Vulcanized Finger Splicing Procedures

UsFlex I & II Conveyor Belt

Contents

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 all finger design. This technique incorporates a specially engineered rubber compound & breaker fabric around the carcass fingers. 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 merchantablility 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

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.

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) Utility knife and extra blades
e) Other knives (mill, offset, bevel, long, "v"-trim, etc.)
f) Pincers
g) Prodder (or "ply-lifter")
h) Stitchers
i) Rollers
j) Awl
k) 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)
d) Rubber saw – cutting of fingers
e) Cover removal tool kit – removing covers off fingers

2.3 Diagnostic Tools

a) Durometer – check hardness of belt ends and finished splice
b) Thickness gauge
c) Themocouples – 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 300ºF to 320ºF (with $^{+}/_{-}$ variance of 5ºF)
e) Uniform pressure, 100 psi minimum capability
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.

Recommended Press Platen sizes (Total Vulcanizing Area)

In all cases minimum platen width is calculated by adding 4" (100mm) to the belts' width, i.e., 36" (900mm) wide belt needs a minimum platen width of 40" (1000mm).

The minimum platen length required is calculated by adding 4" (100mm) to each end of the splice length, i.e., 28" (700mm) long splice needs a minimum platen length of 36" (900mm). .

It should be reiterated that the above dimensions are the minimum possible for any belt type or width. Longer platens are always beneficial to the joint by allowing longer finger lengths to be accommodated.

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.

3. Materials

3.1 UsFlex splice cements and calendered rubber items have a dated shelf life of six (6) months. However, if refrigerated (preferably < 50ºF), 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	Group 6	Group 6	Group 6	Group 6	Toluol
White DeltaHeat	Group 6 White	Group 6 White	Group 6 White	Group 6 White	Toluol
CWOR	Group 7	Group 7	Group 7	Group 7	Toluol
Butyl	Group 8	Group 8	Group 8	Group 8	Toluol
Brown Sliderback	Group 9	Group 9	Group 9	Group 9	Toluol
Blue Sliderback	Group 10	Group 10	Group 10	Group 10	Toluol

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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.)

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 finger interfaces. (Refer to Table 3B.)

3.1.5 **Fabric (Breaker)** – Uncured, rubber calendered to fabric. Applied over and around the fingers above the tie gum and before the cover panels. The Breaker fabric enhances pulley flex dynamics and provides some tensile strength. (Refer to Table 3B.) [2]

Table 3B

Straight Warp Belt Finger Splice Materials & Gauges Tiegums & Breaker Fabrics

Belt Style	Tiegum Gauge (in)			Breaker Fabric	
	Between Finger Tie Gum	Bottom Tie Gum (Adjacent to Belt Fingers)	Upper Tie Gum Adjacent to elt Fingers	Type	OA Gauge (in)
SW I - 175	0.040	0.040	0.040	B 95 NN	0.055
SW I - 190	0.040	0.040	0.040	B 95 NN	0.055
SW I - 220	0.040	0.040	0.040	B 95 NN	0.055
SW I - 245	0.040	0.040	0.040	B 95 NN	0.055
SW I - 330	0.040	0.040	0.040	B 95 NN	0.055
SW I - 440	0.040	0.040	0.040	B 95 NN	0.055
SW I - 550	0.040	0.040	0.040	B 95 NN	0.055
SW II - 400	0.040	0.040	0.040	B 95 NN	0.055
SW II - 440	0.040	0.040	0.040	B 95 NN	0.055
SW II - 500	0.040	0.040	0.040	B 95 NN	0.055
SW II - 550	0.040	0.040	0.040	B 95 NN	0.055
SW II - 600	0.040	0.040	0.040	B 95 NN	0.055
SW II - 660	0.040	0.040	0.040	B 95 NN	0.055
SW II - 800	0.040	0.040	0.040	B 95 NN	0.055
SW II - 1000	0.040	0.040	0.040	B 95 NN	0.055
SW II - 1250	0.040	0.040	0.040	B 95 NN	0.055
SW II - 1500	0.040	0.040	0.040	B 95 NN	0.055

Note: On thin cover belts the adjacent to the fingers Tie Gum can be .020 to reduce the over all splice gauge.

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3.1.6 **Cover Stock** – Uncured rubber; replaces the cover rubber removed in the splice panel 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.

