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Thread: Why does one taper while splicing?

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04-16-2018, 15:57

#1

greenbigfrog

New Member

Join Date: Apr 2018

Location: NRW, Germany

Posts: 5



Why does one taper while splicing?

Hi!

I've been trying to find a proper answer to this question for hours now. A lot of people mention in their tutorials on splicing one should taper the ends that are buried for not only aesthetic reasons, but also reducing the breaking strength by only 10% instead of often a lot more when not tapering.

What's the reason though, that tapering affects the change of breaking strength?

Please excuse the wrong usage of terms here...

Maybe someone here is able to help me get this sorted out in my mind. Thanks in advance!

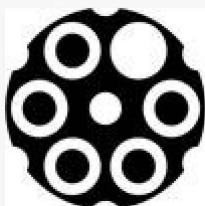
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04-16-2018, 16:06

#2

kitsapcowboy

Senior Member



Join Date: Jun 2016

It reduces the bulk of the bight carried by the splicing tool through the hollow core and makes for a less abrupt transition at the end of a buried section.

Location:	Kitsap County, WA
Hammock:	Dutch/SLD/WB/DIY
Tarp:	DWG/HG/SLD/UGQ/DIY
Insulation:	Loco Libre Gear
Suspension:	Dutchware
Posts:	3,763

Smart graphic design for all your needs by [BGD](#)

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04-16-2018, 16:28

#3

greenbigfrog 

New Member

Join Date:	Apr 2018
Location:	NRW, Germany
Posts:	5

Why does the the less abrupt transition matter though?

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04-16-2018, 16:56

#4

pgibson 

Senior Member



Join Date:	Apr 2009
Location:	SW Idaho
Hammock:	AHE 1.1 dbl
Tarp:	AHE Shangi La
Insulation:	KAQ Prototype
Suspension:	AHE Whoopie Slings
Posts:	6,955

 Originally Posted by **greenbigfrog** 

Why does the the less abrupt transition matter though?

In testing lines that are not tapered consistently at that point fail at the end of the buried line. The more gentle transition puts less strain on the line. And the failure point becomes more random. In other words, not tapering creates a weak point at the point in the rope where the taper should be.

It's also a good deal more work to bury a line that is not tapered. It takes about 5 seconds to do and will save exponentially more than that in feeding the bury.

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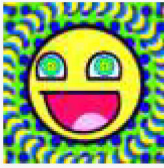
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04-16-2018, 17:01

#5

HandyRandy

Senior Member



Join Date: Aug 2017

Location: Land of the Free! ☐☐☐

Hammock: Dutchware Quilted Chameleon**Tarp:** DW Bonded Wide Hex**Insulation:** Down**Suspension:** Buckles

Posts: 1,430

They say that any knots or bends or compression of cordage will weaken it. So it seems to make sense that even something like taper vs no taper will have an impact. But I'll bet the difference is tiny. And since you need to taper to bury anyway, why spend extra time to cut off a taper if it only serves to slightly weaken the cord?

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04-16-2018, 17:11

#6

Eidson

Senior Member



Join Date: Jan 2012

Location: Columbia, MO

Hammock: DH TB #1832; DW Chameleon; DIYs**Tarp:** DIY**Insulation:** LL20°GP/LH,SLD,DIY**Suspension:** Amsteel/web/bling

Posts: 954

Images: 32Originally Posted by **greenbigfrog**

Why does the the less abrupt transition matter though?

I spent time researching this as well and although didn't save any of the information on the subject, I had information overload on the subject. A lot of the most useful information I came across was on boating forums, as the marine industry heavily uses dyneema/amsteel lines as well.

Ultimately I found many different claims at the actual value of line deterioration, anywhere from 2% to some claiming 60% (though I tend to think that it is on the much lower end of this). In testing lines, I guess the assumption is made that if the line is worked with in any manner (spliced, tied, buried, etc..) there is always going to be a "weaker" point/s. Having an "abrupt" transition is simply a change in the default characteristics of the line, an abnormality perhaps. Ultimately it creates a stress point.

