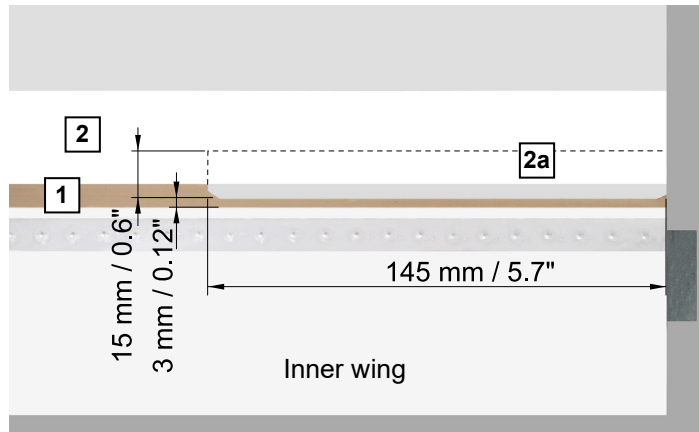
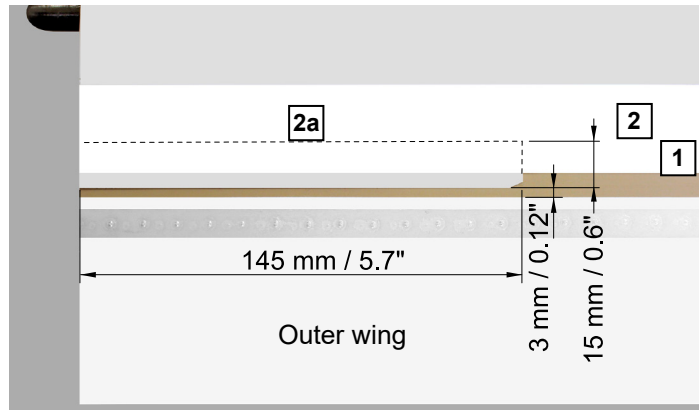


Fig. 4



On the wing/wing joint of the lower surface of the inner wing, a 145 mm long piece of tape [2a] is affixed under the elastic fairing tape [2], but not onto the fairing/slip tape [1]. This piece is cut to the correct size using a piece of the elastic fairing tape [2]. The adhesive film is only as wide as the covering elastic fairing/slip tape. This tape prevents the threading in of the elastic fairing/slip tape [2] at the bearing cut-out.

Fig. 5



The same procedure is followed for the outer wing joint (18 m and 15 m).

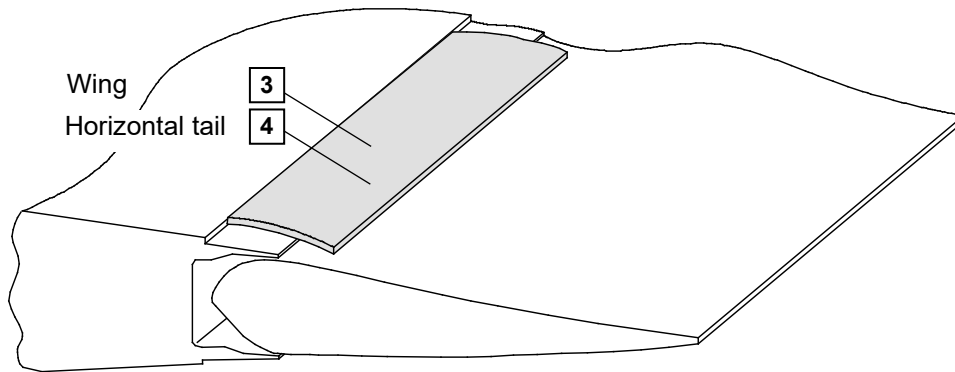
Wing upper side and horizontal tail lower side:

Remove the protective backing from the elastic fairing tape and firmly stick it into the recessed step of the wing upper side resp. stabilizer lower side, leaving no gap at the front edge. The following elastic fairing tapes are used:

Wing upper side: Elastic fairing tape 25/15 [3] scarfed
Horizontal tail lower side: Elastic fairing tape 22/15 [4]

Finally, press the adhesive zones of the elastic fairing tape [3/4] firmly down on the surface using a soft wooden block (e.g. Balsa) or a hard rubber roller! Make sure that the substrate is not damaged.