4.0 'Laying Out' the Belt Ends

4.1 **Fenner Dunlop UsFlex** follows a basic finger splice pattern. This splice can be made both square and on a 22º bias angle (as measured from the square cut end).

Fenner Dunlop UsFlex I belts are spliced with the single layer of fabric cut unto fingers. However, **Fenner Dunlop UsFlex II** belts require the same single finger to be cut into both layers of fabric at the same point (no steps). If any procedure presented is different for these constructions, that difference is fully explained.

All the procedures that follow reference a square **UsFlex** finger 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.

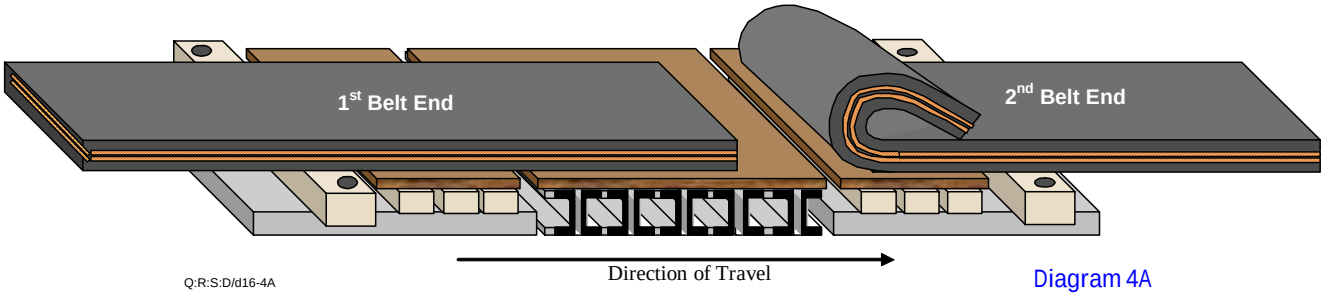

Diagram 4A

[3] This is done simply be 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.

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 90º to the centerline. See line 'A-A' in Diagram 4B.[4]

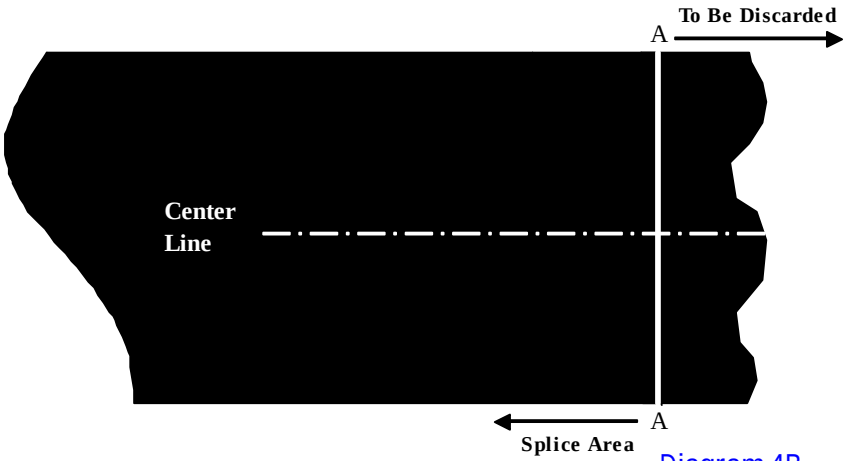

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Diagram 4B

4.5 From the square cut end, work along both belt edges and measure the finger length. Draw a line 'B-B' showing the end of the finger length to the opposite belt edge.[5]

