

NEW ENGLAND ROPES

SPLICING GUIDE



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TOGETHER IN MOTION

SPLICING GUIDE

TABLE OF CONTENTS

General - Splicing

Fid Lengths	3
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Single Braid

Eye Splice (Bury)	4
Single Braid Eye Splice (Lock Stitch)	5
Single Braid Eye Splice (Tuck)	6

Double Braid

Eye Splice	8
Core-to-Core Eye Splice	11
Sta-Set X/PCR Eye Splice	13
Tachyon Splice	15

Braided Safety Blue & Hivve Eye Splice

19

Tapering the Cover on High-Tech Ropes

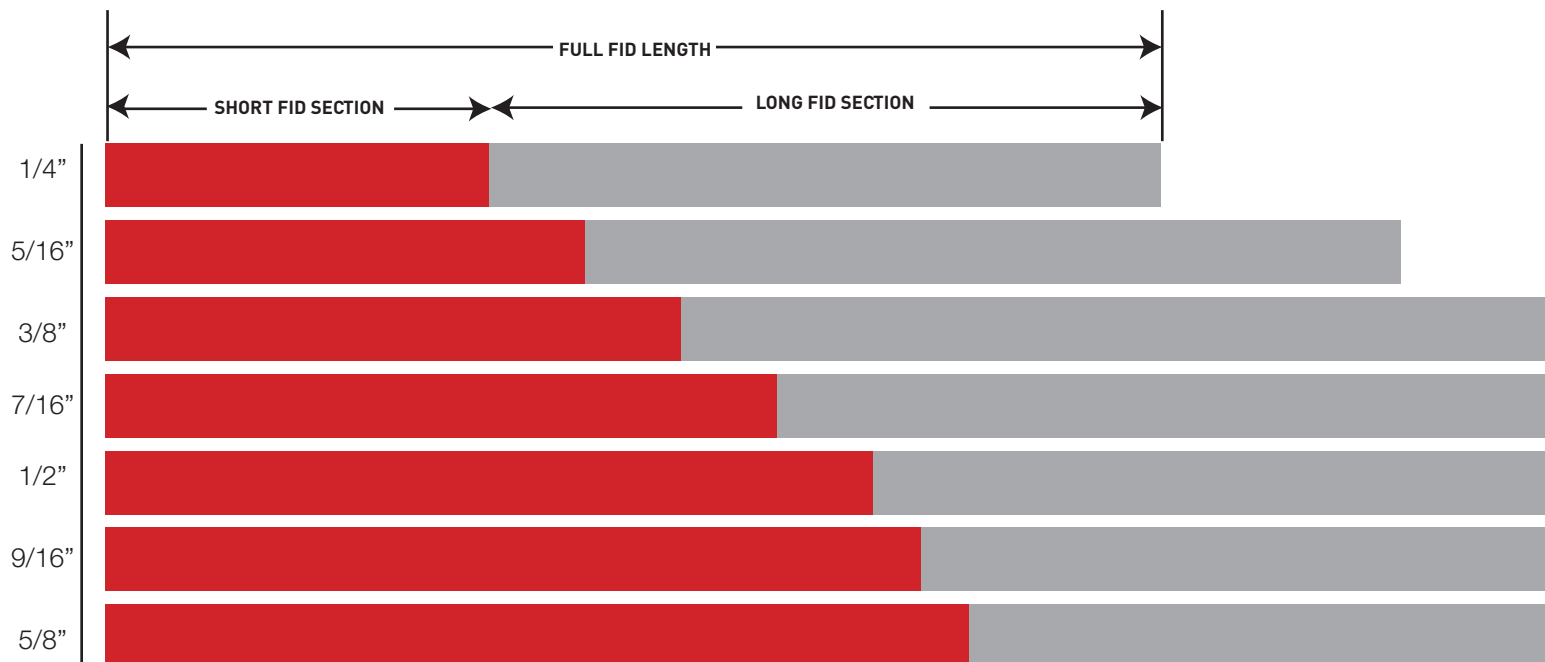
21

Mega Plait to Chain Eye Splice

22

Three Strand

Rope to Chain Splice	24
Eye Splice (Standard and Tapered)	26



SPLICING GUIDE



GENERAL-SPLICING TIPS

1. Before starting, it is a good idea to read through the directions so you understand the general concepts and principles of the splice.
2. A "Fid" length equals 21 times the diameter of the rope (Ref Fid Chart).
3. A "Pic" is the V-shaped strand pairs you see as you look down the rope.

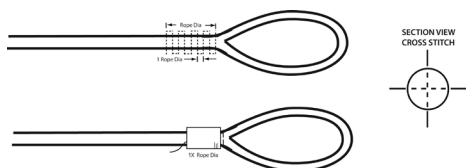
TOOLS REQUIRED

- Masking Tape
- Felt Tip Marker
- Splicing Fids
- Sharp Knife
- Measuring Tape

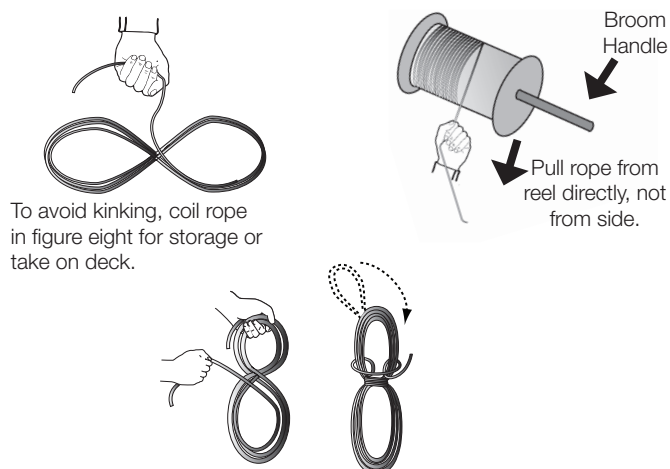
WHIPPING

Seize by whipping or stitching the splice to prevent the crossover from pulling out under the unbalanced load. To cross-stitch, mark off six to eight rope diameters from throat in one rope diameter increments (stitch length). Using same material as cover braid if available, or waxed whipping thread, start at bottom leaving at least eight inches of tail exposed for knotting and work toward the eye where you then cross-stitch working back toward starting point. Cut off thread leaving an eight inch length and double knot as close to rope as possible. Trim thread to a one inch length and bury remaining thread and knot into rope.

As a general rule of thumb, if you whip the rope, do so for a length a rope diameter and hold it in place with cross-stitching. Use the same material as the cover braid if available, or waxed whipping thread.



ROPE HANDLING



FID AND DIMENSIONS

Rope Dia.	Rope Circ.	Short Section Measure	Long Section Measure	Full Fid Length
1/4"	3/4"	2"	3 1/2"	5 1/2"
5/16"	1"	2 1/2"	4 1/4"	6 3/4"
3/8"	1 1/8"	3"	4 3/4"	7 3/4"
7/16"	1 1/4"	3 1/2"	6"	9 1/2"
1/2"	1 1/2"	4"	7"	11"
9/16"	1 3/4"	4 1/4"	8"	12 1/4"
5/8"	2"	4 1/2"	9 1/2"	14"
3/4"	2 1/4"	4 3/4"	11 1/4"	16"
7/8"	2 3/4"	5"	14"	19"
1"	3"	5 1/4"	15 3/4"	21"

USED ROPE

Soaking the section of used rope to be spliced in water will loosen and lubricate the fibers and make the splice easier to perform. Through use and exposure to the elements, the fibers in a used rope have probably lost some of their original strength. In addition, some shrinkage has probably occurred making this splice the most difficult to perform.



SINGLE BRAID EYE SPLICE (BURY)

FIGURE 1

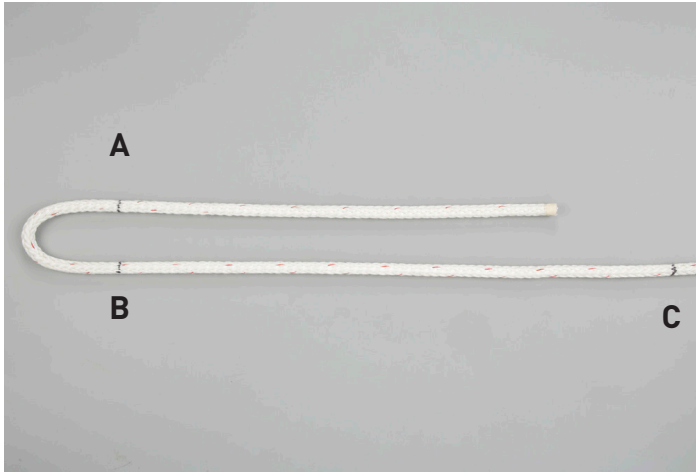
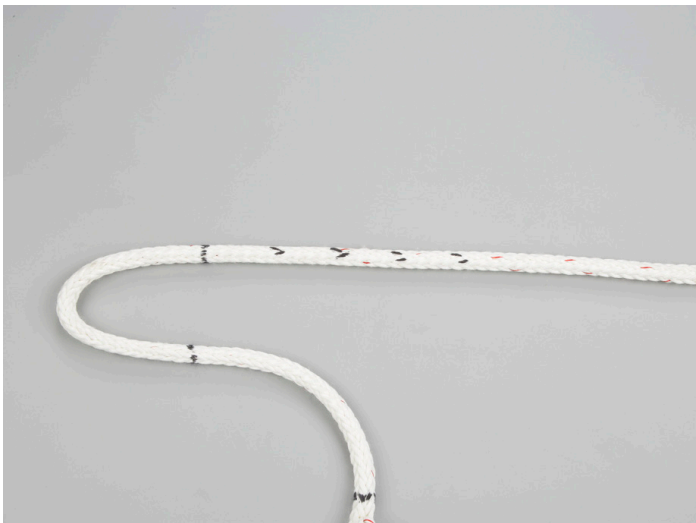


FIGURE 2



Step #1 - From the rope's bitter end measure back two full fid lengths, and place a mark on the rope. "A". Put a single wrap of tape at the bitter end (A fid length equals 21 times the diameter of the rope or 7 times the circumference.)

Step #2 - Form the desired eye size and mark the point opposite "A". This will be mark "B".

Step #3 - From mark "B", measure down the rope 3 full lid lengths, this will be mark "C".

Step #4 - From point "A" counting toward the bitter end, count out 6 pics. (A pic is the V shaped strand pair you can see as you look down onto the top of the rope.) Mark this pair and continue down the rope marking every 5th pair as shown.

Step #5 - Cut and remove these strands back to the bitter end.

