

Vulcanized Bias-Butt (Scab) Splicing Procedures

**UsFlex I & II
Conveyor Belt**

Contents

Section 1	Health and Safety	Page 2
Section 2	Tools and Equipment	Page 3
Section 3	Materials	Page 5
Section 4	Laying Out the Belt Ends	Page 7
Section 5	Stepping and Preparing	Page 12
Section 6	Splice Assembly	Page 15
Section 7	Curing	Page 18
Section 8	Splice Layout Diagrams (UsFlex I & II)	Page 19

Scope

These instructions refer to the materials and procedures involved in the vulcanized splicing of **Fenner Dunlop's UsFlex** straight warp belt constructions. Splicing follows the bias, scab (step) design. This technique incorporates a specially engineered scab fabric which bridges a bias prepared carcass joint. This splice technique is recommended for **UsFlex I & II** rubber belting having a cover thickness greater than 3/32".

Fenner Dunlop cannot be held responsible for any modification or shortcut of these procedures. Any such shortcuts or departures could jeopardize the optimum splice performance.¹

¹ **NOTE:** All recommendations for the use of any product or products described herein and all other data or information set forth in this document, whether concerning such products or otherwise, are furnished without any guarantee, warranty, representation or inducement of any kind, whether express or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose, and Fenner Dunlop expressly disclaims liability under any theory including, without limitation, contract, negligence, misrepresentation or breach of any obligation relating to the recommendation, data or information set forth herein. Readers and customers are encouraged to conduct their own tests. Before using any product, read its label and all related instructions.

UsFlex I & II Scab Splice Manual

1. Health and Safety

The following instructions, procedures, and cautions should be observed at all times during the preparation and manufacture of **Fenner Dunlop's UsFlex** vulcanized joints.

- 1.1 All electrical and mechanical equipment must comply with local site regulations.
- 1.2 Make sure the conveyor belt is properly tagged out (de-energized and secured), prior to initiating any work on the belt or splice.
- 1.3 The cements and primers specified are solvent based. The following precautions should be taken to ensure maximum safety.
 - a) The work area should be well ventilated.
 - b) Do not swallow or inhale vapor.
 - c) Avoid all contact with eyes, skin, and clothing. Rubber gloves and eye protection should be worn at all times when handling these products.
 - d) Accidental spills should be cleaned up immediately.
 - e) Follow the instructions on labels and MSDS sheets (includes First Aid procedures for treating persons affected by mishandling these products).
- 1.4 **Fire and Explosion Hazard**
 - a) Materials are flammable. Keep away from heat, sparks and flame.
 - b) In case of fire, do not use water. Use chemical foam or Carbon Dioxide.
 - c) Keep all containers closed when not in use.
- 1.5 Dispose as a hazardous waste, in accordance with applicable regulations.

UsFlex I & II Scab Splice Manual

2. Tools and Equipment

The vulcanized splicing of any conveyor belt can involve an assortment and variety of tools and equipment. The tools and equipment will vary according to the craftsmen that use them.

The following list provides a guide to the items required. This list is by no means complete nor does it constitute any endorsement or recommendation for use.

2.1 Hand Tools

- a) Measure device – tape or ruler
- b) Straight edge or chalk line, various squares
- c) Marking pencil or pen
- d) “One-ply” knife (or knives)
- e) Other knives (mill, offset, bevel, utility, long, “v”-trim, etc.)
- f) Pincers
- g) Prodder (or “ply-lifter”)
- h) Stitchers
- i) Rollers
- j) Awl
- k) Sandpaper (50 grit) – whetstone
- l) Fabric shears
- m) Assorted clamps, chains and “come-a-longs”

2.2 Power Tools

- a) Stripping/pulling winch (or “tugger”)
- b) Wire-wheel rotary buffer (800-1200 max rpm)
- c) Right-angle grinder (1800 max rpm)

2.3 Diagnostic Tools

- a) Durometer – check hardness of belt ends and finished splice
- b) Thickness gauge
- c) Thermocouples – verify actual platen temperature

2.4 Vulcanizing Equipment

- a) Suitable surface area to allow completion of splice in one (1) cure
- b) Size sufficient to allow for “heat” loss along edges of the platen surfaces.
- c) Constant and uniform heat with easily monitored / adjustable controls
- d) Temperature range of 300°F to 320°F (with \pm variance of 5°F)
- e) Uniform pressure, 100 psi minimum capability

UsFlex I & II Scab Splice Manual

- f) If necessary, compliance with local MSHA requirements
- g) Capable of curing belts up to 2" thick
- h) Edge or "blocking" irons (1/16" less than belt thickness). When possible seek width / thickness ratios of 6:1.

2.5 Miscellaneous

- a) Required personal safety equipment (e.g., gloves, glasses, work boots, hardhat, etc.)
- b) Paint brushes, assorted sizes
- c) Cleaning rags, foxtail brushes, etc.

UsFlex I & II Scab Splice Manual

3. Materials

3.1 UsFlex splice cements and calendered rubber items have a dated shelf life of six (6) months. However, if refrigerated (preferably < 50°F), the useful life can be extended to twelve (12) months. Store these materials in a cool, dark and safe area and always keep away from sunlight.

The materials provided in Tables 3A and 3B are required to complete a typical **UsFlex** vulcanized splice.

Table 3A

Splice Material Selection Guide					
Belt Specification	Cover Stock	Tie Gum	Cement	Primer	Solvent
AS-A AS-M AS-N MSHA-F MSHA-FF MSHA-FAR MSHA-FFAR CSA-FFAR CSA-FF MSHA-SFAR MSHA-FFOR CSA-FFOR Granite Platinum Titanium Abrader Grade II Matchless Matchless Plus MOR ORWP MOG Guardian Guardian AR Fire Boss Classic Grain Handler	Group 1	Group 1	Group 1	Group 1	Toluol
White Granite	Group 1 White	Group 1 White	Group 1 White	Group 1 White	Toluol
Sahara Sahara-SAR	Group 2	Group 2	Group 2	Group 2	Toluol
Ultra Grain Handler ORP	Group 3	Group 3	Group 3	Group 3	Xylene
AS-S Fire Boss Plus ORN MSHA-FFORN MSHA-FFORNS	Group 4	Group 4	Group 4	Group 4	Toluol
OHR SOHR	Group 5	Group 5	Group 5	Group 5	Xylene
DeltaHeat White DeltaHeat	Group 6 Group 6 White	Group 6 Group 6 White	Group 6 Group 6 White	Group 6 Group 6 White	Toluol Toluol
CWOR	Group 7	Group 7	Group 7	Group 7	Toluol
Butyl	Group 8	Group 8	Group 8	Group 8	Toluol
Brown Sliderback Blue Sliderback	Group 9 Group 10	Group 9 Group 10	Group 9 Group 10	Group 9 Group 10	Toluol Toluol

Q-R:S:T16-3as

UsFlex I & II Scab Splice Manual

3.1.1 **Cement** – Bonding and/or “tackifying” splice interfaces. (Refer to Table 3A.)