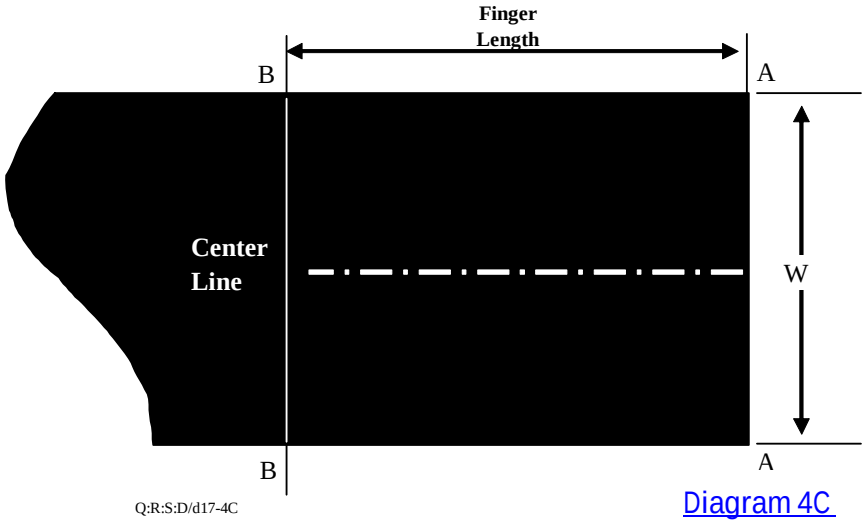

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Diagram 4C

[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 square splice. In service, a splice bias angle splice is not typically important. However, when using a rhombic-shaped vulcanizer, you may want to match your splice angle with that of your platens for best splice coverage.

4.6 Refer to the finger "Length" and general splice dimensions as outlined in Table 4.

Table 4

Straight Warp Belting Finger Splice Dimensions							
Belt Style	No. of Units (Plies)	Finger Length (Inches)	Finger Base (Inches)	Transition Length Each End (Inches)	Pull-Back One End (Inches)	Total Splice Length (Inches)	Total Press Length (inches)
SW I - 175 / 190	1	22	2	2	1	27	35
SW I - 220 / 245	1	22	2	2	1	27	35
SW I - 330	1	22	2	2	2	28	36
SW I - 440	1	22	2	2	2	28	36
SW I - 550	1	24	2	2	2	30	38
SW II - 400 / 440	2	22	2	2	2	28	36
SW II - 500 / 550	2	24	2	2	2	30	38
SW II - 600 / 660	2	28	2	2	2.5	34.5	42.5
SW II - 800	2	34	2	2	2.5	40.5	48.5
SW II - 1000	2	45	2	2	3	52	60
SW II - 1250	2	55	2	2	3	62	70
SW II - 1500	2	63	2	2	3	70	78

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4.7 From the line 'B-B' draw in the transition line. Refer to the splice "Transition Length" dimensions in Table 4. Taking this value, measure from the 'B-B' line marks and draw the transition line which also serve as the top and bottom cover bevel cut lines. (Referred in Diagram 4D as 'C C').

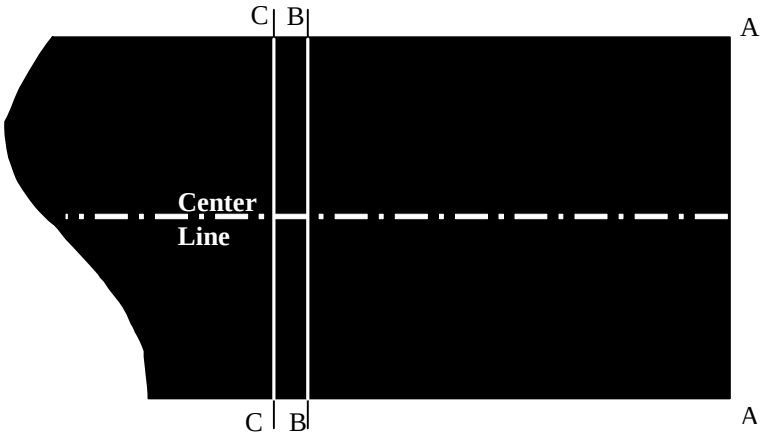

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Diagram 4D

Note: All marks should be transferred to belt edges (both sides) for latter bottom cover removable.

4.8 Working from the center line lay out the finger pattern. The center finger should point to the splice direction of travel. This will allow the edge finger to trail. Refer to the splice "Finger Length & Finger Base" dimensions in Table 4.