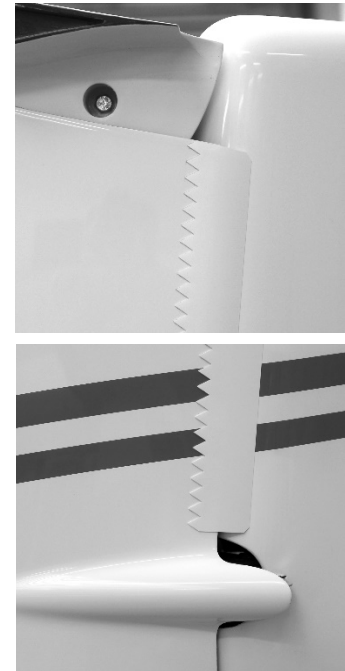
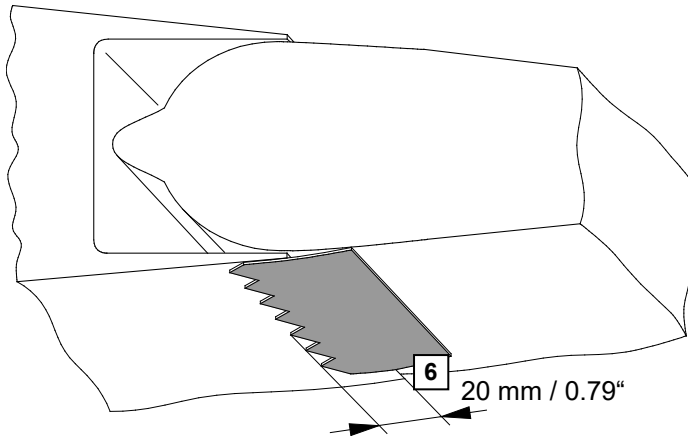
Fig. 6



Vertical tail:

There are no recessed steps at the fin. On both sides a combined tape (zig-zag and elastic fairing tape) 38/19/0.8 [6] is affixed with a distance of 20 mm / 0.79" from the spikes to the end of the fin. Press or roll it firmly down.

Fig. 7



Material:

		Inner wing		Outer wing 18 m		Outer wing 15 m		Horizontal tail		Vertical tail
		upper	lower	upper	lower	upper	lower	upper	lower	both
[1]	Sealing/slip tape, 25 mm / 1" wide		2 x 4.9 m 16.1 ft		2 x 3.9 m 12.8 ft		2 x 2.4 m 7.9 ft	1 x 2.1 m 6.9 ft		
[2] [2a]	Elastic fairing tape 30/15 * convex, scarfed		2 x 5.0 m 16.4 ft (incl. 2a)		2 x 4.0 m 13.1 ft (incl. 2a)		2 x 2.6 m 8.5 ft (incl. 2a)			
[3]	Elastic fairing tape 25/15 * convex, scarfed	2 x 4.9 m 16.1 ft		2 x 3.9 m 12.8 ft		2 x 2.4 m 7.9 ft				
[4]	Elastic fairing tape 22/15 * convex							2 x 1.0 m 3.3 ft		
[5]	Elastic fairing tape 30/12 * convex							1 x 2.1 m 6.9 ft		
[6]	Combined tape 38/19/0.8 *									2 x 1.0 m 3.3 ft

* The elastic fairing tapes are described by their width and the width of the adhesive film attached to it (e.g. 25 mm / 15 mm). **But it is also possible that the elastic fairing tape and the adhesive film are delivered as separate items.**

Engine compartment doors:

See Fig. 8 - 10

The elastic fairing tape 38/15 [7] is affixed along the lower edge of the engine compartment door with an overhang of 8 mm / 0.31" and pressed firmly down on the surface. The ends will be cut as shown in Fig. 8 and 9. At the contact point between the front and rear elastic fairing tapes a 25 mm wide piece of protective tape [8] is affixed over the bevel cut (Fig. 10).