Step #6 - Re-tape the bitter end and attach it to your splicing tool. Insert this tool at "B" and exit at "C". Pull through until "A" and "B" line up. Remove the tool and the tape wrap from the exposed tail.

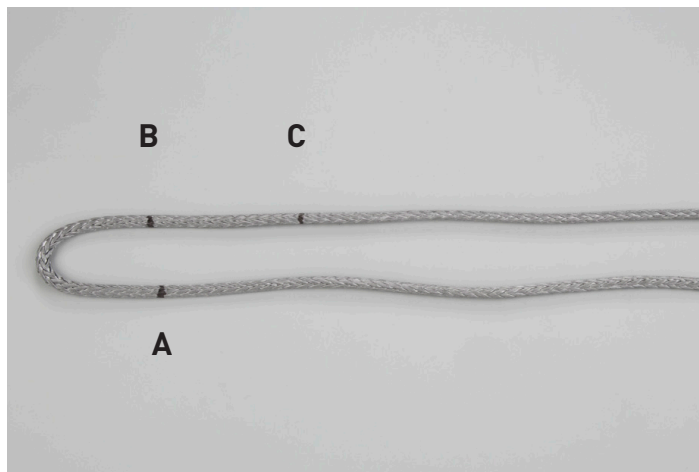
Step #7 - Firmly grasp the rope at the point where "A" and "B" meet. Smooth the rope away from this point up the standing part of the line. The tapered tail will withdraw into the rope.

Step #8 - We recommend lock stitching and whipping the splice. (See instructions on Page 2).



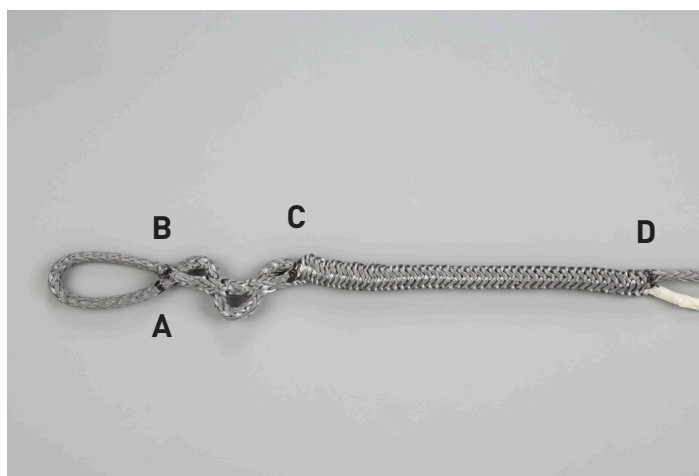
SINGLE BRAID EYE SPLICE (LOCK STITCH)

FIGURE 1



Step #1 - Mark rope three fid lengths from the bitter end. This is mark "A". Form the desired eye – size and place a mark opposite "A", this is mark "B". Measure 1 long fid section further. This is mark "C". Continue down the rope and additional three fid lengths. This is mark "D". (Fig. 1)

FIGURE 2



Step #2 - To mark the tuck points in the area between points "B" and "C" mark the 3rd, and 6th pics (Reference General Splicing Tips on Page 1). Open up "B" with a fid tool and pass the bitter end and tail through the ropes completely. Pull the tail through until "A" and "B" align. Make subsequent tucks in the same manner between the 3rd and the 4th, 6th and 7th strand pairs. (Fig. 2)

Step #3 - Pull the tucks tight as you go. After the last tuck above attach your splicing tool to the tail and insert at mark "C" exiting the rope at mark "D". Remove the tool and the tape wrap from the end of the tail end.

FIGURE 3



Step #4 - Work from the bitter end toward Mark "A", count three consecutive strand pairs and mark, count another five consecutive strand pairs and mark the fifth pair. Continue counting and marking the fifth consecutive strand pair until a total of five strand pairs have been marked. (Fig. 3) Cut and remove these strands back to bitter end and remove tape from the bitter end. After taper is complete hold rope at neck of splice and smooth cover until taper disappears.

Note: The rope may be too tight to bury before tapering, if so perform step 4 before steps 2 & 3



SINGLE BRAID EYE SPLICE (TUCK)

FIGURE 1

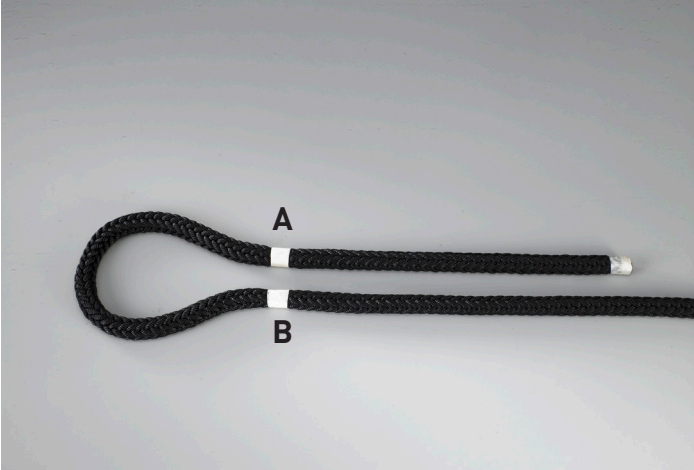


FIGURE 2



FIGURE 3



Step #1 - From the rope's bitter end measure back one full lid length and make mark "A". Tape at this mark. Now form desired eye size and make mark "B". (Fig. 1)

Step #2 - Tape each of the 12 strands, and unlay strands back to Mark "A". Try not to remove twist from individual strands.

Step #3 - Rope is comprised of a total of 12 strands, six (6) strands with left hand twist and six (6) strands with right hand twist. Select one left twist strand and one right twist strand and tape together. Repeat this procedure so that you have taped 6 separate strand pairs. Select strands that are located near one another as they emerge from Tape Wrap at Mark "A". (Fig. 2)

Step #4 - Lay rope out forming eye. Do not twist rope. Select 3 taped pairs closest to the standing part of the rope and mark on tape: #1, #2 and #3 respectively. Mark the other 3 pairs #4, #5, #6.

Step #5 - The rope axis is comprised of 6 strand crowns 3(S) & 3(Z). With fid, open rope at Mark "B" and insert strand pair #1 completely through the rope at a right angle. With remaining strand pairs (2, 3, 4, 5, and 6) insert each strand pair into the same opening as the #1 strand pair and exit one strand pair for each row of strand crowns. Pull each strand pair snug against the body of the rope. At this point each strand pair will be lined up with a line of crowns running parallel to the axis of the rope. (Fig 3 & 4)



SINGLE BRAID EYE SPLICE (TUCK)

FIGURE 4



Step #6 - Starting with strand pair #1, select a row of crowns down the axis of the rope and tuck the pair #1 over one strand and under two strands. Once tucked, pull out slack in strand pair #1. Make only one tuck. Now tuck pair strands #2 through #6 in the same way – with each pair select crown row and tuck the individual pair over one strand and under two strands. Pull out slack in each strand.

FIGURE 5



Remove tape wrap at Mark “A” and gently but firmly pull on each of the strand pairs so Mark “A” is now snug up to the base of the eye. (Mark B) Now complete two (2) more sets of tucks with each tapered strand pair. Be sure to tuck each strand pair down the same crown strand line - try to keep twist in each pair, and continually remove slack from each strand pair after tucking. (Fig. 5 & 6)

Step #7 – Cut off strand pairs #1, #3 and #5. Tuck strand pairs #2, #4 and #6 for additional 3 tucks – retain twist and remove excess slack.

FIGURE 6



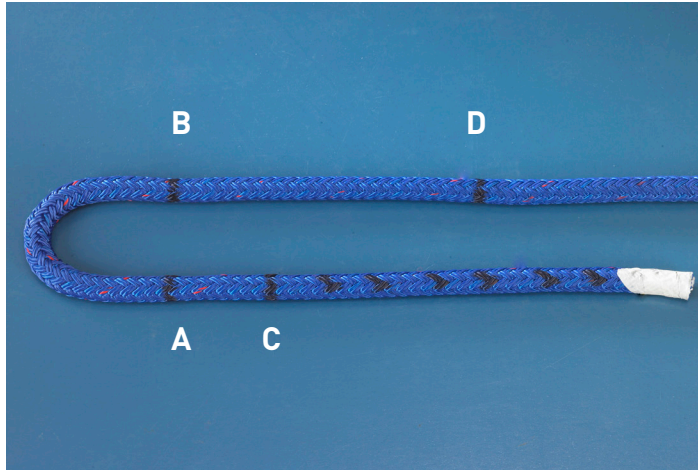
Step #8 - Split each strand pair (#2, #4, #6) into 2 individual strands and tape each strand. Cut off one strand in each pair leaving a short tail projecting from last tuck. Tuck the remaining 3 single taped strands for 3 tucks (over one under two) removing slack and keeping twist. Now cut off the taped strands leaving a short tail projecting as shown above.

Note: After cutting off the last strand, melt the ends of all the cut strands and remove tape.



DOUBLE BRAID EYE SPLICE

FIGURE 1



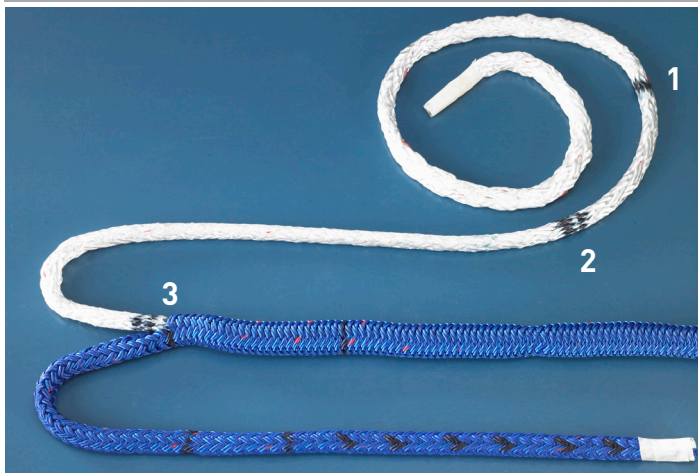
Step # 1 - From end of rope measure back one full fid length (see Fid Measurement Chart) and make Mark "A". Using Mark "A" as a reference, form the desired size eye and make Mark "B" on the rope directly opposite Mark "A". From Mark "A" count eight consecutive left or right strands toward the end of the rope and make a Mark "C". From Mark "B" measure one long fid section down the body of the rope and make mark "D." Measure approximately 5 full fid lengths from "D" and tie a slip knot in the rope. From Mark "C" count five consecutive left or right strands toward the end of the rope and mark the 5th left and right strand pair. From this point count another four consecutive strands and mark the 4th strand pair. Continue counting and marking in this 5:4 sequence to the end of the rope. (Fig. 1)