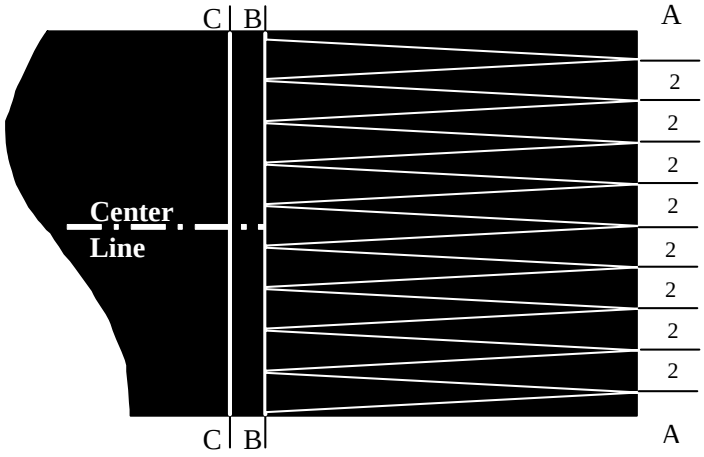

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Diagram 4E

Note: The center finger splits the finger base along the center line at the leading end.

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]

4.10 With the centerlines of both belts aligned, 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 lines ("Transition Lines") into the top cover.

4.12 Complete the layout of this end by measuring and drawing the remaining finger pattern cut lines onto the top cover. Follow the procedures outlined in Steps 4.7 and 4.8. Although the procedures are similar they are followed in reverse.

4.13 Then, fold the second belt end back onto itself.

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

5.0 Preparing the Belt Ends

With the first belt end still on the worktable with the second belt end folded over, cut the entire belt across line 'A A'. Discard the remnant end piece.

5.1 Initiate the finger cutting process on the first belt end by removing the top & bottom cover from the line 'C C' to 'B B' and then the top cover. [7]

The cover bevel lines are to be cut at a 45º angle. [8]

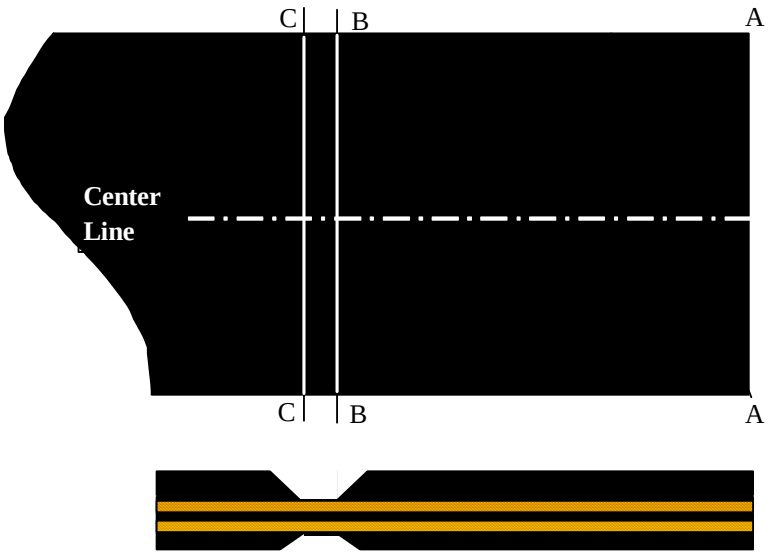

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Diagram 5A

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

5.2 **UsFlex I & II** can be furnished as a cut-edge construction or as a molded edge construction, the rubber along the capped edge as the belt end is cut down.

This is often done by making a vertical cut along both belt edges removing the rubber edges. If the belt does not have a molded edge make room for the breaker edge wrap latter by removing ½" from each belt edge.

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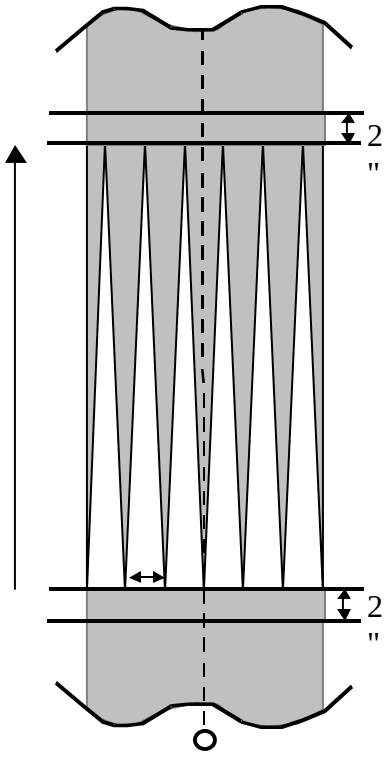
[7] With the full support of the carcass, it will be much easier to turn the belt over and remove the thinner bottom cover first.

[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).

5.3 Fold the first belt end back down and cut through finger pattern lay out marks on the cover rubber at a 90º angle using a utility knife or rubber saw as shown in Diagram 4E.