Fig. 8:

Front end

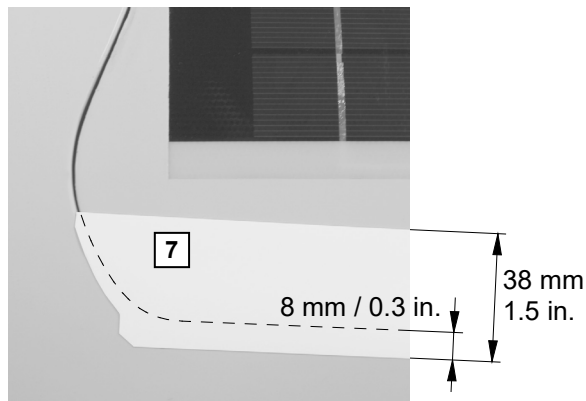


Fig. 9

Rear end

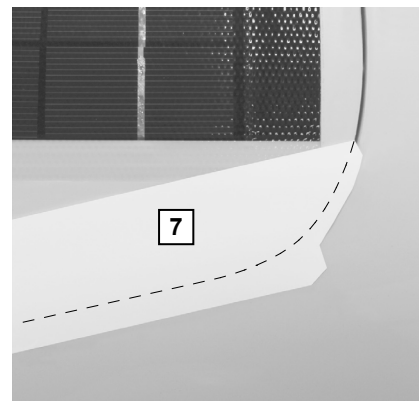
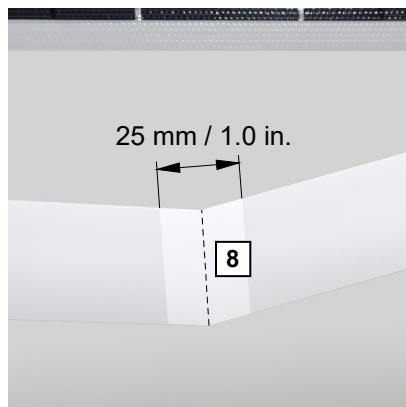


Fig. 10:

Connection



Material:

		Engine compartment doors
[7]	Elastic fairing tape 38/15 * convex	2 x 1.4 m 4.6 ft
[8]	Protective adhesive tape, Tesafilem No. 104, white, 25 mm / 1"	0.1 m 0.3 ft

* The elastic fairing tapes are described by their width and the width of the adhesive film attached to it (e.g. 38 mm / 1.5 in). **But it is also possible that the elastic fairing tape and the adhesive film are delivered as separate items.**

Turbulators on the wing lower side

The position of the dimple turbulator tape on the bottom wing surface is measured from the recessed step (tape bed) for the elastic fairing tape (Fig. 11 - Measure „x“). The position of the measurements in the spanwise direction can be taken from the tables contained in Fig. 12 to 14. For the outer sections of the outer wings the dimple turbulator tape can be affixed directly by its trailing edge to the elastic fairing tape [2].