3.1.2 **Solvent**
– used for cleaning splice interfaces and tools/spills. (Refer to Table 3A.)

Table 3B

Straight Warp Belt (Scab) Splice Materials & Gauges							
Tiegums & Splice Fabrics							
Belt Style	Tiegum Gauge (in)			Scab Fabric		Breaker Fabric	
	Step Tie Gum	Under Scab Tie Gum (Adjacent to Belt Fabric)	Bottom Fill in Tie Gum	Type	OA Gauge (in)	Type	OA Gauge (in)
SWI - 175		0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SWI - 190		0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SWI - 220		0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SWI - 245		0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SWI - 330		0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SWI - 440		0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SWI - 550		0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SW II - 400	0.060	0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SW II - 440	0.060	0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SW II - 500	0.060	0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SW II - 550	0.060	0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SW II - 600	0.060	0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SW II - 660	0.060	0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SW II - 800	0.060	0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SW II - 1000	0.060	0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SW II - 1250	0.060	0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063
SW II - 1500	0.060	0.040	0.040	XC 250 NN	0.090	XC 110 NN	0.063

QRS:T116-3b

3.1.3 **Primer**
– Applied to any exposed (no rubber) fabric surface. (Refer to Table 3A.)

3.1.4 **Tiegum** – Uncured rubber; enhances adhesion and flexibility between splice interfaces. (Refer to Table 3B.)

3.1.5 **Fabric (Breaker & Scab)** – Uncured, rubber calendered to fabric. Applied over the outer bias-butt joints in bottom cover fill-in and top cover insert. The Breaker fabric enhances pulley flex dynamics and the Scab provides tensile strength. (Refer to Table 3B.)²

3.1.6 **Cover Stock** – Uncured rubber; replaces the cover rubber removed in the fill-in regions.

3.1.7 **Release Paper** – (or cloth) prevents the splice from sticking to the platens.

² If longitudinal seams are necessary when apply any splice fabric, keep those seams away from the idler junction regions of the splice.

UsFlex I & II Scab Splice Manual

4.0 ‘Laying Out’ the Belt Ends

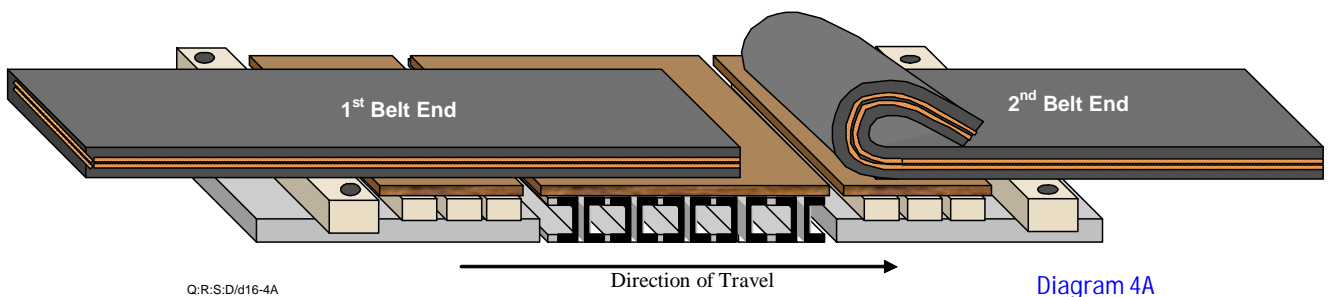
- 4.1 **Fenner Dunlop UsFlex** follows a basic “bias-butt scab” splice pattern. All cover and ply “cut” lines follow along a 22° bias angle (as measured from the square cut end).

Fenner Dunlop UsFlex I belts are generally spliced with the single ply joint “butted”. However, **Fenner Dunlop UsFlex II** belts require a single lapped step along with the “bias-butt scab”. Step joints will necessitate slight modifications to some of the following procedures. If any procedure presented is different for these constructions, that difference is fully explained.

All the procedures that follow reference a **UsFlex II** splice being built or assembled, with the top cover facing up (bottom cover down).

- 4.2 With each belt end properly positioned on the worktable mark the centerline on both top covers.³
- 4.3 Fold one belt end (referred to as the second belt end) back on itself. Refer to Diagram 4A below.

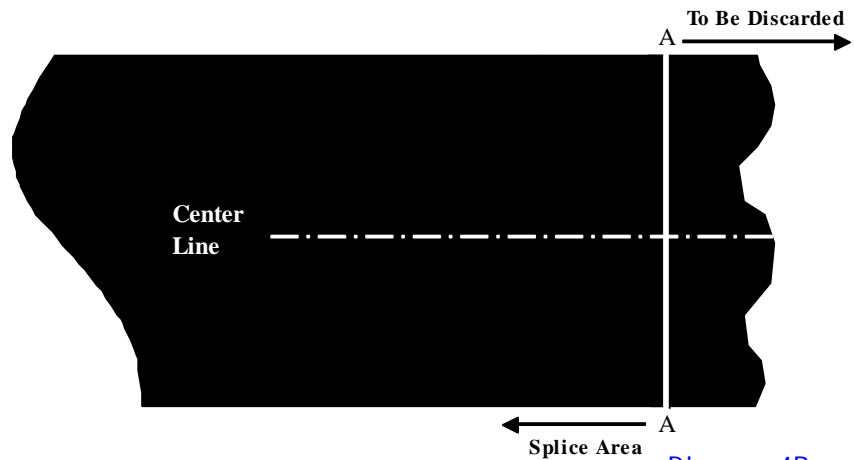
Typically, this end will be the leading belt end if the splice is being made along the carrying strand of the conveyor.