FIGURE 2



Step # 2 - Bend the rope sharply at Mark "B" and spread the cover strands to expose the core. Pry the core braid out from the cover. Use care to avoid pulling any of the cover strands. Pull the end of the core braid completely out of the cover. Tightly tape the end of both the cover and core braids. Holding the exposed core, slide the cover braid back to the knot. Then hold the knot and slide the slack cover back down the core in the direction of the end of the rope until all of the slack has been removed. Mark the core at the point where it exits from the cover. This is Mark "1". (Fig. 2)

FIGURE 3



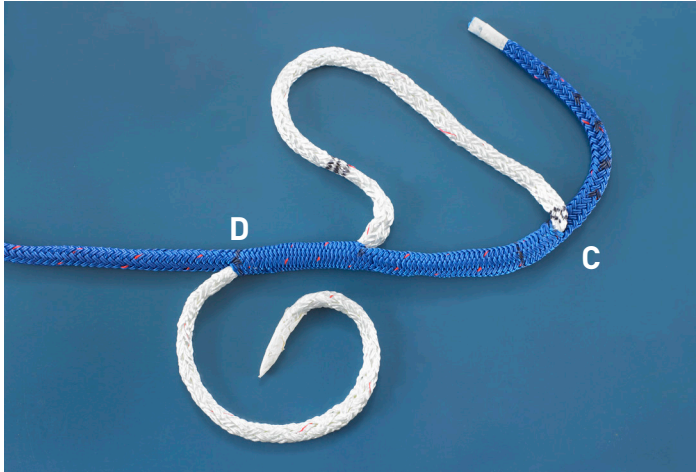
Step #3 - Once again slide the cover toward the knot. Measure on short fid length (see "Fid Measurement Chart") from Mark "1", toward the Knot and make two marks that go completely around the core. This is Mark "2". From Mark "2" measure one full fid length plus a short fid length toward the knot and make three marks completely around the core. This is Mark "3". (Fig. 3)

Note: If using a captive thimble or shackle, insert it per the special tips section.



DOUBLE BRAID EYE SPLICE

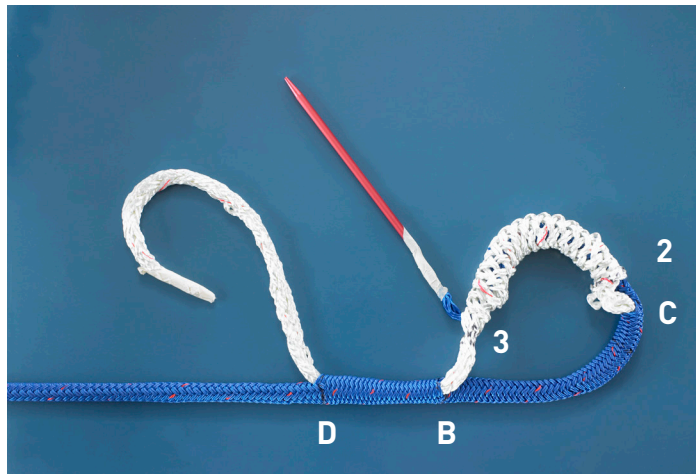
FIGURE 4



Step #4 - Taper core tail and attach fid. Insert the fid into the cover at Mark "C" and out at Mark "D". Pull core tail through at Mark "D" until marks "2" and "C" almost align. (Fig. 4)

Step #5 - Cut and remove the marked strand pairs on the cover tail, then retape the end. Attach the fid to the cover tail and tape as needed. Insert the fid into the hollow core at Mark "2" and out at Mark "3". (When exiting or entering the braid with the fid always go between strands). (Fig. 5) Remove the fid and tape. Notice the loop at mark "C" after running the cover through the core, to remove this loop simply pull on the core exiting mark "D" until the loop disappears.

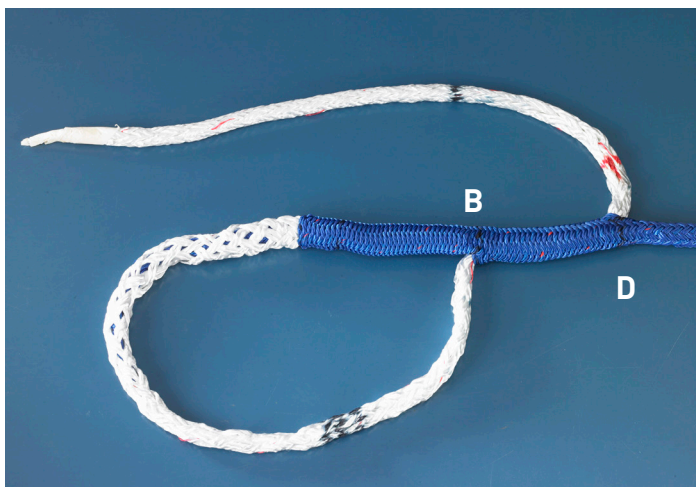
FIGURE 5



Step #6 - The crossover is the point where Mark "C" on the cover and Mark "2" on the core meet. To tighten, hold the rope at the crossover point and alternately pull on the free ends of the cover and core. Continue this process until the crossover is approximately the same diameter as the rope.

Step #7 - To bury the cover tail, hold the rope at the crossover and smooth the core toward the cover tail, which will disappear.

FIGURE 6

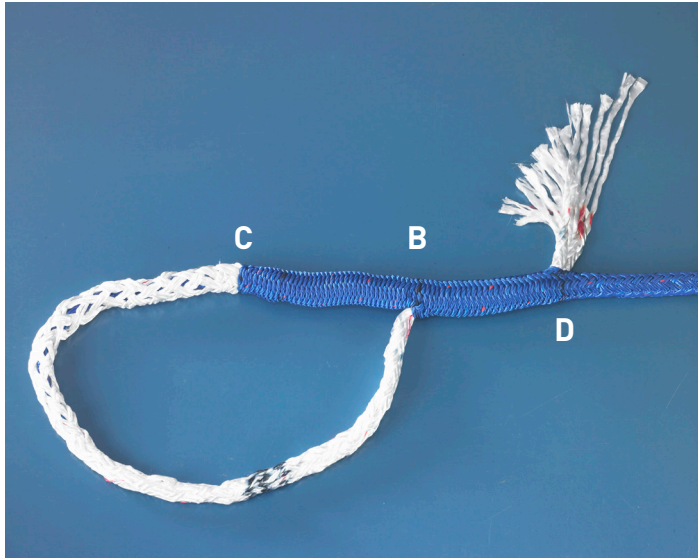


Step #8 - To bury the core tail, hold the crossover and smooth out the slack in the cover braid from the crossover down to Mark "D". Repeat this process several times to remove all cover slack. Most of the core will disappear; however, some of the core tail will still remain at Mark "D" after this process. Mark the core tail where it exits from the cover at Mark "D". (Fig. 6)



DOUBLE BRAID EYE SPLICE

FIGURE 7

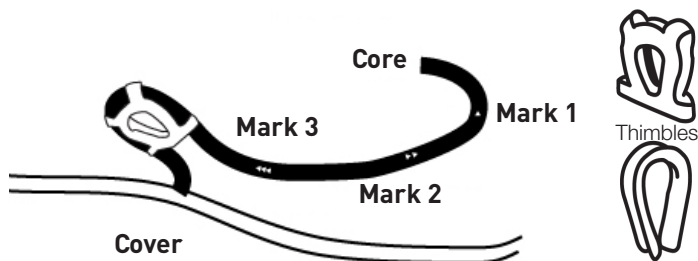


Then mark the core tail at Mark "B" by inserting the marking pen into the opening at Mark "B". (Fig. 6) Pull out the core tail at Mark "D" until the mark made at "B" appears. (Fig. 7) Cut off the excess core tail at the first mark (the one nearest the end of the core) and unbraid the core tail back to the second mark. Fan out the strands. Cut the strands at a 45 degree angle starting at a point about halfway back from the end. (Fig. 7) Hold the rope at the crossover and smooth the cover braid from the crossover toward Mark "D". The exposed core will disappear completely inside the cover.

Step #9 - Secure the knot tied in the body of the rope to a solid anchorpoint. The slack in the cover braid between the knot and Mark "B" will be used to bury the exposed core, crossover and cover down to Mark "A" to produce the desired size eye. This is accomplished by holding the rope

at the top of the eye and sliding the slack back from the knot towards the splice. Milk the cover from the crossover around the radius of the eye to the throat at "B" and pull that leg sharply with a spike to help seat the splice. Flex and/or hammer the splice section to loosen the fibers. Seize or cross-stitch the eye to finish the splice.

TIPS FOR SPLICING INTO A THIMBLE OR SHACKLE



To splice into a thimble with ears, shackle, or similar item, simply follow the directions of the splicing instructions, using the thimble or shackle bale to determine the eye size. Extract the core and insert the core through the bale or around the shackle as illustrated. The eye splice is then completed in a normal fashion with one exception: before final bury, slide the thimble around to cover side of eye. For a thimble without ears: insert thimble into eye before final burying of splice.

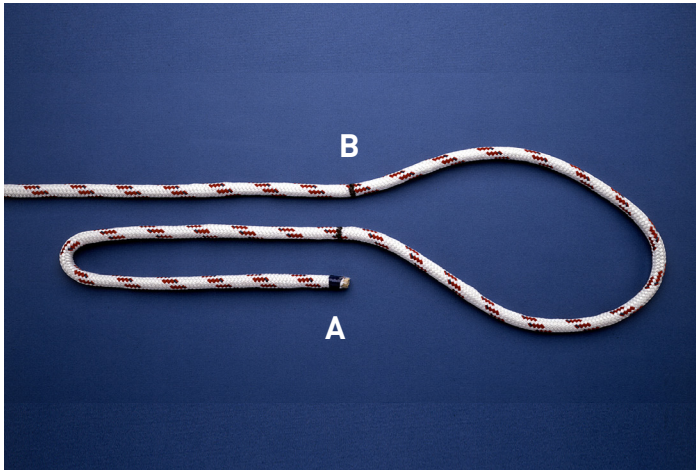
Notes:

1. The rope may be extremely tight where the fid is traveling between Marks "C" and "D". To create more space in this area, grasp the core as it exits the cover at point "B" and pull extra core out of the rope. This will cause the cover to "pucker" and give you some extra space.
2. If the distance between "C" and "D" is longer than the length of the fid, hold the fid in place by squeezing it through the cover braid. Slide the cover slack back from the fid to Mark "C" to draw the core tail into the cover. Then continue working the fid through the cover to Mark "D". Repeat as necessary.
3. Avoid snagging the core with the tip of the fid when it is passing through the cover in the vicinity of Mark "B". To check if the core has been snagged, pull on the exposed core where it exits from the cover at Mark "B". If the core moves freely it is OK to proceed. If the core appears to be stuck, pull the Uni-Fid back until the core is no longer snagged and continue.
4. In Step #9 if insufficient tension is placed on the rope while milking up the slack the crossover may tend to bunch up. If this happens, slide the cover slack back toward the knot until the crossover is the proper size. Then repeat the milking procedure.