Fig. 11

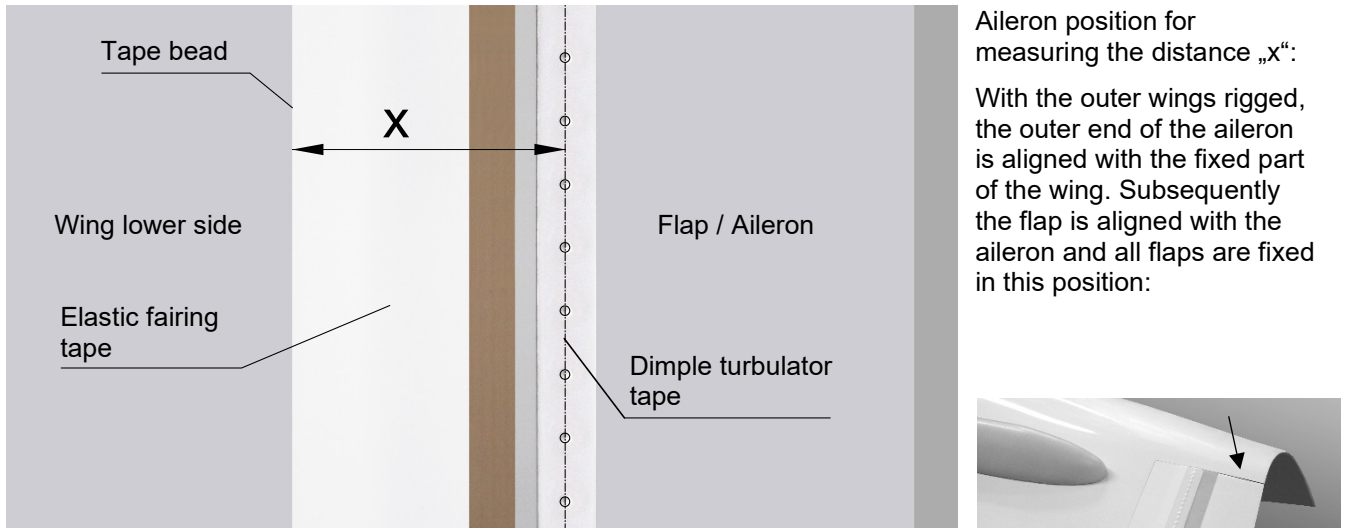


Fig. 12

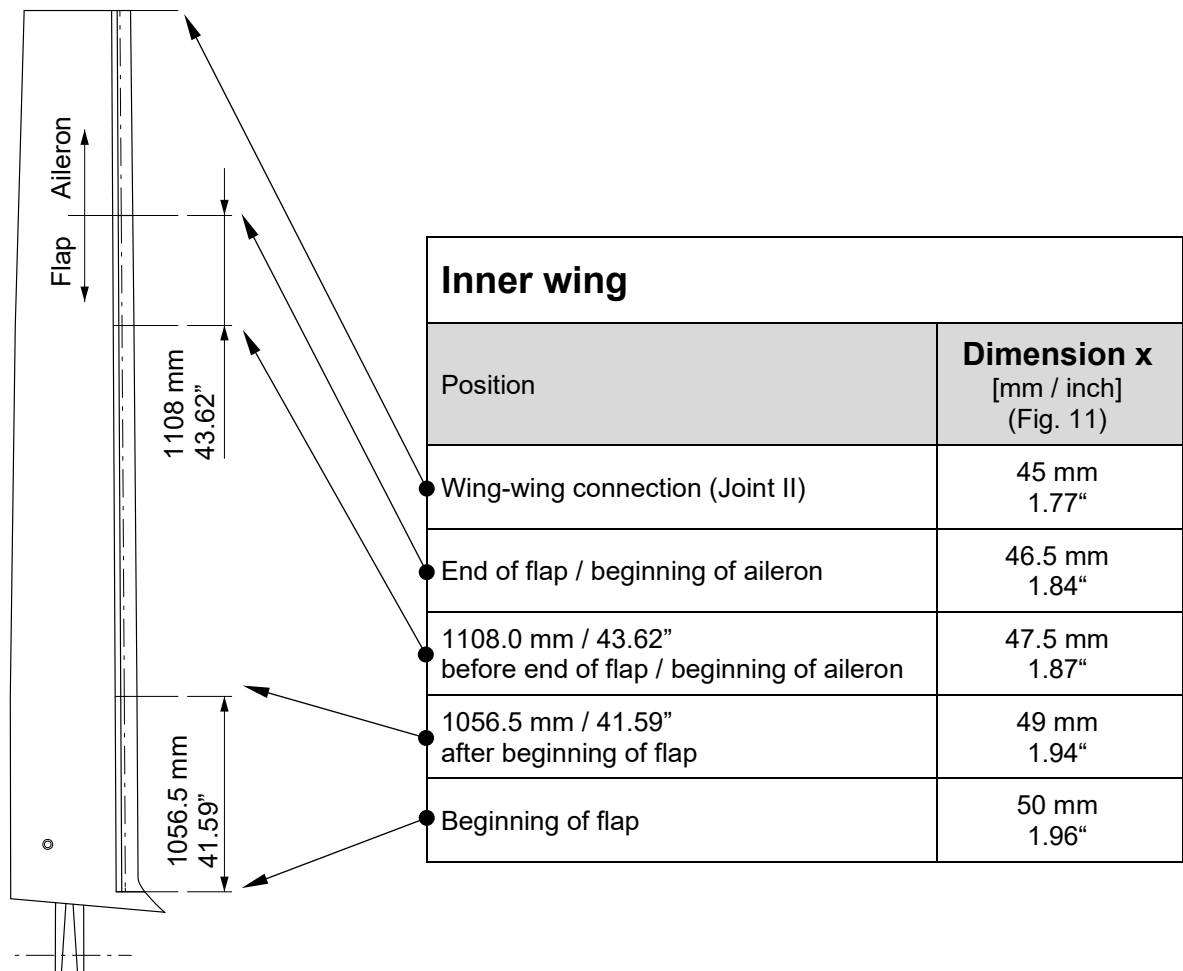
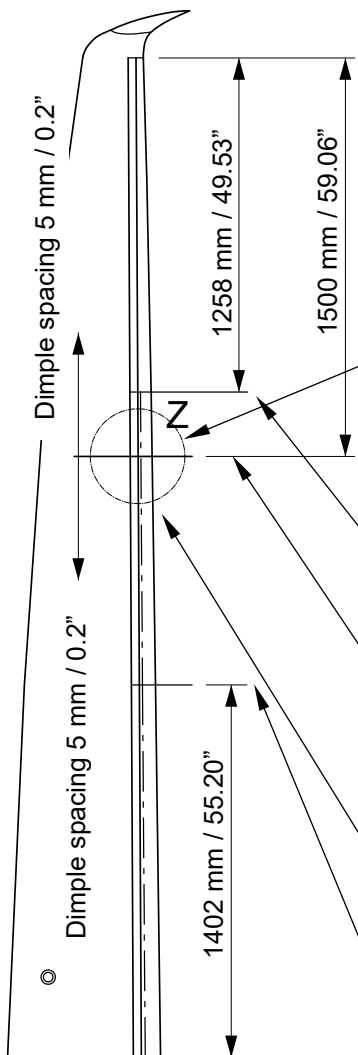
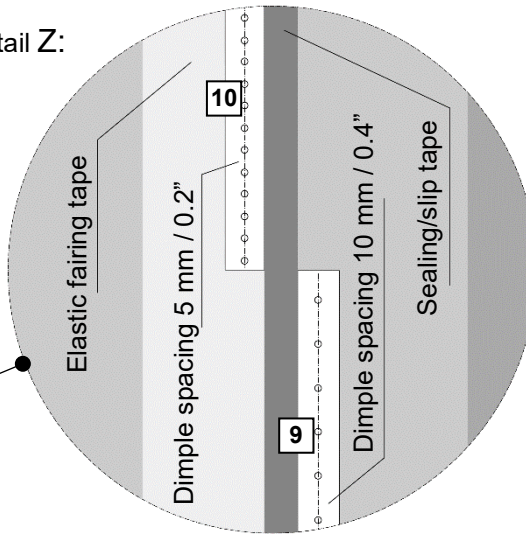