³ This is done simply by marking the mid-point of the belt at several locations along the belt end (typically, 3-4 times the belt width in length) and then drawing a straight line through the marks obtained. These centerlines must be visible as they are referenced many times through the splice process. Their proper alignment will assure a “straight” tracking final product.

UsFlex I & II Scab Splice Manual

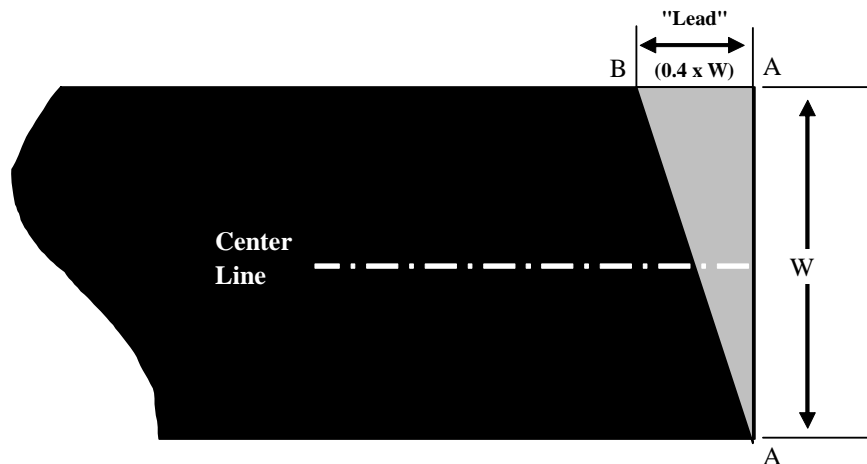
4.4 With the belt end remaining on the worktable (referred to as the ‘first’ belt end), square that belt end by drawing a line across the belt 90° to the centerline. See line ‘A-A’ in Diagram 4B.



Q:R:S:D/d16-4B

[Diagram 4B](#)

4.5 From the square cut end, along one edge measure the ‘lead’ length (belt width x .4). Draw a line ‘A-B’ joining the end of the lead length back to the square end cut along the opposite belt edge.



Q:R:S:D/d16-4C

[Diagram 4C](#)

⁴ The “arc scribing” and the “carpenter’s square” are two acceptable methods available for creating this perpendicular cut line, ‘A A’. Use one of these methods.
⁵ This splice layout above (as those that follow) illustrates a right-hand “lead”. In service, the orientation of the splice bias angle is not typically important. However, when using a rhombic-shaped vulcanizer, you may want to match your splice orientation with that of your platens.

UsFlex I & II Scab Splice Manual

4.6 Refer to the splice “Length” dimensions as outlined in Table 4.

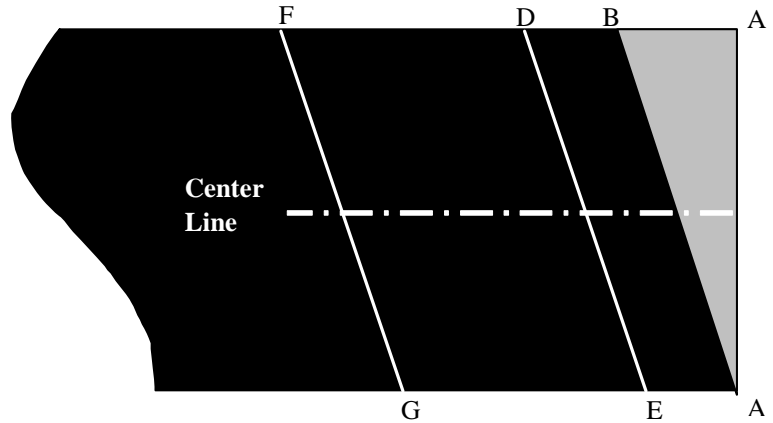
Table 4

Straight Warp Belting Vulcanized Splice Dimensions				
Belt Style	No. of Units (Plies)	Step Length (Inches)	Overall Splice Length (Inches) w/o bias angle	Bottom Fill-In Length (Inches)
SW I - 175 / 190	1	-	26	6
SW I - 220 / 245	1	-	26	6
SW I - 330	1	-	26	6
SW I - 440	1	-	26	6
SW I - 550	1	-	34	6
SW II - 400 / 440	2	12	41	14
SW II - 500 / 550	2	14	47	14
SW II - 600 / 660	2	15	50	14
SW II - 800	2	18	59	14
SW II - 1000	2	24	77	14
SW II - 1250	2	30	95	14
SW II - 1500	2	36	112	14

T16-4

UsFlex I & II Scab Splice Manual

4.7 From the bias line 'A-B' draw in the bottom fill-in lines. Refer to the splice "Fill-In Length" dimensions in Table 4. Taking $\frac{1}{2}$ of this value, measure from the 'A-B' bias line marks and draw the bottom cover

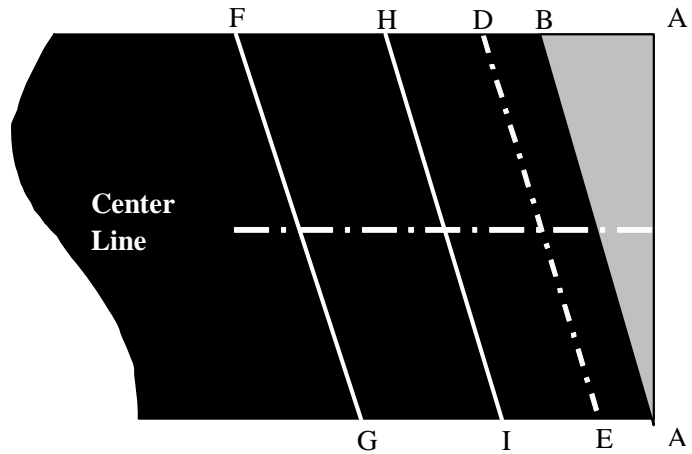


Q:R:S:D/d16-4D

[Diagram 4D](#)

bevel cut line. (Referred in Diagram 4D as 'E D'). Refer to the splice "Overall Splice Length" dimensions in Table 4. Taking $\frac{1}{2}$ of this value, measure from the 'A-B' bias line marks and draw the top cover bevel cut line. (Referred in Diagram 4D as 'F G').