CORE-TO-CORE EYE SPLICE

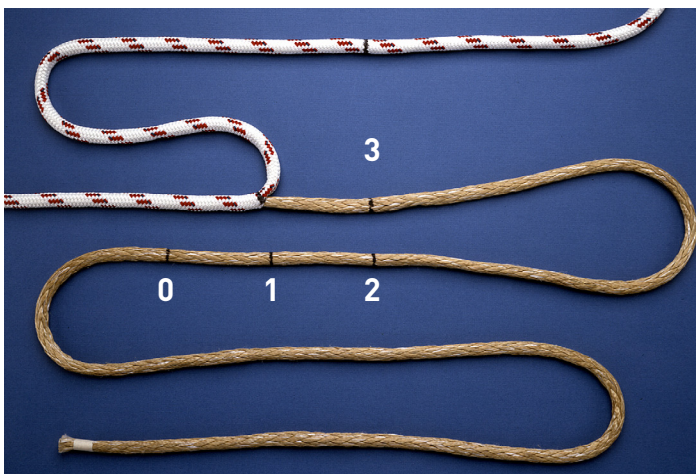
FIGURE 1



Step # 1 - Place a single wrap of tape on the end of the rope, measure off three (3) fid lengths from the end and make a mark on the cover. This is mark "A". Form the eye and make a second mark opposite the first. This is mark "B". "A" to "B" = Eye Size. Tie a slipknot approximately ten (10) fid lengths down from mark "B". (Fig. 1)

Step #2 - Extract the core at mark "B" by bending rope sharply and carefully spreading the cover strands to expose the core. Then pry the core braid out using the pointed end of the fid. Place a single wrap of tape on the end of the core and then, while holding exposed core, slide the cover back as far as possible towards the knot. Then smooth the cover

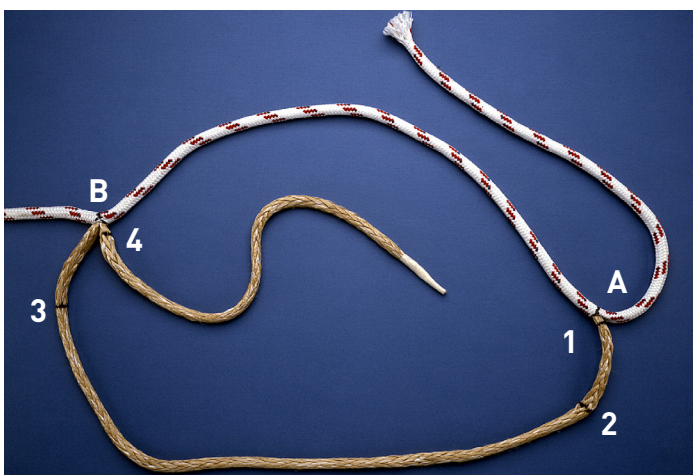
FIGURE 2



back over the core to the point of extraction. Smooth cover again until all slack is removed and mark the core where it comes out of the cover. This is mark "0". Again, slide the cover back towards the knot and measure one short fid section towards the knot from mark "0" and mark the core. This is mark "1". Measure one more short fid from mark "1", and this is mark "2". Measure 4 fid lengths towards the knot from mark "2" and mark the core. This is Mark "3". (Fig. 2)

Note: If using a captive thimble or shackle, insert the cover tail so that the thimble or shackle is situated between marks A & B

FIGURE 3

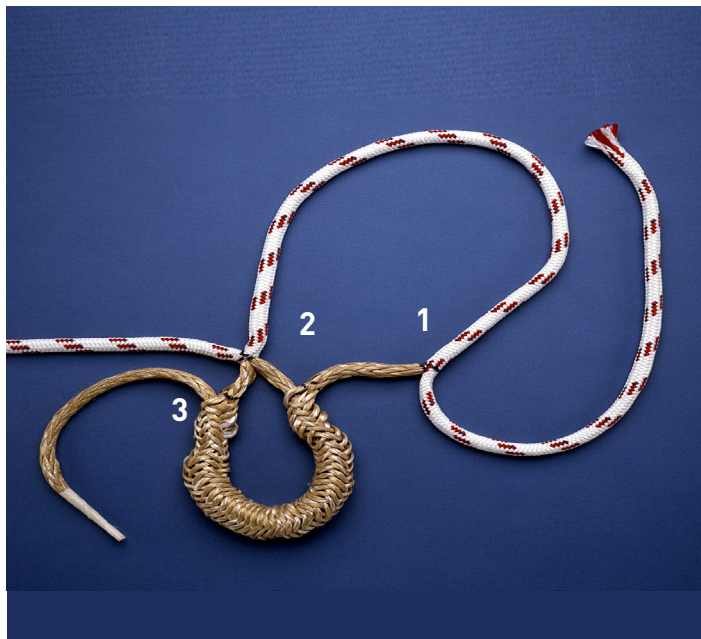


Step #3 - Attach the fid to the end of the core. Insert the core into the cover at mark "A" around the radius of the eye and out of the cover at mark "B". The two sections of the core exiting from the cover at mark "B" should pass through the same hole between the cover stands. Pull the core through the cover until mark "1" on the core is aligned with mark "A" on the cover. Hold mark "1" and mark "A" together and smooth out the cover from mark "A" to mark "B" to remove all of the slack in the cover. After removing all of the cover slack, mark the core tail where it exits the cover at mark "B". This is mark "4". At a distance 1/3rd of the way from mark "4" towards the end of the core make a mark on the core, this is your "core tapering mark". (Fig. 3)



CORE-TO-CORE EYE SPLICE

FIGURE 4



Step #4 - With the fid still attached to the end of the core, insert the core tail into the core at mark “2” and out at mark “3”. Pull the core tail through until mark “4” is aligned with mark “2”. Pull out sufficient core tail from mark “3” to expose the “core tapering mark” and remove the fid. (Fig. 4)

Note: You may want to rap some tape around the core where marks 2 & 4 meet to temporarily hold them together.

Step #5 - At the core tapering mark, cut and remove one strand. Measure a distance equal to 1/12th the distance from the core taper mark to the end of the core (core taper increment) then cut & remove one strand. Continue using that same measurement (core taper increment) to cut and remove strands until you have cut 11 of the 12 strands to create a smooth taper. Hold the core where marks 2 & 4 coincide and smooth the core back to bury the section that was just tapered

Step#6 - Before burying the cover tail, taper the end of the tail and tape tightly. Attach the cover tail to a very small fid and proceed to bury the cover tail. When burying the tail enter at Mark B and exit down the rope a distance equal to 7 times the rope diameter. Pull such that at least half of the cover tail is exiting the rope at that point.

Notes:

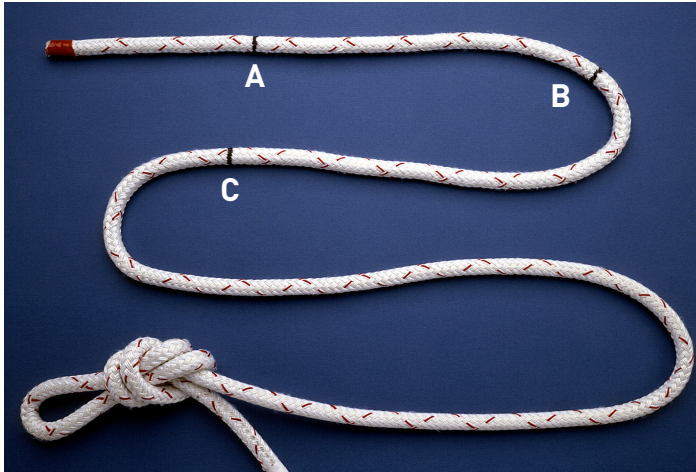
1. Make sure not to snag any of the core fibers while burying the cover tail and take care not to twist the cover tail. Secure the slipknot to a fixed anchor point. Remove the wrap of tape from core at marks 2 and 4. Holding the core at the point where marks “2” & “4” coincide, place tension on the rope and smooth out the cover back over the core from the slipknot towards the eye.
2. While smoothing the rope / cover back it will be necessary to pull on the cover tail a few times to remove any slack generated. As the cover approached the point on the core where marks “2”&“4” coincide you may have some bagging of core that is coming out of the eye at “B”. Smooth the cover from “A” to “B” to draw that bagging of core down into the body of the rope. As the cover approaches the point on the core where marks “2” & “4” coincide, it may be necessary to alternately pull some of the core back out of the cover. Continue smoothing the cover over the exposed core in order to get the cover marks “A” and “B” to be side by side .
3. Pull the cover tail to completely bury mark “A” into the cover. Mark the exit point on the cover tail; then pull cover tail tightly and cut at mark. Taper cover tail, then smooth cover from mark “B” to exit point so the cover tail pulls back into splice.
4. It may not be possible to bury the cover tail for every rope. If it is not possible then cross stitch and whip the cover tail to the outside of the rope after burying the core.

Step#7- Use nylon whipping thread, cross stitch and whip the portion of the splice where the cover tail is buried to prevent any slippage.