However, at the end of the day, I don't ever worry about this. As a hammocker, even if I was setting up at a horrible angle and putting a lot of additional stress on my lines, the ratio of acting weight to line strength (or safety margin) is still well above what I could ever place on the lines.

Ex. 1044
Crüzr v. Tethrd

Why does one taper while splicing?

usually taper because it makes for easier splicing, but in working with larger line sizes, like 2.2mm and up, I usually don't even bother.

Here were a few quick links I came across in searching, but I know there is a lot more information out there. There was one site in particular which contained a huge abundance of test data with Samson line, but I couldn't locate it.

<http://forums.sailinganarchy.com/ind...load-testing/&>

<https://www.hammockforums.net/forum/...Locked-Brummel>

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04-16-2018, 18:28

#7

greenbigfrog ◊

New Member

Join Date: Apr 2018

Location: NRW, Germany

Posts: 5

Thanks for all the answers!

I wasn't rly worrying about anything, just interested 😊 You never will learn enough.

A Locked Brummel is LESS strong than a regular buried splice

The article you linked made me check Samson's instructions and got me to think...

Should I be lock stitching my load bearing splices and be using regular buried splices where possible? (So mainly amsteel CL's, not on Whoopiesling though since the loops aren't the weakest point.)

But for my none load bearing lines (guy-lines, etc out of ironwire/zing-it) I can just use locked brummels??

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04-16-2018, 19:00

#8

Bubba ◊

Senior Member



Join Date: May 2010

I've used all manner of splices from proper buries to not so proper ones and I've not had anywhere near a failure. I'm ok using splices that are not made according to specs so that's something you discover over time. I personally would not worry about weather the splice was a locked Brummell or straight bury that is stitched.

Ex. 1044
Crüzr v. Tethrd

Why does one taper while splicing?

Location: SW Ontario, Canada

Hammock: WBBB 1.7 SL

Tarp: WB Superfly

Insulation: WB and UGQ

Suspension: Whoopies or Straps

Posts: 7,205

Images: 248

They both work fine and there are plenty who use either one.

Don't let life get in the way of living.

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04-17-2018, 01:55

#9

GadgetUK437 

Senior Member



Join Date: Jul 2015

Location: Devon, UK

Posts: 1,961

Images: 54

Any abrupt change in direction of a line is a stress raising point.
That is why knots with tight kinks are weaker than ones with larger bend diameters (overhand knot vs figure of 9),
and lines going over an edge should be padded, and why a line going over a pulley is stronger than one going over a karabiner.

The abrupt change in diameter in an untapered splice is the same thing, a stress raiser. But with the high safety factor of using 7/64" Amsteel for suspension, you'll prolly be fine.

--

Gadget.

UK Hammock Forum, [Hammock-UK](#)

Or watch the things you gave your life to, broken, And stoop and build 'em up with worn-out tools

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04-17-2018, 02:55

#10

jadekayak 

Senior Member



Join Date: Apr 2016

Location: new zealand

Hammock: DIY gathered end

 Originally Posted by **greenbigfrog** 

Hi!

I've been trying to find a proper answer to this question for hours now. A lot of people mention in their tutorials on splicing one should taper the ends that are buried for not only aesthetic reasons, but also reducing the breaking strength by only 10% instead of often a lot more when not tapering.

What's the reason though, that tapering affects the change of breaking strength?

Ex. 1044
Crüzr v. Tethrd

Why does one taper while splicing?

Tarp: OzTrail???

Insulation: Tentsile sky pad

Suspension: DIY single line

Posts: 434

Please excuse the wrong usage of terms here...

Maybe someone here is able to help me get this sorted out in my mind. Thanks in advance!

Go to sampson ropes site and they explain this perfectly.

Basically ,an abrupt termination on the bury profuces a lump that causes excessive strain on the li e and promotes failure at this point.

The longer the taper the less strain on the line and less chance if failure.

A side effect of this is that it is also easier to pull the bury through the line

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Ex. 1044
Crüzr v. Tethrd

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