4.8 In the **UsFlex II** splice layout there is one step length to be drawn in. Draw the bias-ply cut line across the top cover. Refer to the splice "Fill-In Length" dimensions in Table 4. Taking this value, measure from the 'A-B' bias line marks and draw the bias-ply step cut line. (Referred in Diagram 4E as 'H I'.)



Q:R:S:D/d16-4E

[Diagram 4E](#)

UsFlex I & II Scab Splice Manual

- 4.9 Return the 'second' belt end (folded onto itself in 4.3) to overlap the 'first' belt end. (Refer to Diagram 4G.) Align both centerlines.⁶

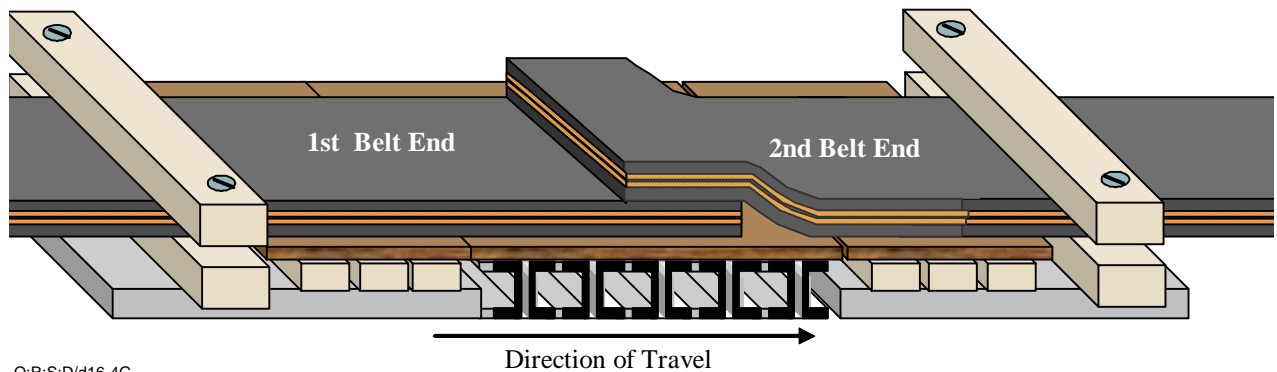


Diagram 4G

- 4.10 With the edges of both belts align, vertically transfer the marks from the first belt end to the edges of the second belt end above it. Extend all of the cut lines vertically along both belt edges. (Refer to Diagram 4F)

- 4.11 With the second belt end still overlapping the first belt end, draw the cover bevel cut line into the top cover. Then, fold the second belt end back onto itself. Complete the layout of this end by measuring and drawing the remaining cover bevel cut line onto the bottom cover. Follow the procedures outlined in Steps 4.7 and 4.8. Although the procedures are similar they are followed in reverse, bottom cover now up, etc.

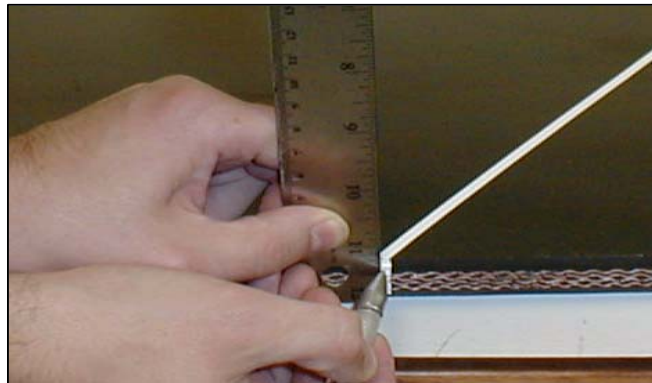


Diagram 4F

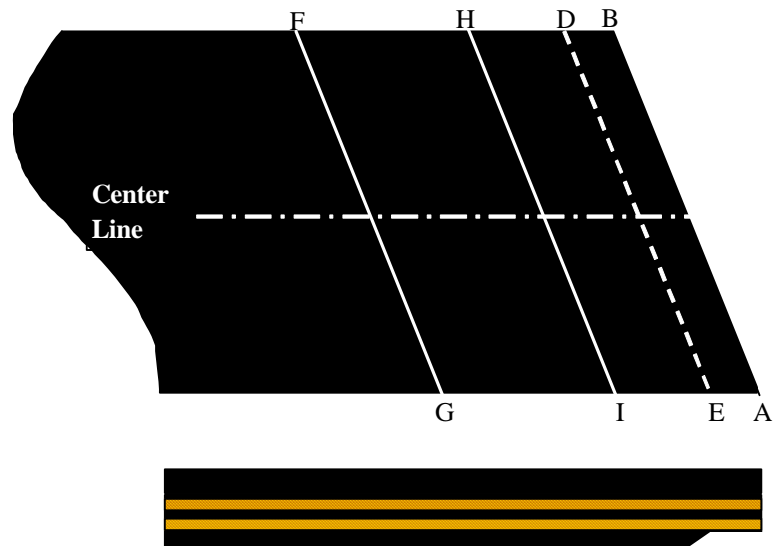
⁶ Once both centerlines are properly aligned take steps to secure or clamp the alignment.

UsFlex I & II Scab Splice Manual

5.0 Stepping and Preparing the Belt Ends

- 5.1 With the first belt end still on the worktable with the second belt end folded over, cut the entire belt across line 'A B'. Discard the remnant end piece denoted by the area 'A B A'.
- 5.2 Initiate the step-down process on the first belt end by removing the bottom cover fill-in.⁷

The cover bevel lines are to be cut at a 45° angle.⁸



Our **UsFlex II** splice example should now look similar to that depicted in Diagram 5A.

Q:R:S:D/d16-5a

[Diagram 5A](#)

- 5.3 **UsFlex I & II** can be furnished as a cut-edge construction or as a molded edge construction, when provided as a molded edge construction care must be taken to retain the rubber along the capped edge as the belt end is stepped down.