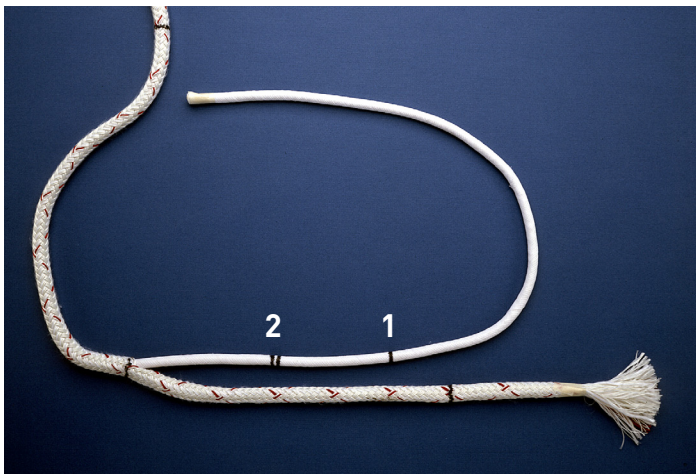
STA-SET X / PCR EYE SPLICE

FIGURE 1



Step #1 - Measure back from the bitter end 1 long fid section, to make Mark "A". Form desired eye size. (If a thimble is to be used form the rope around it with "A" as one side.) Make a mark directly across from "A", this is Mark "B". Measure back 1 full fid lengths from "B" to Mark "C". Tie a slipknot some 8 to 10 fids further up the rope. (Fig. 1)

FIGURE 2



Step #2 - Extract core from rope at Mark "B" as shown, (Fig. 2). Tightly tape the end of the core. Slide cover down the core as far as possible toward the knot. Now smooth the cover from the knot toward the end of the core. Mark core where it exits from cover and make Mark "1". Slide cover back down core, measure 1 short fid length from Mark "1" towards knot and make Mark "2". Place a single wrap of tape around core at Mark "2". (Fig. 2)

FIGURE 3



Step #3 - Taper the end of the core tail and attach fid. Slit and remove the fabric tape covering the core from Mark "2" to the end of the fid, exposing the parallel core yarns. (Fig. 3)

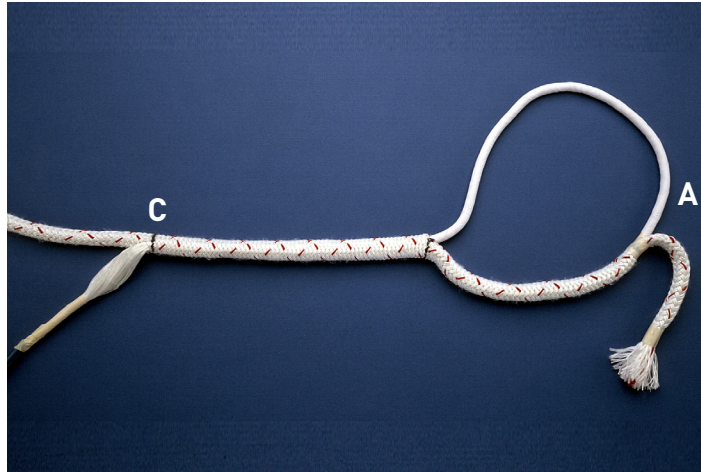
If a closed termination is being placed in the eye, slide the hardware onto the core at this time. Insert tip of fid into the cover at Mark "A" and work it down the rope and out at Mark "C". Do not snag any cover yarns with the tip of the fid.

Note: Slack may be introduced into the cover to open it up by pulling out more of the core from Mark "B". (Fig. 4)



STA-SET X / PCR EYE SPLICE

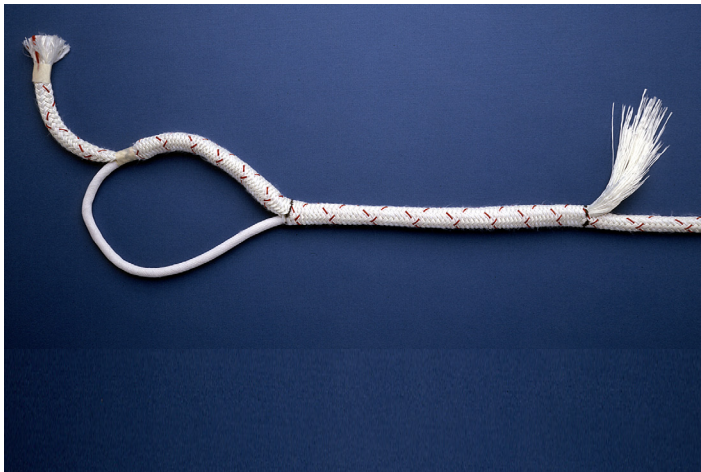
FIGURE 4



Step #4 - Pull slightly more than a short fid length of core out of rope at Mark "C." (Fig. 5) Measure and mark the core fibers 1 short fid length from the end. Fan the core fibers and cut at a 45° angle from the mark to the bottom end. (Fig. 6)

Step #5 - From Mark "A" on cover, count 5 pics toward end of cover tail. Unbraid cover from end back to this point; and cut at a 45° angle from the mark to the end. Carefully pull core back out of cover at Mark "A" until Mark "2" on core (where tape was applied in Step 2). lines up with Mark "A". This is the crossover point. Tightly tape the tapered end of the cover to the core starting from Mark "A" and working toward the end of the cover. Use masking tape and overlap

FIGURE 5



each wrap of tape as little as possible. After taping, roll the taped section between your hands to smooth the taped area. (Fig. 6)

Note: It may not be possible to bury the cover tail on every rope. If it is not possible then cross stitch and whip the cover tail to the outside of rope after burying the core.

FIGURE 6

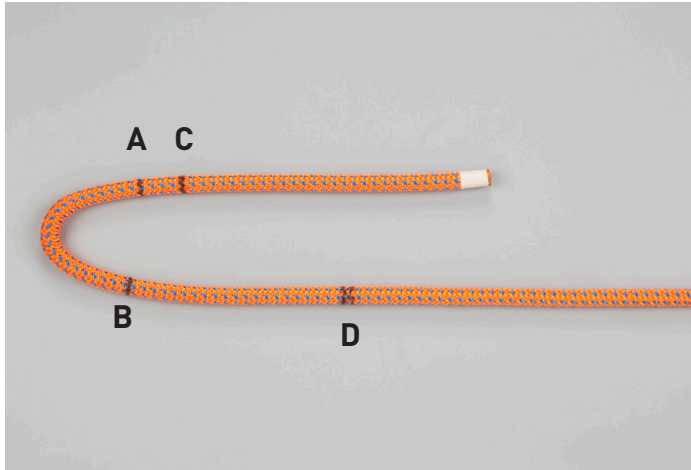


Step #6 - Attach the knot to a secure anchor point (a good deal of tension may be required to bury the splice). Bury the exposed section of the splice up to the crossover point by milking the cover back up the rope from the knot while holding rope at Mark "A." Keep the exposed core under tension while milking the cover. If the rope gets too tight when the crossover is being buried, flex and/or hammer the crossover to loosen the fiber. Continue the process until crossover is buried up to Mark "A" and the cover is snug around the eye. To assist in the final bury, insert a large fid or rod through the eye and give a sharp tug. Seize, cross-stitch or whip the throat.



TACHYON™ EYE SPLICE

FIGURE 1



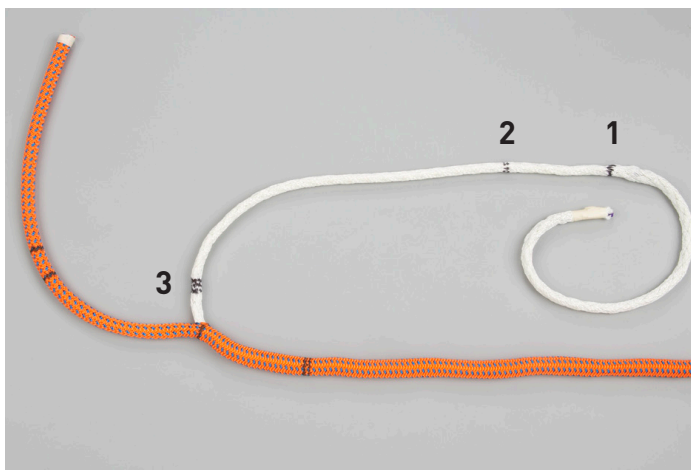
Step #1 - From end of rope measure back one full fid length (see Fid Measurement Table) and make Mark “A”. Using Mark “A” as a reference, form the desired size eye and make Mark “B” on the rope directly opposite Mark “A”, as shown. (If using a thimble, shackle or other hardware in the eye refer to the special tips section). From Mark “B” measure one long fid section (down the body of rope) and make Mark “D”. From Mark “D” measure down the rope approximately 5 full fid lengths and tie a slip knot or figure 8 knot in the rope. From Mark “A” count eight consecutive left or right strands toward the end of the rope and make a heavy mark completely around the rope. This is Mark “C” (Fig 1).

FIGURE 2



Step #2 - Bend the rope sharply at Mark “B” and carefully spread the cover strands to expose the core. Pry the core braid out from the cover. Use care to avoid pulling any strands. Pull the end of the core braid completely out of the cover (Fig 2). Tightly tape the end of both the cover and core braids. Holding the exposed core, slide the cover braid back to the knot. Then hold the knot and slide the slack cover back down the core in the direction of the end of the rope until all of the slack has been removed. Mark the core at the point where it exits from the cover. This is Mark “1”.

FIGURE 3

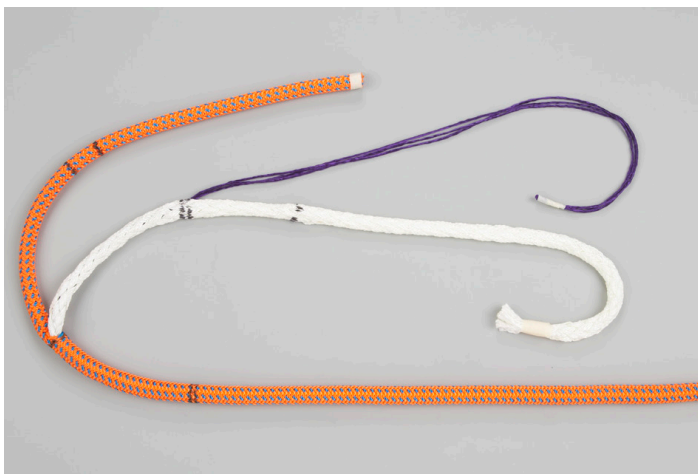


Once again slide the cover toward the knot. Measure one short fid length (see “Fid Measurement Chart”) from Mark “1”, toward the knot and make two marks that go completely around the core. This is Mark “2”. From Mark “2” measure one full fid length plus a short fid length toward the knot and make three marks completely around the core. This is Mark “3” (Fig 3).



TACHYON™ EYE SPLICE

FIGURE 4



Step #3 - Extract inner core from braided core at Mark 2 (Fig 4).

Step #4 - Taper the braided core tail and attach fid. Insert the fid into the cover at Mark "C" and out at Mark "D". Pull core tail through at Mark "D" until Marks "2" & "C" align. Remove the fid from core tail (Fig 5).