Notice these drawing shows both ends snugly mated together, but when properly positioned for vulcanization, there should be 1/16” to 1/8” wide gap between fingers (this is what the pull-back is for). In order to avoid cutting the fingers too large, each cut must be made to the inside of the pattern lines into the fingers which will remain intact and all cuts must be vertical and straight as possible. A saw or cutting device may be helpful cutting these fingers, however, a sharp razor knife may be the best or most accurate means of cutting.



5.4 Remove the bottom cover rubber off each finger. Use a cover removal tool along the “B B” bevel cut line to help separate the rubber.[9]

5.5 For **UsFlex II** splices cut through both layers of fabric making ONE finger.

The outside fingers on the leading end of the splice should be trailing or pointing in the opposite direction from the belt travel. The trailing fingers on each edge of the leading belt end are typically 1/2 the normal finger width used in the splice. This is to protect the next finger on the opposite belt end pointing in the same direction as belt travel. This will help keep the finger from being exposed and getting caught in the structure of the conveyor if damage were to occur to the edge of the belt.

[9] 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.

5.6 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 look like at this point.

5.7 With each belt end, roughen or buff the surface of both the top and bottom cover bevels. Also, along a path approximately 1½" wide, buff all cover surfaces adjacent to each bevel across the entire belt width. Refer to Diagram 5D. [10]

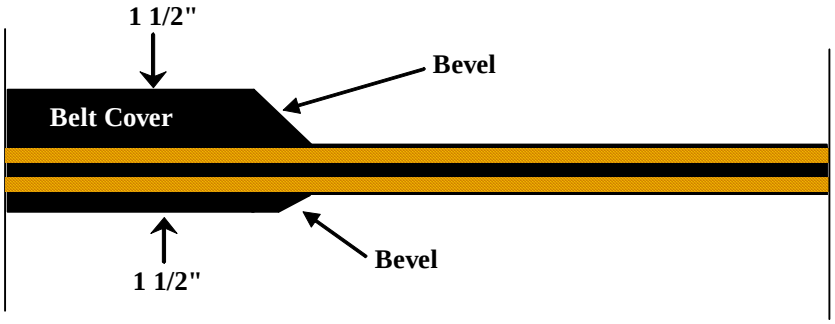


Diagram 5D

5.8 When the covers are skived (beveled) or buffed 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.

5.9 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 if needed. Allow to thoroughly dry. [11]

[10] 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.

[11] 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 thin 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. [12]

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. [13]

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 fingers for a tight fit. If gaps or overlaps exist along these fingers, trim and/or adjust accordingly. At this point pull-back the noted amount as seen in Table 4 so the proper gap is found between the fingers as noted in section 5.3. Check the centerline along both belt ends and adjust, as necessary.

6.3 The diagrams in Section 8 illustrate how **UsFlex I & II** finger splices are intended to look when they are properly prepared, overlapped and bonded together. Verify that the splice dimensions (finger lengths and cover 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. [14]

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

[13] 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.

[14] 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.

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. [15].

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. [16] Refer to Diagram 6A.

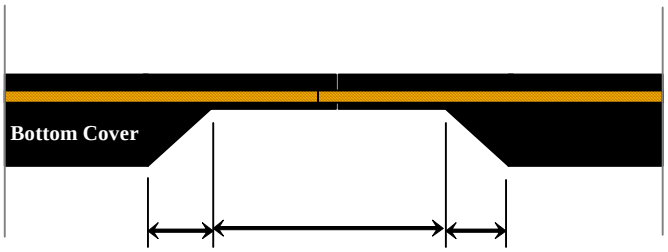

Diagram 6A

6.7 The bottom cover insert consists of layering tiegum, breaker fabric and cover stock together. Refer to Table 3B for the correct splice fabric selection, and tiegum gauge.

Note: The Breaker Fabric must wrap around the outside fingers by at least 6". It is best to have the breaker fabric in one sheet as so to wrap around the splice with a 2" overlap. It also it important to not allow the breaker fabric to stick to the cover stock along the outside edge of the splice, so latter the breaker fabric can be wrapped tightly around the edges.