This is often done by making a vertical cut along both belt edges no deeper than the surface of the splice fabric that remains. After each ply has been stepped down and

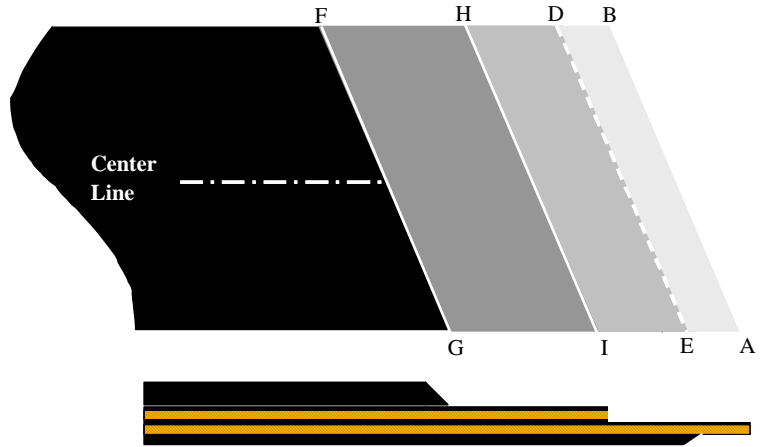
⁷ With the full support of the carcass, it will be much easier to turn the belt over and remove the thinner bottom cover fill-in first. When removing this top cover fill-in rubber on a **UsFlex II**, extend past the top ply cut line an inch or so. This will make the cutting and removal of the top ply easier.

⁸ Take extreme care not to cut or nick any of the adjoining plies. Use a knife that has a rounded tip on its blade (mill knife).

UsFlex I & II Scab Splice Manual

removed, shave off the excess rubber along both edges to match the carcass thickness of each remaining step.

- 5.4 Fold the first belt end back down and cut through the top cover rubber at a 45° angle using a mill knife along 'F G' as shown in Diagram 5A.⁹

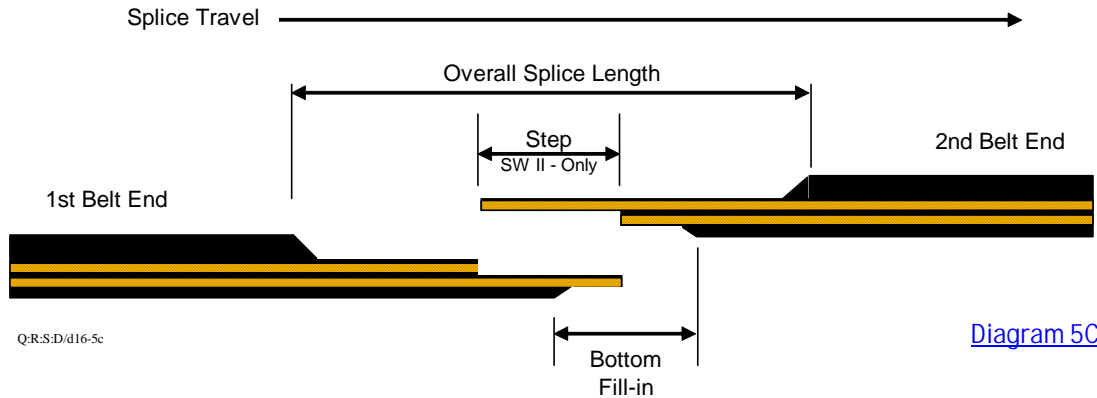


Q:R:S:D/d16-5b

[Diagram 5B](#)

- 5.5 Separate the top cover rubber and pull off to belt end. Use a prodder (or ply lifter) along the cut line to help separate the rubber.¹⁰

- 5.6 For **UsFlex II** splices Use a one-ply knife and cut along 'H I' as shown in Diagram 5B. This completes the step-down process of the first belt end. Diagram 5B depicts what a **UsFlex II** splice should like at this point.



Q:R:S:D/d16-5c

[Diagram 5C](#)

⁹ Make every effort to cut only the ply intended and not any part of the adjacent carcass ply. Use a one-ply knife of proper gauge for all ply cuts. Hold at 45° and keep the cutting edge sharp.
¹⁰ Avoid damaging the ply beneath. Make certain that the prodder's edges are round and dull and advance with strokes parallel to the cut. NEVER use a common screwdriver as a prodder.

5.7 With the second belt end folded back on itself, follow 5.1 through 5.6. However in preparing the second belt end, the step down process will be in reverse of that used for the first belt end. For example, the steps in this belt end are made from the bottom/pulley cover to the top/carry cover. Diagram 5C depicts what a **UsFlex II** splice should like at this point.

5.8 With each belt end, roughen or buff the surface of both the top and bottom cover bevels. Also, along a path approximate

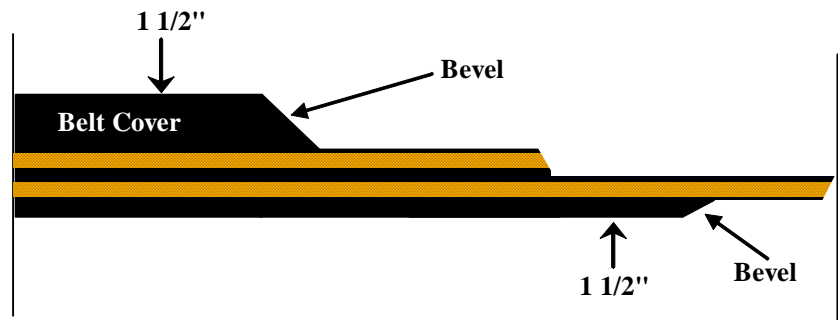


Diagram 5D

ly 1 1/2" wide, buff all cover surfaces adjacent to each bevel across the entire belt width. Refer to Diagram 5D. ¹¹

5.9 Skive the carcass ends approximately 1-inch back with a knife. Do this on both sides of each belt end. When carcass steps are skived correctly, a "V" will be formed when the belt ends are matted together. Where the top carcass ends are butted together, the "V" will be open at the top. The bottom carcass ends, when butted, will form a "V" open at the bottom. Refer to Diagram 5D.

5.10 Brush both belt ends free of any loose rubber, dirt or other noticeable contaminants. Clear the worktable area of any similar debris. Clean all buffed cover rubber (four bevels and adjacent surfaces) with solvent. Allow to thoroughly dry. ¹²

¹¹ A rotary wire buffer or disk sander of less than 1800 rpm (to avoid burning the contacted rubber) can be used. Under no circumstances, nick, grind or burn any portion of the exposed carcass during the buffing process.