Notes:

1. The rope may be extremely tight where the fid is traveling between Marks "B" and "D". To create more space in this area, grasp the core as it exits the cover at point "B" and pull extra core out of the rope. This will cause the

FIGURE 5

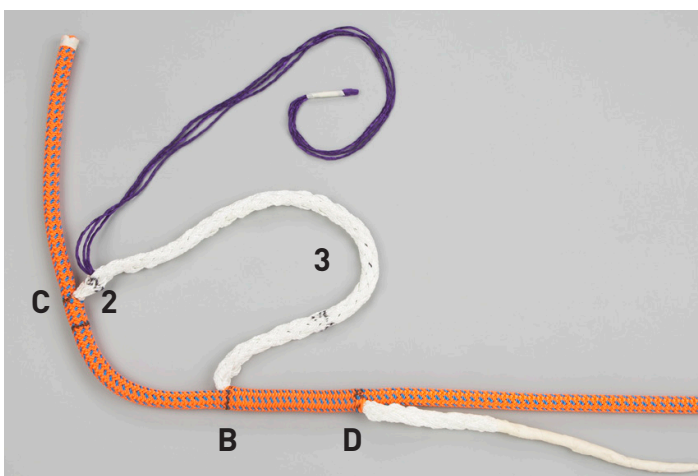


FIGURE 6



cover to "pucker" and give you some extra space.

2. If the distance between "C" and "D" is longer than the length of the fid, hold the fid in place by squeezing it through the cover braid. Slide the cover slack back from the fid to Mark "C" to draw the core tail into the cover. Then continue working the fid through the cover to Mark "D". Repeat as necessary.
3. Avoid snagging the core with the tip of the fid when it is passing through the cover in the vicinity of Mark "B". To check if the core has been snagged, pull on the exposed core where it exits from the cover at Mark "B". If the core moves freely it is OK to proceed. If the core appears to be stuck, pull the Fid back until the core is no longer snagged and continue.

4. When exiting or entering the braid with the fid always go between strands.

Step #5 - To taper the cover tail, from Mark C, count towards the bitter end of the sleeve, 3 strand pairs, pull out the 3rd strand pair, removing both the "S" and "Z" yarns. Move up the sleeve, counting another 4 strand pairs, removing the 4th strand pair. Continue this pattern 3, 4, 3, 4, etc... until a total of 6 strand pairs have been removed. Cut the pulled strand pairs (Fig 6).



TACHYON™ EYE SPLICE

FIGURE 7



FIGURE 8



FIGURE 9



Step #6 - Attach the fid to the cover tail and tape as needed. Insert the fid into the braided core at Mark “2” and out at Mark “3” (Fig 7).

Notes:

1. Make sure not to cross the yarns of the inner core.
2. Notice the loop at mark “C” after running the cover through the core, to remove this loop simply pull on the core exiting mark “D” until the loop disappears.

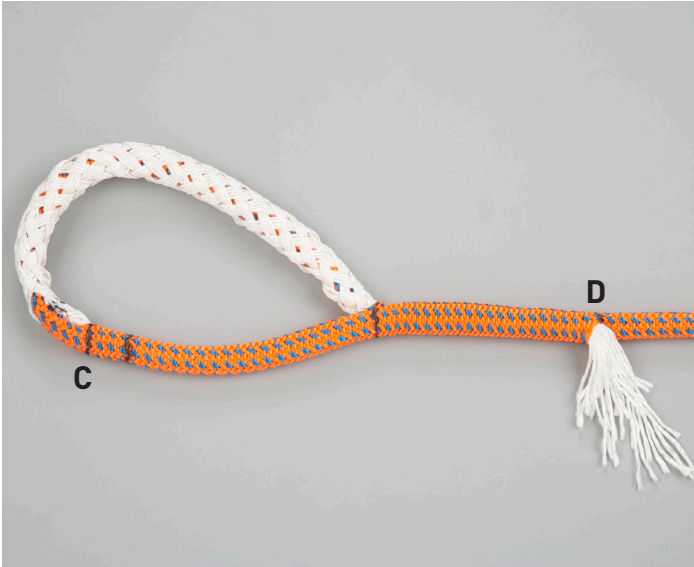
Step #7 - The crossover is the point where Mark “C” on the cover and Mark “2” on the core meet. To tighten, hold the rope at the crossover point and alternately pull on the free ends of the cover and core tails. Continue this process until the crossover is approximately the same diameter as the rope. Remove tape from cover tail and finish taper from point of last cut strand pair in Step 5, taper cover tail by cutting the strands at a 45 degree angle. The same needs to be done to the inner core. Gently pull the inner core so all of the slack in the yarns is removed. Cut one of the ends at the point where it exits the core at mark 2. Cut a second end 2” up from the first cut end, and cut the third end 2” up from the second end (Fig 8).

To bury the cover tail and inner core, hold the rope in the eye and pull back on the rope slightly, pull just enough to bury cover and the inner core. Once buried, hold the rope at the crossover and smooth the core (Fig 9).



TACHYON™ EYE SPLICE

FIGURE 10



Step #8 - To bury the core tail, hold the crossover and smooth out the slack in the cover braid from the crossover down to Mark "D". Repeat this process several times to remove all cover slack. Most of the core will disappear; however, some of the core tail will still remain at Mark "D" after this process. Mark the core tail where it exits from the cover at Mark "D". This is mark 4. Pull out the core tail at Mark "D" a distance equal to the distance between Mark B and Mark D (1 long fid). Cut off the excess core tail at Mark 4 and unbraid the core tail a distance equal to the distance between Mark B and Mark D (1 long fid). Fan out the strands. Cut the strands at a 45 degree angle starting at a point about halfway back from the end (Fig 10). Again, hold the rope at the crossover and smooth the cover braid from the crossover toward Mark "D". The exposed core will disappear completely inside the cover.

Step #9 - Secure the knot tied in the body of the rope to a solid anchor point. The slack in the cover braid between the knot and Mark "B" will be used to bury the exposed core, crossover and cover down to Mark "A" to produce the desired size eye. This is accomplished by holding the rope at the top of the eye and milking the cover slack back from the knot towards the splice. Milk the cover from the crossover around the radius of the eye to the throat at "B". Place a metal rod (or fid) in the eye and pull sharply to help seat the splice.

Note: Flex and/or hammer the splice section as needed to loosen the fibers. It is very important that all of the slack in the eye and in the body of the rope be removed. If insufficient tension is placed on the rope while milking up the slack the crossover may tend to bunch up. If this happens, slide the cover slack back toward the knot until the crossover is the proper size. Then repeat the milking procedure.

Step #10 - Lock stitch & whip the splice. Begin the whipping 3" down from the throat of the splice and whip a distance equal to the diameter of the rope. Then using double strand of whipping twine; next to the whipping cross stitch completely thru the rope, pass the twine over the whipping and cross stitch again. Pass twine over whipping again, then stitch thru the cover exiting next to the whipping 90 degrees from the entry point. Pass twine over the whipping a third time; then cross stitch completely thru the rope, pass twine over the whipping and cross stitch again. Trim ends close to rope and heat seal.



BRAIDED SAFETY BLUE & HIVEE EYE SPLICE

FIGURE 1

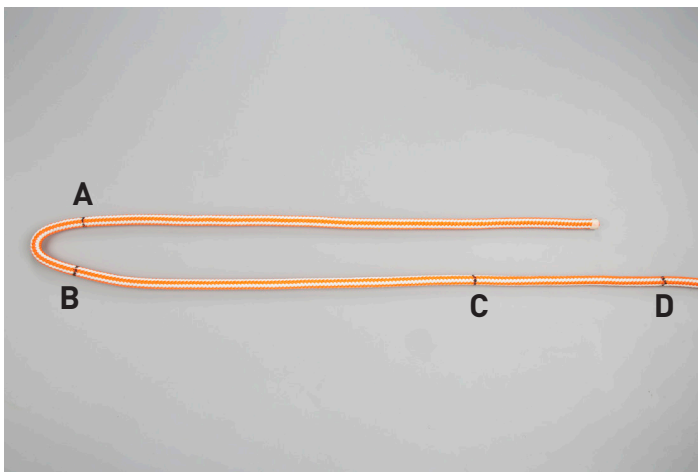


FIGURE 2

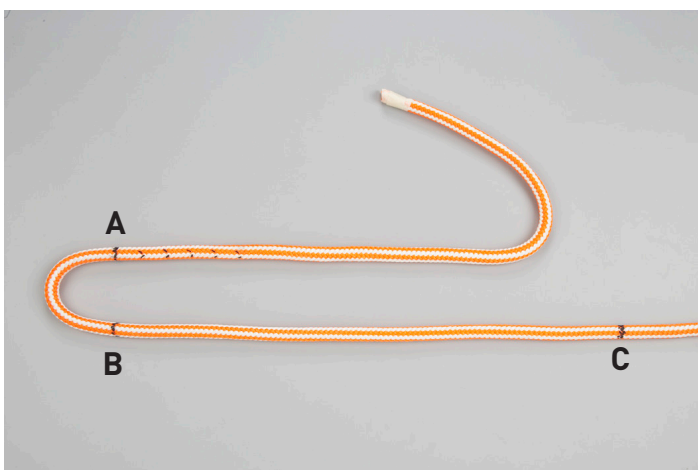
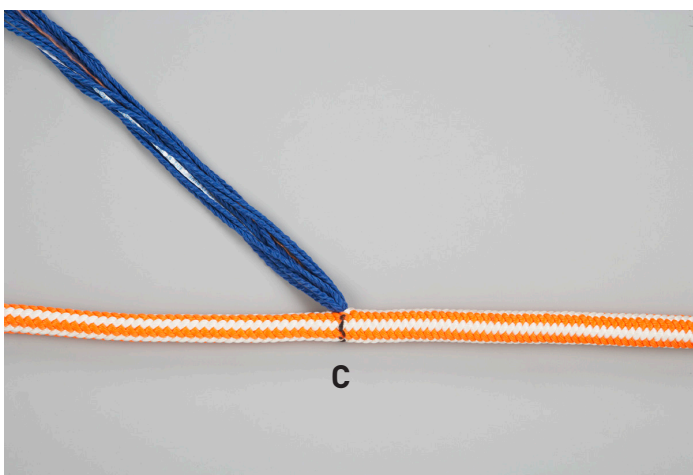


FIGURE 3



WARNING

Only qualified personnel should perform this splice. If a splice begins to slip while in use, discontinue use of rope. When spliced correctly, this product meets the static strength requirements of BS EN 1891 with terminations. Note: Prior to beginning splice, slide a 5 inch piece of clear shrink tube over end and down the body of the rope. We will need this shrink tube in step 9.

Step #1 - Measure 2 1/2 fids (27.5 in, 700mm) from end of rope and make Mark "A." Form desired size of eye and make Mark B opposite Mark "A." Measure 2 fids (22 in, 560mm) down from Mark "B" and make Mark "C."