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 to 2" of

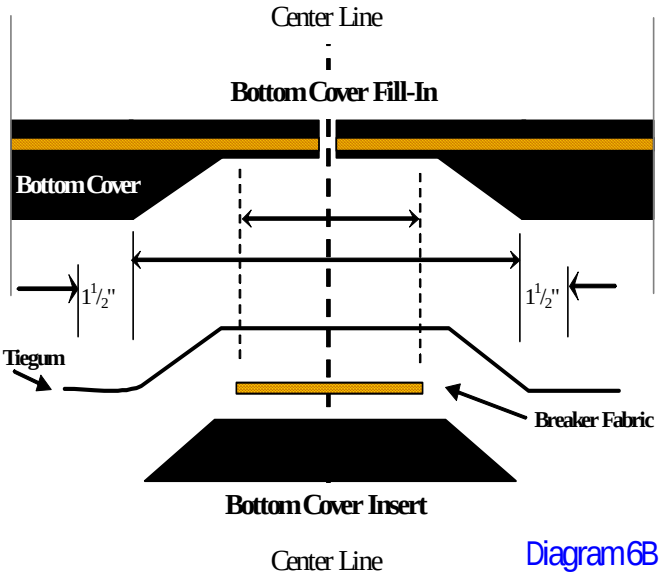

Diagram 6B

[15] 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.

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

clearance from either cover bevel. If necessary, trim this fabric to suit. Apply a sheet of tiegum to extend up to the cover bevel and over the buffed cover surface by approximately 1 ½". [17] (Diagram 6B).

6.8 Fold the second end of the belt back on itself. Prop the fingers of the splice up out of the way and place the bottom cover composite in place. Lay the fingers of one belt end down against the skim, while being certain the bottom cover composite is positioned properly to fit the sloped transitions. Due to the tackiness of the adhesive treated fingers, extreme care must be taken to carefully place each finger in their proper positions the first time as once the two surfaces touch, they may not be repositioned. This is best accomplished by supporting the fingers just above the bottom cover composite surface and laying down one finger at a time, each spaced apart enough to allow proper positioning of the fingers from the other belt end. Once the fingers from the first belt end are all in position roll them down firmly into place.

6.9 Apply the correct tiegum gauge (Ref Table 3A) over the just placed entire carcass finger area. Roll and remove any film. Stitch between the fingers to remove all air pockets and perforate with an awl if needed. This sheet of "between the finger skim" is to be cut equal to the finger length and wide enough to cover the belt width.

6.10 Lay the fingers from the other belt end on top of this skim one at a time being certain of proper positioning between the fingers already laid from the first end. After all fingers are laid roll them firmly in to place. Fill any voids at the finger tips or along the finger edges with Size 1 Finger Noodle material to create a solid joint.

6.11 Apply the top and final sheet of tiegum across the splice making sure the tiegum is applied from the top of each bevel to the top of the other bevel.

6.12 At this point pull the breaker tightly around each edge and lap over on to the top of the splice. Allow for a 2" overlap in the breaker. As with the bottom cover insert (Step 6.7), both edges of the fabric should have at least 1 to 2" of clearance from either cover bevel. If necessary, trim the breaker fabric to suit.

6.13 Apply the top cover stock. Following the Grouping Matrix in Table 3A. Fill in the edges of the splice using cover stock.

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

6.14 Trim off any excess rubber along both edges of the belt (making sure not to cut the breaker). Using an awl, make numerous punctures in both covers to allow for any trapped air to escape during vulcanization.

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Diagram 7A

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. [18]

[18] 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.

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.

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 320ºF, while all other rubber groups require 300ºF.

7.4 Once proper pressure has been reached, begin the heat up of the press. DO NOT PREHEAT your vulcanizer.

Table 7

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

Q:R:S:T/t16-7

7.5 To improve flow of the splice materials and reduce air pockets at 230ºF turn off the power to the press for 5-min. Then turn the power back on and continue the heat up of the vulcanizer. DO NOT CHANGE PRESSURE AFTER IT AS BEEN SET.