¹² Keep solvent away from any exposed carcass surface

6.0 Splice Assembly

- 6.1 When applying any calendered splice component (tie-gum, splice & scab fabric or cover stock), the bonding surface can be lightly cleaned with solvent to improve the tack and then rolled into place. If solvent doesn't produce the tack desired on the bonding surface one coat of cement could be applied.

After positioned and rolled into place, remove any film that has been left on the outside of the bonded component. 'Stitch' areas that may need further compression. With thicker components never hesitate to use an awl to repeatedly puncture any composite of splice laminates.¹³

The finished splice should physically mirror the parent belt. This can best be achieved by maintaining proper gauge control when building the splice. If the splice is built light, it will likely become porous. If the splice is built heavy, the splice will bulge and distort, possibly encouraging abuse and/or poor tension sharing. In either case, splice integrity is compromised.¹⁴

- 6.2 Prepare a final 'dry fit' of the previously stripped and prepared belt ends. Ensure that the entire worktable area is free of dirt and contaminants.

After aligning their centerlines, overlap and mate the two belt ends together. Once aligned, check the bias-butt joint location(s) for proper fit. If gaps or overlaps exist along these joints, trim and/or adjust accordingly. Check the clamps securing both belt ends to the conveyor structure and tighten or readjust, as necessary.

- 6.3 The diagrams in Section 8 illustrate how **UsFlex I & II** belts are intended to mate when they are properly prepared, overlapped and bonded together. Verify that the splice dimensions (step lengths and fill-in lengths) match those in Table 4.

- 6.4 With a clean brush apply one (1) thin coat of P-1940 primer to any exposed or bare fabric surface on either side of both belt ends. Allow to thoroughly dry.¹⁵

¹³ All calendered materials should be applied "wide" of the belt edges. Any such excess can be conveniently trimmed away before curing.

¹⁴ Try to build your fill-ins about 0.040" heavier than the cover gauge that was removed. Check the gauge with an appropriate measuring instrument.

¹⁵ Apply only one (1) coat of primer on any bare fabric surface. If possible, try to keep the primer from contacting any bonding rubber surface..

UsFlex I & II Scab Splice Manual

6.5 On all splice surfaces of both belt ends, including the buffed sections of cover adjacent to the bevels, apply one coat of cement.¹⁶

6.6 With both belts in position on the worktable, carefully map the total area of the bottom cover fill-in, specifically the cover bevel locations. The bottom cover insert is to suitably fill this void of rubber cover.¹⁷ Refer to Diagram 6A.

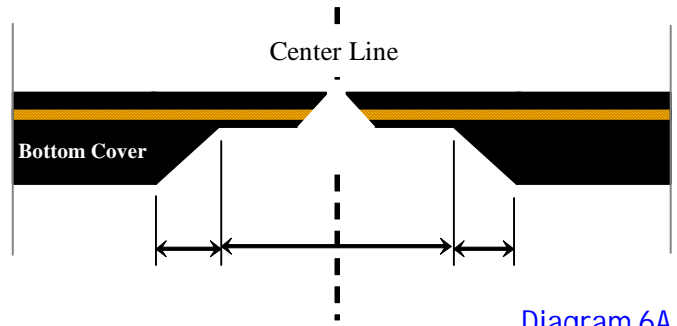


Diagram 6A

6.7 The bottom cover insert consists of layering tiegum, splice fabric and cover stock together. Refer to Table 3B for the correct splice fabric selection, and tiegum gauge. Check direction of travel for breaker fabric – warp members follow the travel of splice.

Using the dimensions from the map in Step 6.6, prepare the bottom cover insert. Start with the bottom cover stock. Apply the splice fabric. When positioned in the fill-in, the fill-in splice fabric should have at least 1/2" of clearance from either cover bevel. If necessary, trim this fabric to suit. Apply a strip of tiegum to extend up to the cover bevel and over the buffed cover surface by approximately 1 1/2".¹⁸ (Diagram 6B).

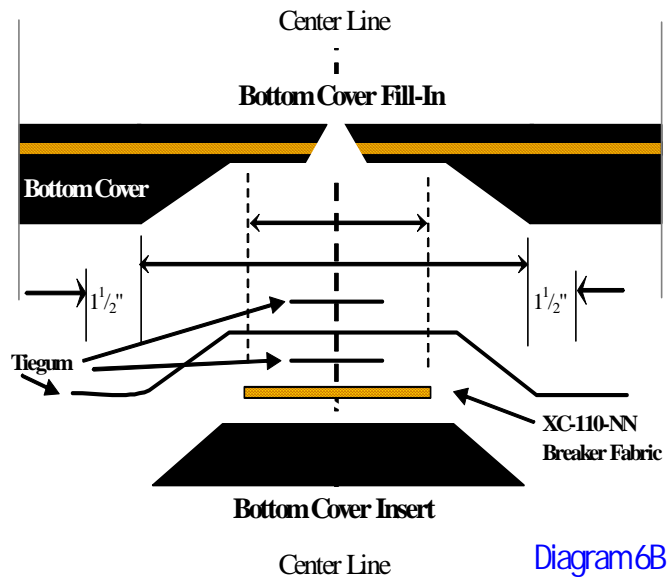


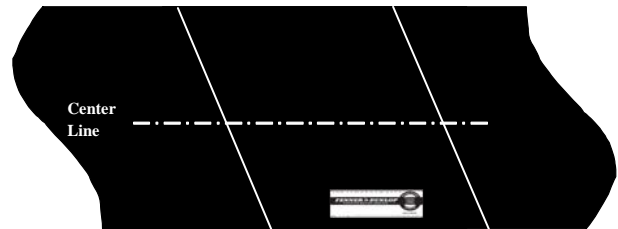
Diagram 6B

¹⁶ Additional coats of cement are permitted for enhanced tack, but not necessary for bonding purposes. When bonding splice components or surfaces together, a cemented surface can be tacky or dry but never wet.

¹⁷ A proven way to do this is to transfer these locations to paper or film directly beneath the bottom cover fill-in.

¹⁸ When building the insert, keep all the laminate materials centered. Doing so will make assembly easier, and assure a more favorable finished product.