Measure 1 fid (11 in, 280mm) down from Mark "C" and make Mark "D." Tie a knot in the body of the rope about 1 fid down from Mark "D." (Fig. 1)

Step #2 - From Mark "A" count 5 strand pairs towards end of rope and mark the 5th pair (left and right strands). Continue counting down 5 pairs and marking the 5th pair until a total of 5 strand pairs are marked. (Fig. 2)

Step #3 - Carefully open up the braid at Mark "C" and pull out the blue core yarns from the end of the rope back to Mark "C." (Fig 3)

Step #4 - Pull out marked strand pairs from cover braid. DO NOT CUT. Tape end of cover tail and attach fid. (Fig. 4)



BRAIDED SAFETY BLUE & HIVEE EYE SPLICE

FIGURE 4

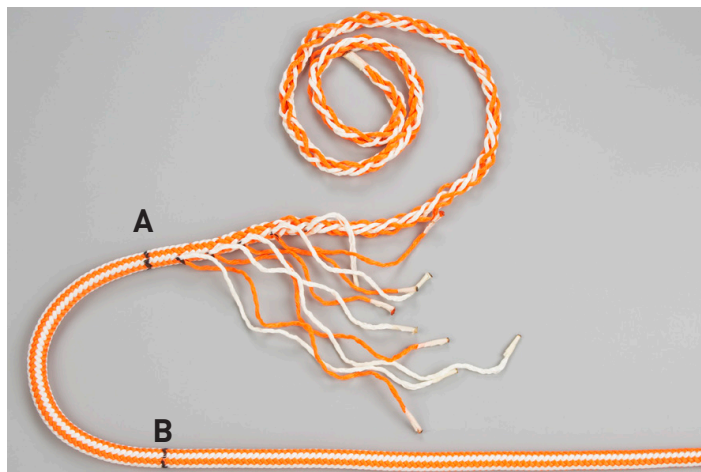
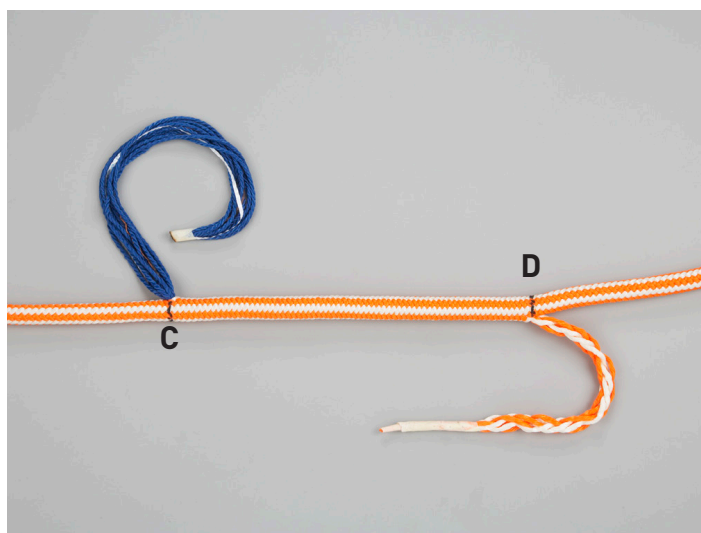


FIGURE 5



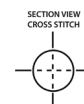
Step #5 - Insert fid into rope at Mark B and out at Mark D to pull tail through body of rope from B to D. As each marked strand pair is about to be buried in the rope at Mark B carefully cut each strand in the marked pair. Continue to pull the tail end of the rope through until Marks A & B coincide. (Fig. 5)

Step #6 - Smooth rope from eye back to Mark D to remove all slack in the braid. Smooth rope from knot to Mark C to bury as much of the blue core yarns as possible. Mark both cover tail and core yarns where they exit from body of rope. (Fig. 5)

Step #7 - Pull buried tail and cover yarns out of rope at their respective exit points until about 1 fid length is exposed. This is the distance that the tail and the, core yarns overlap in the splice. Cut both cover tail and core yarns where they were marked in Step No. 6 above. Taper both cover tail and core yarns from the ends back about 1 fid length. This taper provides a smooth transition from the buried tail of the splice to the core yarns extending down the remainder of the rope. Bury the exposed ends by alternately smoothing the rope from the eye down and from the knot up.

Step #8 - Secure knot firmly in place and pull sharply on eye to make sure all slack is removed from splice area and cover and core tails are seated properly.

Step #9 - Begin the whipping 3" down from the throat of the splice and whip a distance equal to the diameter of the rope. Then using double strand of whipping twine; next to the whipping cross stitch completely thru the rope, pass the twine over the whipping and cross stitch again. Pass twine over whipping again, then stitch thru the cover exiting next to the whipping 90 degrees from the entry point. Pass twine over the whipping a third time; then cross stitch completely thru the rope, pass twine over the whipping and cross stitch again. Trim ends close to rope and heat seal.





TAPERING THE COVER ON HIGH-TECH ROPES

FIGURE 1

Step #1 – First determine where you want to make the transition / where you will be removing the core. Then about 6 ft back from the transition point tie a knot in the rope (knot should be on the side that you will be keeping the cover)

Step #2 – At the transition point open the cover braid by bending the rope sharply and carefully spreading the cover strands to expose and remove the core.

Balance the core to the cover by milking the rope from the knot back towards the transition point.

Mark the core where the it exits the cover. (Fig. 1)



FIGURE 2

Step #3 – Keep 12 inches of cover tail beyond the transition point, cut off & remove the balance of the cover. Taper the end of the cover tail by taping the end (2 inch) and cutting at a 45 degree angle.

Attach the cover tail to a fid. Insert the fid into the core at the mark you made on the core and out approximately 16 inches down the core towards the bitter end. (Fig. 2)

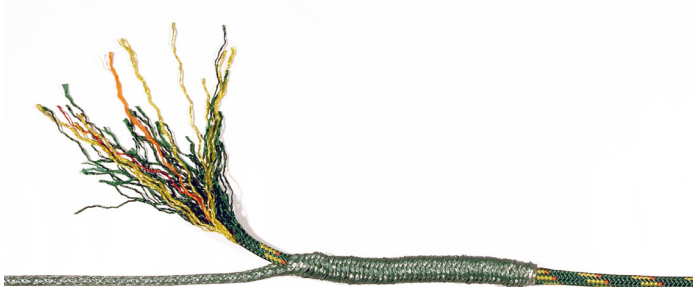


FIGURE 3

Step #4 – Milk the rope from the knot to the transition point. Remove the fid from the cover tail.

Taper the cover tail by unbraiding approximately 6 inches of the cover and then cutting the strands at various lengths. (Fig. 3)

Step #5 – Milk the rope from the knot toward the exit point of the cover tail. The cover tail should go into the core. Finish by cross-stitch approximately 6 inches on each side of the transition point; then whip over the transition point.





TAPERED MEGA PLAIT TO CHAIN

FIGURE 1



FIGURE 2

Step #1 - Measure from the end of the rope one full fid length (or 21 times the diameter) and place a wrap of twine around the rope at this point and tie tightly (a double over-hand knot would suffice).

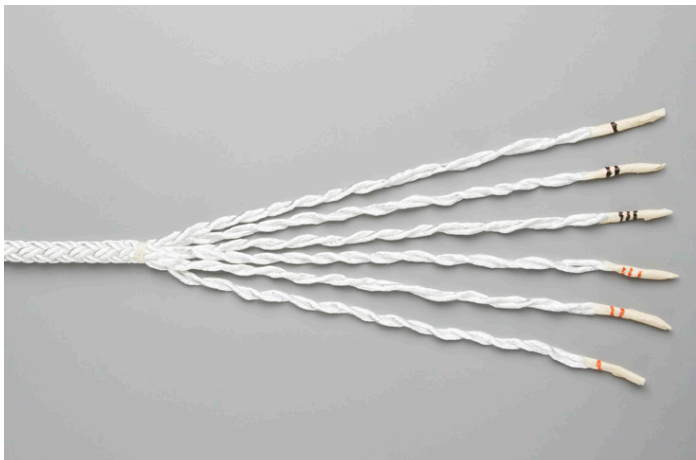


FIGURE 3

Step #2 - Tape each of the 6 strand pairs together, and un-lay strands back to the twine. Label strand pairs 1 through 6 as shown in photo. (Fig. 2)

Step #3 - Setup strands 1, 2 and 3 on one side of the chain link with the remaining strands on the other side. Pass strands through the link from opposite sides in an alternating fashion. First pass strand 1 through the link in one direction, then pass strand 6 through the link in the opposite direction, then strand 2 in the same direction as strand 1 and strand 5 in the same direction as strand 6, and the same with strands 3 and 4.



Step #4 - Perform Initial Strand Tuck.

1. Prior to beginning tucks, insert small rod (3/16" diameter) between the throat of the splice and the chain link to act as a temporary spacer.
2. Starting with strand pair #1, select a strand pair that turns to the right (or to the left) and tuck strand pair #1 under the selected strand pair. Make only one tuck.
3. Now tuck strand pairs #2 and #3 in the same way – for strand pair #2, select the strand pair that turns in the opposite direction as the strand pair used for pair #1. (Fig. 3) Strand pair #3 is to be tucked under the strand pair that turns in the same direction as the #1 strand pair.
4. Repeat process for strand pairs #4, #5 and #6. Tuck-