7.6 When the proper curing temperature is reached begin the cure cycle. Cure times are provided in Table 7. [19]

7.7 After the cure cycle is complete, begin the cool-down process. Keep the splice under full pressure until the temperature is below 150ºF. [20]

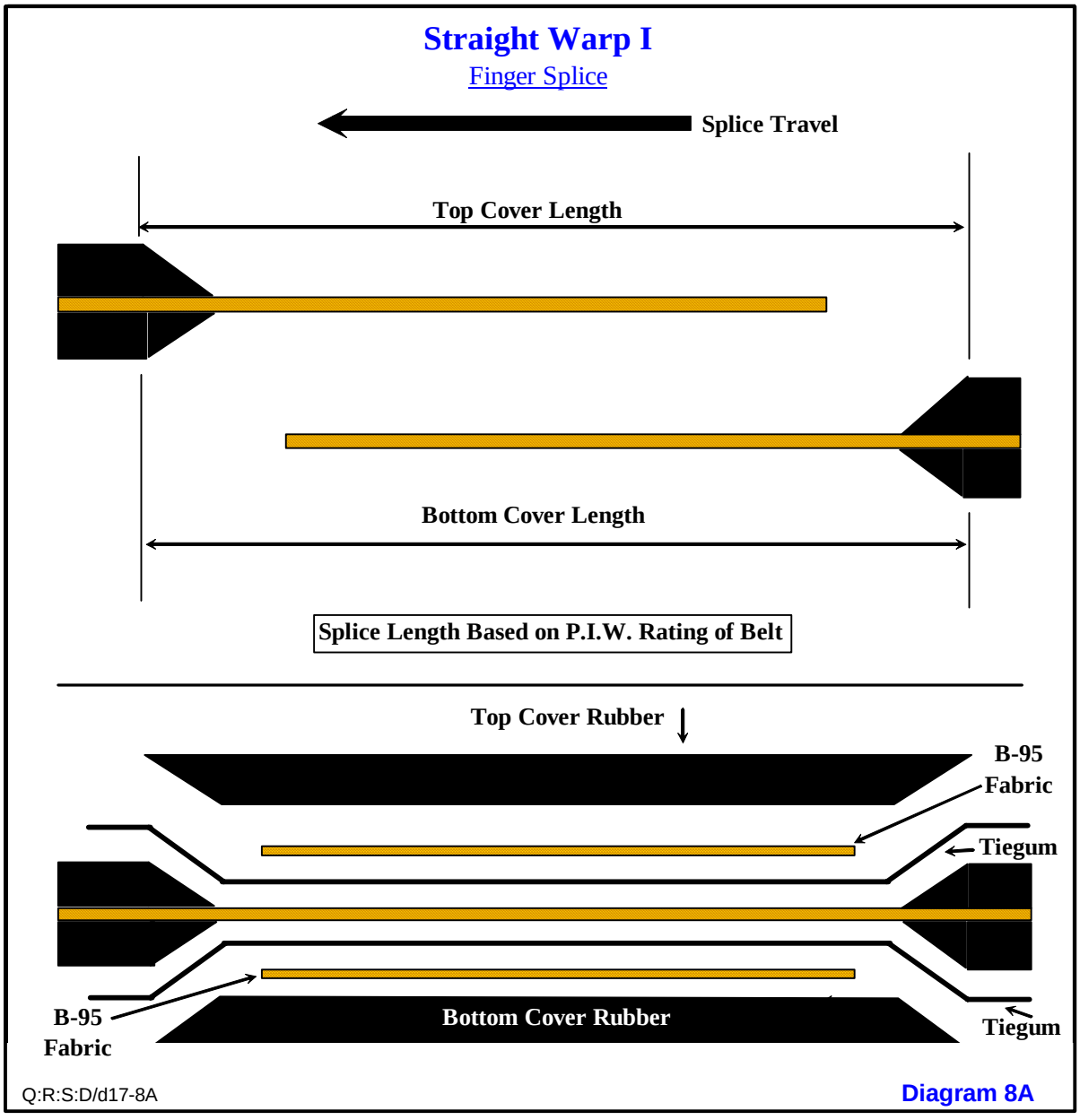
[19] A field cure cycle begins the moment when all platen zones reach full temperature. Vulcanizer instruments readings are not always reliable. Therefore, We strongly recommend the use of thermocouples. Not only do they have the required accuracy (+/- 5ºF cure temperature tolerance), they measure temperature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