- 6.8 Fold the second end of the belt back on itself. For a **UsFlex II** splice apply the correct tiegum gauge (Ref Table 3A) over the entire carcass step area. Roll and remove any film. Stitch and perforate with an awl.¹⁹
- 6.9 Working with the first belt end, fold it back on itself. Position the bottom cover insert to properly fit this half of the cover fill-in area. Roll into place. Remove any film. Return the belt end back to the worktable taking care not to separate the insert from the fill-in. (Roll this interface again, if necessary.)
- 6.10 Slowly and carefully return the second belt end back to the worktable. Begin mating the two belt ends together. Making certain all interfaces fit together as intended, starting with the bottom cover and bottom ply joint and finishing with the top ply joint. Roll and stitch down the belt ends as they are joined together being careful not to trap any air.
- 6.11 Apply and enter the scab fabric over the top bias-butt joint (check direction of travel for scab fabric – warp members follow the travel of splice). As with the bottom cover insert (Step 6.7), both edges of the fabric should have at least 1” of clearance from either cover bevel. If necessary, trim the scab fabric to suit.
- 6.12 Apply strips of tiegum adjacent to both edges of the splice fabric (matching the same gauge as the scab fabric) that extend up the cover bevel and over the buffed and adjacent cover surface by approximately 1 ½” (same as Step 6.7).
- 6.13 Apply the top cover stock to this fill-in. Following the Grouping Matrix in Table 3A.
- 6.14 Trim off any excess rubber along both edges of the belt. Using an awl, make numerous punctures in both covers to allow for any trapped air to escape during vulcanization.²⁰
- 6.15 Apply the Certified Splice ID Patch along the edge of belt cover so skirtboard and material do not wear on the patch surface. Refer to Diagram 7A.



QRS-DD16-7as

[Diagram 7A](#)

¹⁹ Lay two 2” wide sections of tie gum over the center gap that exist between the top & bottom ply “v” joint.
²⁰ Every splice requires a proper splice I.D. label. This would be an ideal time to position your Certified Splice I.D. Patch over the top cover fill-in or along the outside edge of the belt.

UsFlex I & II Scab Splice Manual

7.0 Curing

- 7.1 Verify that the centerlines of each belt end are in proper alignment. This indicates that the splice, for the moment, is square. If necessary, slight alignment adjustment can be made. Cover the top and bottom fill-ins with release paper or cloth.
- 7.2 Position the edge bars firmly against the belt edges. Ideally these should be 1/16” thinner than the parent belt. Use clamps or come-a-longs to maintain a tight seal between the belt and the edge bars, checking again as the vulcanizer temperature and pressure rise.

7.3 With the vulcanizer platens in place and properly secured, begin to apply pressure and then heat. For pressure, all **UsFlex I & II** splices need 100 psi. and for cure temperature Group 6 & 8 (EPDM & Butyl belts) require 320°F, while all other rubber groups require 300°F.

7.4 Once proper pressure and temperature levels have been reached, begin the cure cycle. Cure times are provided in Table 7. ²¹

Table 7

Fenner Dunlop Splice Material Curing Times		
Belt Type	Belt Thickness (inches)	Cure Time
Group 6 Group 6 (White) Group 8	Up to & incl. 7/16	70 minutes
	15/32 - 1/2	75 minutes
	17/32 - 9/16	80 minutes
	19/32 - 5/8	85 minutes
Group 1 Group 1 (White) Group 2 Group 3 Group 4 Group 5 Group 7 Group 9	21/32 - 3/4	90 minutes
	Up to & incl. 5/8	40 minutes
	5/8 - 3/4	45 minutes
	3/4 - 7/8	50 minutes
	7/8 - 1	55 minutes
	1 - 1 & 1/8	60 minutes
	1 & 1/8 - 1 & 1/4	65 minutes
	1 & 1/4 - 1 & 1/2	75 minutes
1 & 1/2 - 1 & 3/4	80 minutes	
100 P.S.I.		

Q:R:S:T\16-7

7.5 After the cure cycle is complete, begin the cool-down process. Keep the splice under full pressure until the temperature is below 150°F. ²²

7.6 Remove the vulcanizer platens and inspect the entire splice. Trim the edges and/or buff to suit. ²³

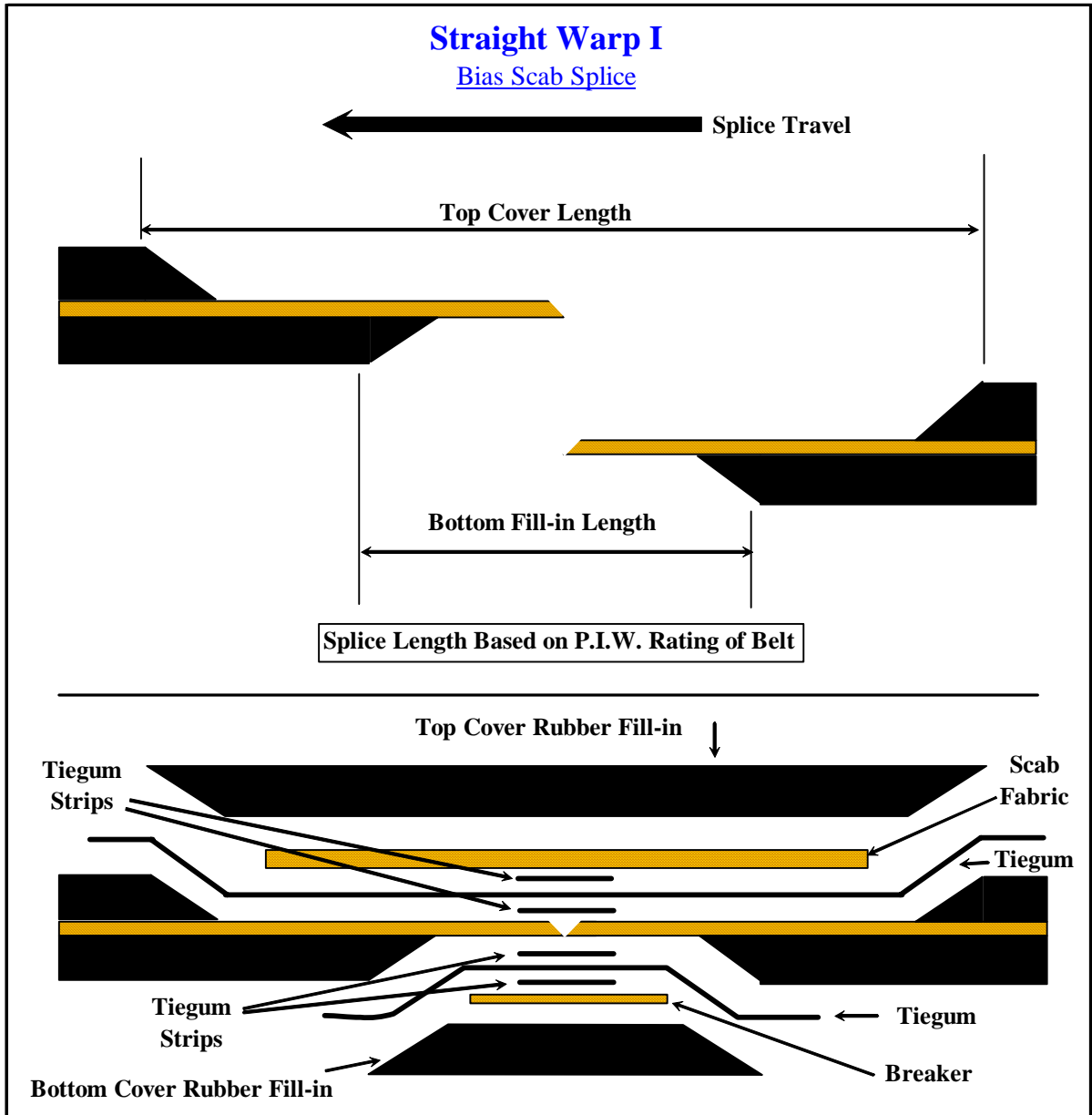
²¹ A field cure cycle begins the moment when all platen zones reach full temperature. Vulcanizer instrument readings are not always reliable. Therefore, We strongly recommend the use of thermocouples. Not only do they have the required accuracy (+/- 5°F cure temperature tolerance), they measure temperature at the platen/belt surface.