TAPERED MEGA PLAIT TO CHAIN

FIGURE 4

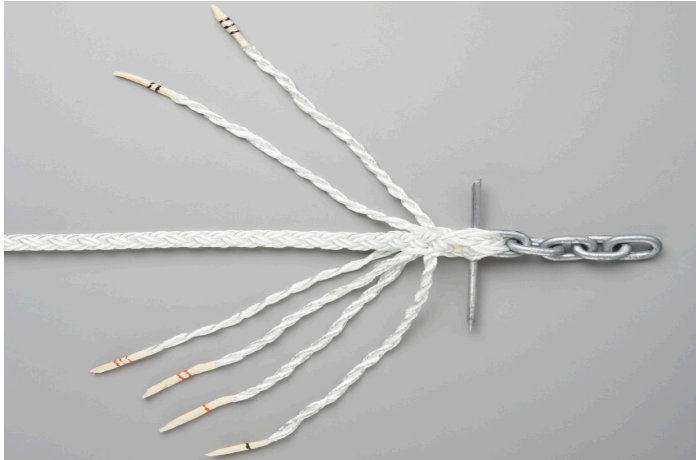


FIGURE 5

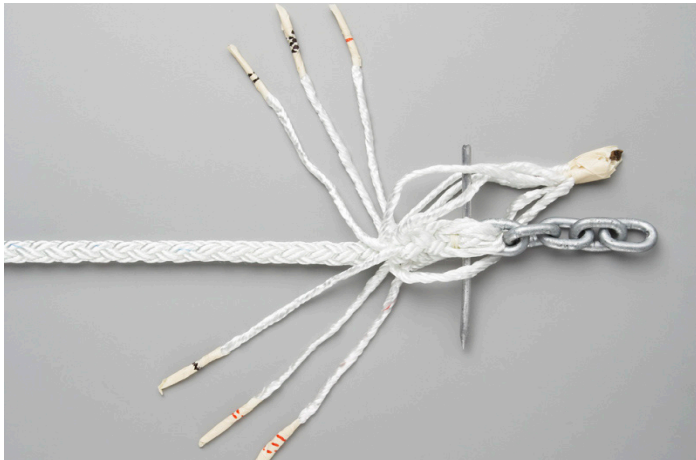
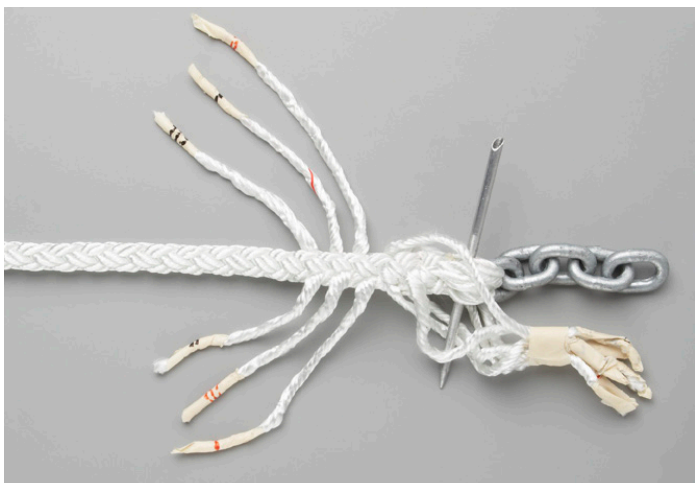


FIGURE 6



Strand pairs #4 and #6 are to be tucked under strand pairs that turn in the same direction as the one used for the #2 strand pair. Strand pair #5 is to be tucked under a strand pair that turns in the same direction as the ones used for #1 and #3 strand pairs. Pull all strand pairs snug. (Fig. 4)

Step #5 - The method for the next series of strand tucks is to go over a strand pair then under a strand pair. In this splice, when you go over a strand pair you need to follow the braid of the rope (as shown). Essentially you are doubling up the braid from two strands to four. Perform a total of 2 tucks with all of the strands.

Step# 6 - Perform Taper.

1. After the second full set of tucks, split the six strand pairs by half.

Note: To avoid confusion as to which strands are to be tucked, you may want to tape the ends that are no longer in use to the end of the chain opposite the direction of the splice. (Fig. 5)

2. Tuck all six (6) of the split strand pairs an additional tuck, following the method described in step 5.
3. Next, tuck only four (4) of the strands one more time (2 "S" and 2 "Z")

4. Finally, tuck two (2) strands one last time (1 "S" Twist and 1 "Z" Twist) (Fig. 6)
5. Remove the rod that was used as a spacer

Note: The direction of twist in a yarn or strand is called "S" or "Z" twist.

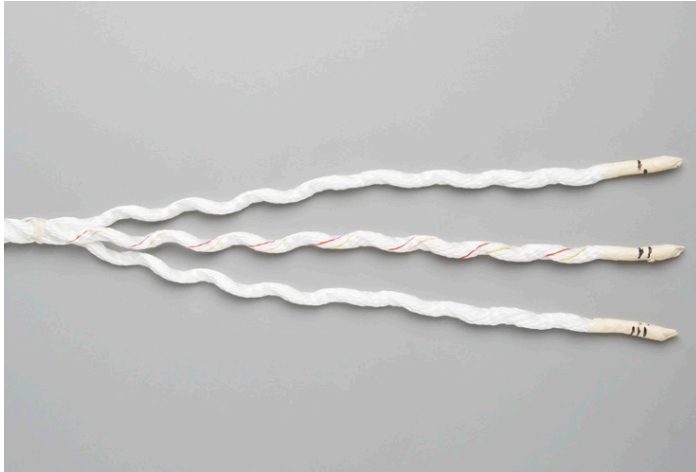
Step #7 - Finish the splice by using a hot knife and trimming strands to a length equal to the ropes diameter.

Note: The stubs will be drawn into the rope once it is loaded up and as such can be trimmed shorter after it has been loaded.



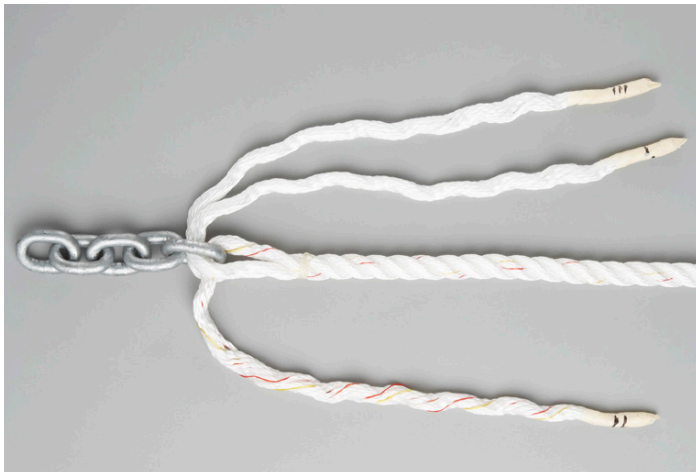
3-STRAND ROPE TO CHAIN SPLICE

FIGURE 1



Step #1 - Measure from the end of the rope 18 crowns or twists and place a wrap of twine around the rope at that point and tie tightly with a double overhand knot. Unlay the rope back to the twine. Tape the end of each strand and label I, II, III. (Fig. 1)

FIGURE 2



Step #2 - Line up the rope to the last link of the chain so that the II strand is in the middle and the I and III are on either end. Take the II strand and pass it through one side of the chain link. Strands I and III are to pass through the chain link from the opposite side, staying on the outside of strand II. (Fig. 2)

FIGURE 3



Step #3 - Prior to beginning tucks, insert a small rod (3/16" diameter or equivalent) between the throat of the splice and the chain link to act as a temporary spacer. (Fig. 3)



3-STRAND ROPE TO CHAIN SPLICE

FIGURE 4

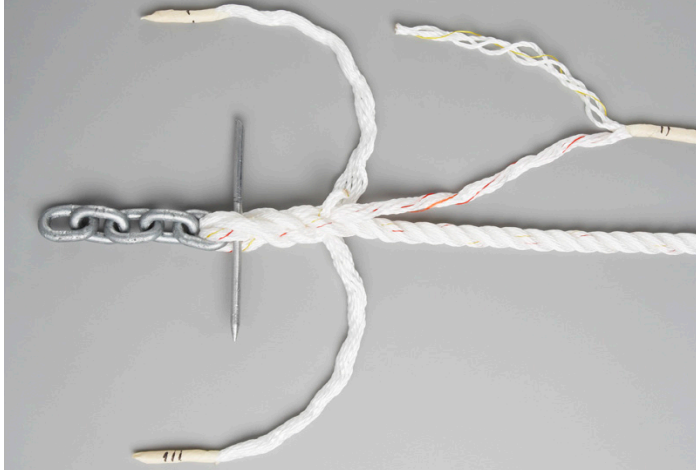


FIGURE 5

Step #4 - Perform 2 tucks with all three strands, after the 2nd tuck, thin the three strands by $\frac{1}{3}$ the number of yarns. (Fig. 4)

Step #5 - Trim excess yarns off strands, using a hot knife, and leave a stub slightly longer than the diameter of a strand. Tuck all the strands 2 more times and thin by $\frac{1}{3}$ again, using same procedure as before. (Fig. 5) Perform 2 final tucks with all three strands, then trim excess off strands leaving a stub approximately a strand diameter in length. Remove spacer.

Notes:

1. The stub will be drawn into the rope once it is loaded up. It can be trimmed further after it has been loaded.
2. This method of joining is designed to minimize chafe between rope and chain, but as a matter of prudent seamanship, it should be checked regularly and remade if there is any evidence of wear.



3-STRAND EYE SPLICE (BOTH STANDARD & TAPERED)

FIGURE 1



FIGURE 2

Step #1 – To begin this splice, measure 14 crowns (or twists) from the end of the line [18 crowns for a tapered splice]. Mark this location with a temporary wrap of tape around the rope. Un-lay the rope up to the tape. Heat seal or tape the end of each individual working strands. (note: be careful that the strands do not untwist). (Fig 1)



Step #2 - To form the eye, bend the rope to form the desired eye size and mark with a temporary wrap of tape. This is done with the standing part of the rope in front of you, bending the tail of the rope from left to right. (note: bend following the natural bend of the rope so as not to put any twist into the eye or the splice). (Fig 2)

FIGURE 3



Step #3 - To perform the first set of tucks, lay the strands out such that you have a left, middle, and right working strand. Then place the left and middle working strands across the rope just below the taped mark. (Fig 3) Tuck the middle strand under a strand on the standing part of the rope just beyond the taped mark.

Notes:

1. if this is your first time splicing mark the ends of the working strands with an L –left, M –middle, and R –right.)
2. if this is your first time splicing, mark the strand you tucked under as this will be your reference point.



3-STRAND EYE SPLICE (BOTH STANDARD & TAPERED)

FIGURE 4



Take the left strand and tuck it under the strand just to the left of the one you raised on the previous step. (note: the left strand should look like it is going over the strand you raised in the previous step) (Fig 4).

FIGURE 5



Take the right strand and tuck it under the strand just to the right of the one you raised for tucking the middle strand. Note: It is easier to do this if you first turn the rope over, as shown in photo) (Fig 5). Pull all three working strands snug (note: the two temporary tape marks should be aligning and forming your eye.) This completes the first set of tucks.

Step #4 - Perform four more sets of tucks for each of the three working strands. In each tuck the working strand should go over a strand then tucked under a strand. (Fig 6a) Note: after each set of tucks, pull all three working strands snug)

FIGURE 6



6a



6b

Step #5 - Skip the step #5 if performing a standard splice. To perform a tapered splice make two additional tucks with one strand and one additional tuck with a second strand, leaving the third strand as is. (Fig 6b)

Step #6 - In order to finish the splice, cut and melt the ends of the working strands, leaving a stub approximately as long as the diameter of the working strand.

Note: the stub will be drawn into the rope once it is loaded up. It can be trimmed further after it has been loaded up.



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