Fig. 13



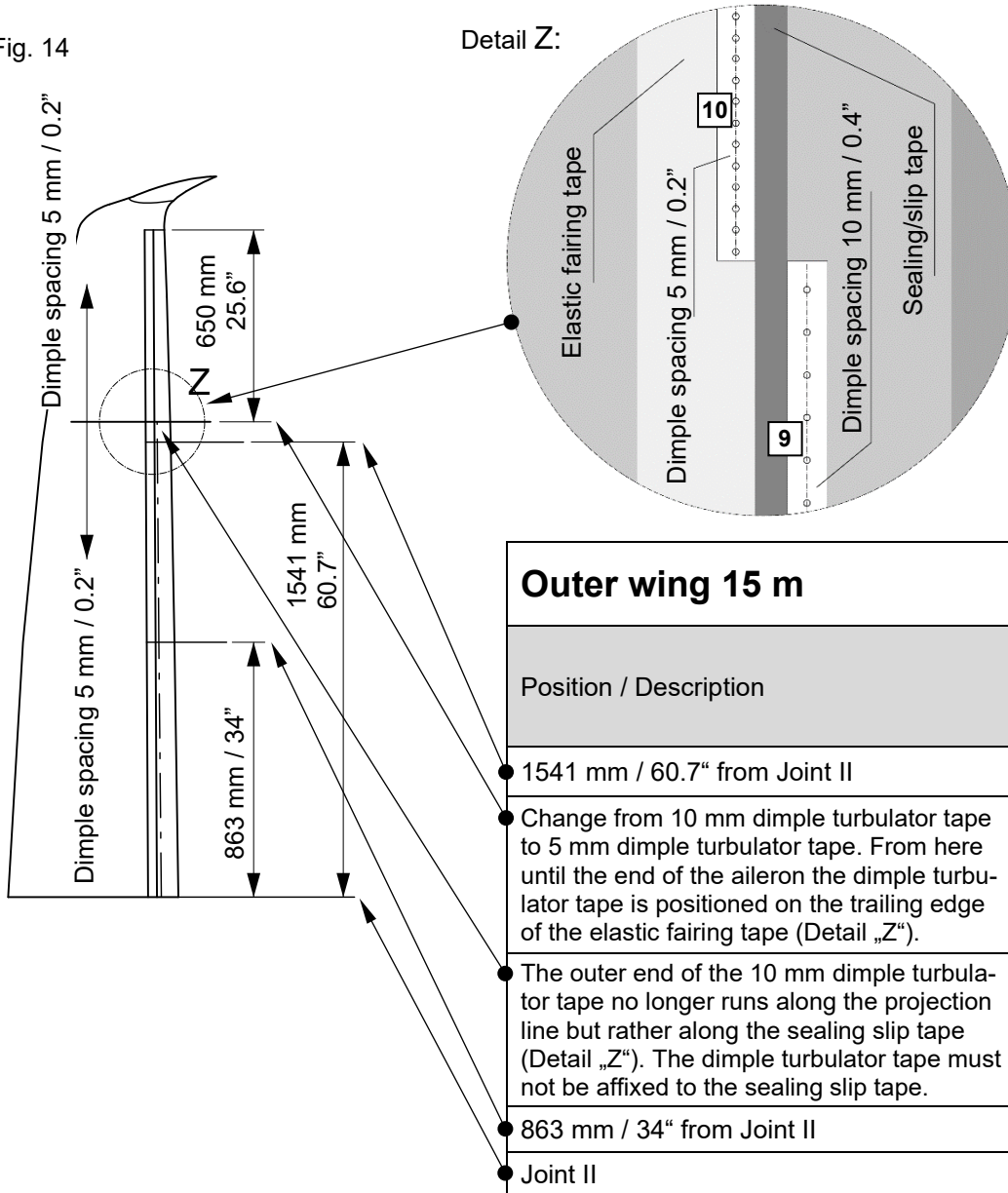
Detail Z:



Outer wing 18 m

Position / Description the	Dimension x [mm / inch] (Fig. 11)
<ul style="list-style-type: none"> Last measuring point for projecting the dimple turbulator tape position from the previous measuring point at „position 1402 mm“. 	40.0 mm 1.57"
<ul style="list-style-type: none"> Change from 10 mm dimple turbulator tape to 5 mm dimple turbulator tape. From here until the end of the aileron the dimple turbulator tape is positioned on the trailing edge of the elastic fairing tape (Detail „Z“). 	--
<ul style="list-style-type: none"> The outer end of the 10 mm dimple turbulator tape no longer runs along the projection line but rather along the sealing slip tape (Detail „Z“). The dimple turbulator tape must not be affixed to the sealing slip tape. 	--
<ul style="list-style-type: none"> 1402 mm / 55.20" from Joint II 	42.0 1.65"
<ul style="list-style-type: none"> Joint II 	45.0 1.77"

Fig. 14



Outer wing 15 m

Position / Description	Dimension x [mm / inch] (Fig. 11)
1541 mm / 60.7" from Joint II	40.0 mm / 1.57"
Change from 10 mm dimple turbulator tape to 5 mm dimple turbulator tape. From here until the end of the aileron the dimple turbulator tape is positioned on the trailing edge of the elastic fairing tape (Detail „Z“).	--
The outer end of the 10 mm dimple turbulator tape no longer runs along the projection line but rather along the sealing slip tape (Detail „Z“). The dimple turbulator tape must not be affixed to the sealing slip tape.	--
863 mm / 34" from Joint II	41.0 mm / 1.61"
Joint II	45.0 mm / 1.77"

Material:

		Inner wing	Outer wing 18 m	Outer wing 15 m
[9]	Dimple turbulator tape (10 mm space)	2 x 4.8 m 2 x 15.75 ft	2 x 2.3 m 2 x 7.55 ft	2 x 1,7 m 2 x 5.58 ft
[10]	Dimple turbulator tape (5 mm space)	--	2 x 1,5 m 2 x 5.0 ft	2 x 0,7 m 2 x 2.3 ft

The material can be ordered from Alexander Schleicher:
Phone ++49 (0) 6658-890 Fax: ++49 (0) 6658-8940 E-mail: info@alexander-schleicher.de

Poppenhausen, 16.09.2021

Alexander Schleicher
GmbH & Co.

by order

(M. Münch)