²² Never return a vulcanized splice back into service that is still hot to touch. Wait until the splice reaches ambient temperature.

²³ In particular, note the cover fill-in regions. Make certain that the lead bevels are flush with the belt or unwanted scraper abuse might result. Buff to suit.

UsFlex I & II Scab Splice Manual

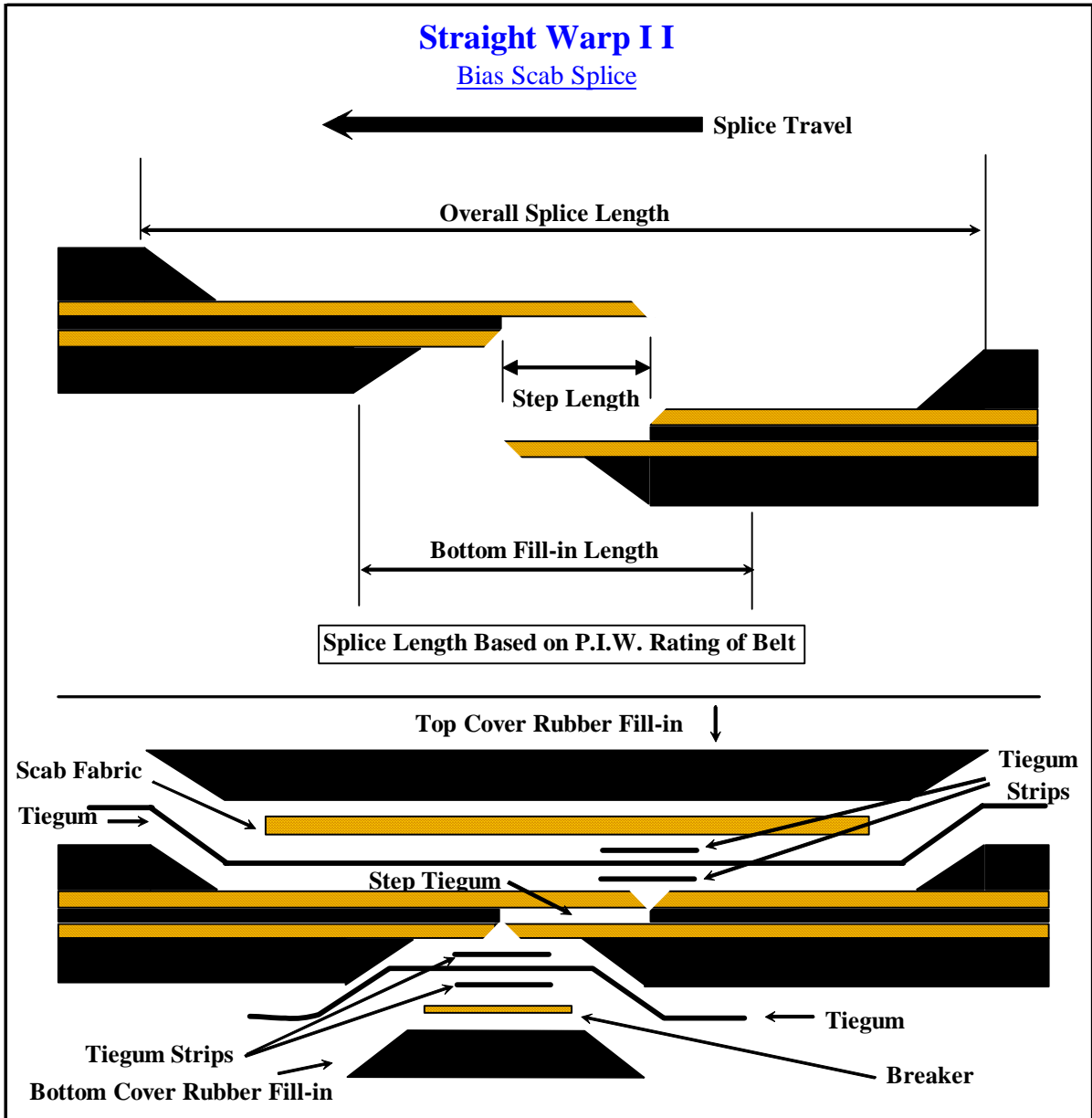
8.0 Splice Layout Diagrams



Q:R:S:D/d16-8A

[Diagram 8A](#)

UsFlex I & II Scab Splice Manual



Q-R.S:D/d16-8B

[Diagram 8B](#)