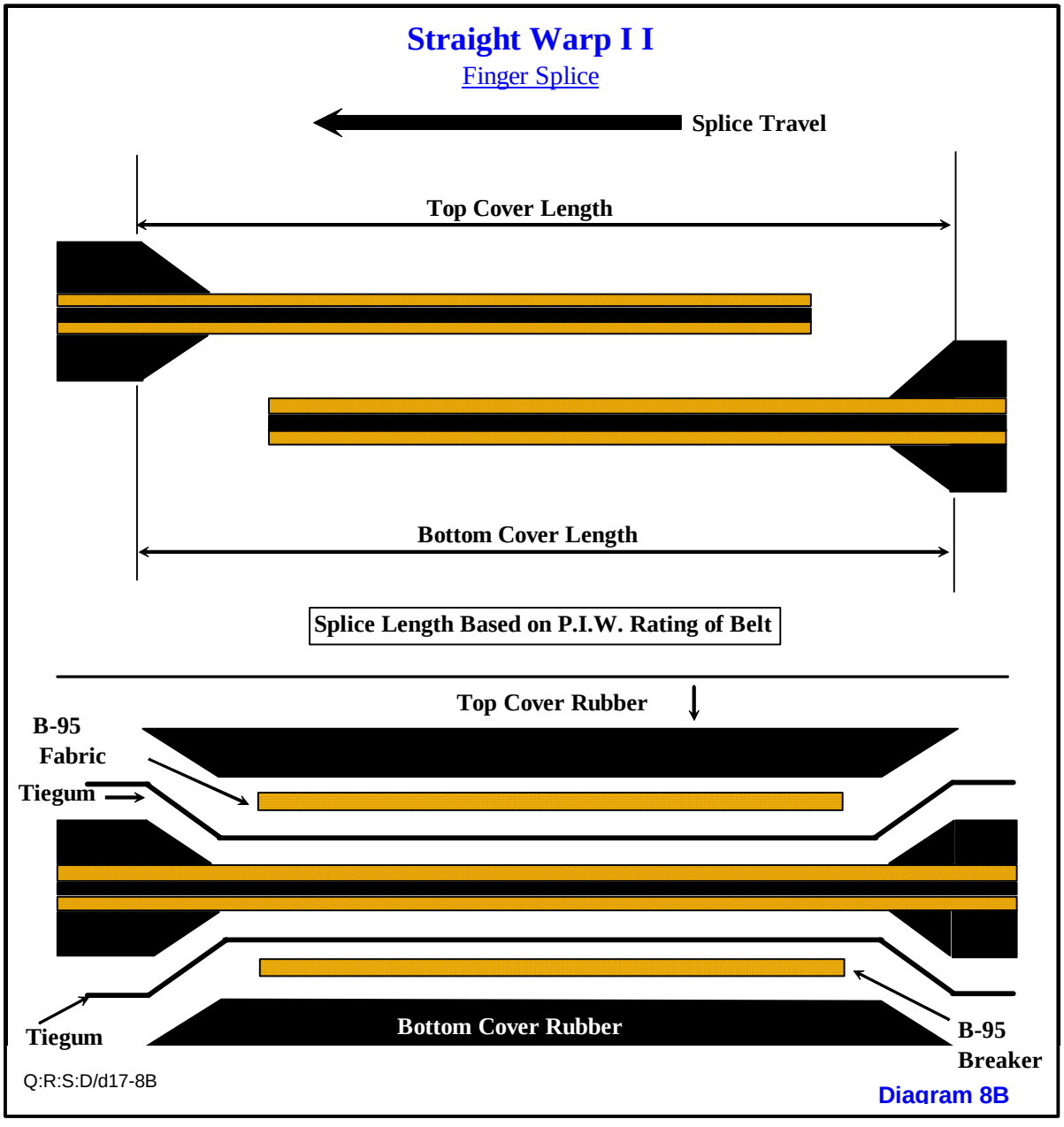
[20] Never return a vulcanized splice back into service that is still hot to touch. Wait until the splice reaches ambient temperature.

7.8 Remove the vulcanizer platens and inspect the entire splice. Trim the edges (take extra care not to cut the wrapped breaker fabric along the splice edges) and/or buff to suit. [21]

[21] 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.

8.0 Splice Layout Diagrams




Straight Warp I I
Finger Splice
Splice Travel
Top Cover Length
Bottom Cover Length
Splice Length Based on P.I.W. Rating of Belt
Top Cover Rubber
B-95
Fabric
Tiegum
Tiegum
Bottom Cover Rubber
B-95
Breaker
Q:R:S:D/d17-8B
Diagram 8B