ZITHA TECH SPECIALTY CABLES (Pty) Ltd

Tying bridge frame poles



Overview

Plan on using some unistrut at the mid point (12'') of both spans to "tie" all three poles together.

Key Takeaways

Bridge frame poles can be securely tied using square, diagonal, or shear lashings for temporary structures, or structural tie bars for permanent steel connections.Rope Lashing Techniques

1. Square Lashing Used to bind two poles at right angles, ideal for creating the main framework of a bridge or support structures. Steps include:

• Tie a Clove Hitch around one pole.

• Wrap the rope over and under both poles 3–4 times.

• Add frapping turns around the poles to tighten the lashing.

• Finish with two Half Hitches to secure the rope . This method prevents poles from sliding and is suitable for load-bearing applications like rafts, bridges, or tripods . 2. Diagonal Lashing Best for poles crossing at angles other than 90°, such as 45° braces. Steps include:

• Start with a Timber Hitch around both poles to close any gaps.

• Wrap the rope along one axis, then the other, 3–4 turns each.

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• Tighten with frapping turns and finish with a Clove Hitch . This lashing prevents rotation and twisting, making it ideal for diagonal supports in bridge frames. 3. Shear Lashing Used to bind parallel poles at their tops, often for A-frame supports or sawhorse legs. Steps include:

• Begin with a Clove Hitch on one pole.

• Wrap the rope around both poles and secure with another Clove Hitch.

• Spread the untied ends to form the A-frame . Shear lashings are stable and can support weight effectively.
Structural Tie Bars for Permanent Bridges

For steel or heavy-duty bridges, engineered solutions like tie bars are used instead of rope lashings. These include:

• Cast forks, forged eyes, threaded ends, or round steel tie rods.

• Designed to resist wind-induced vibrations and fatigue over millions of load cycles.

• Can be connected via horizontal welds or cold-rolled threads for enhanced durability . Structural tie bars are recommended for permanent bridges or high-load applications where rope lashings are insufficient.
Summary
• Temporary wooden or bamboo bridges: Use square, diagonal, or shear lashings depending on pole orientation and load requirements.

• Permanent or steel bridges: Use engineered tie bars with appropriate end connections for safety and longevity.

• Always ensure tight wraps, proper knots, and frapping turns to prevent slippage and maintain structural integrity. By selecting the correct lashing or tie method, bridge frame poles can be securely connected for both temporary and permanent structures .

Article Content

3 Lashing Methods You Can Use To Tie Wood Together

A shear lashing is your best option as it is stable enough to

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The Shear Lashing ties two poles together to form A-frame legs, ideal for lifting, supporting weight, or reinforcing weak

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This lashing can be used in load bearing situations and thus can be used to build anything from chairs, an emergency stretcher, a

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A lashing is a ropework technique used to bind two or more poles or structural elements together with rope or cord, creating rigid

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When you want to tie a rope to a pole, the best way to do so is by using a type of hitch knot. For a quick temporary knot,

Learn how to construct a rope bridge

The skills, along with the lashing ropes and poles required to build a rope bridge using double A-frames for better stability, can be

How to tie two poles or branches together. High tension lashing.

An easy way to tie two thing together with high tension. Pick up a paracord pull at my

#SECRET #knot to hang a picture frame

This #knot holds tight when hanging anything onto a wall.

Lashing Manual

Being competent in tying square and clove hitch knots is the first step. As an introduction to lashing, miniature scaled

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Monkey Bridge

Monkey Bridge Equipment 4 x spars 3.6m long 2 x spars 2m long 8 – 10 light spars for ladder rungs lashing lengths Additional light

Simple Pioneering

Simple Pioneering - Build a Monkey Bridge From Wood Poles: In my last pioneering project we built a simple swing In this

Lashing INFORMATION

Strop Lashing The Boy-Sized projects provided and designed by Adolph Peschke and featured in the older

Absolutely the BEST and Easiest Pole and Bamboo Lashing Knot!!

In this quick tutorial I demonstrate how to tie the BEST and Easiest Pole and Bamboo

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how to tie a bamboo sticks

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Pole lashing

In this video I show you a simple yet effective way of binding sticks and poles together in

engine

Firstly, it is necessary to know how to tie the required knots and lashings, secondly, you must have spars or poles from which to build

Learn Lashing and Make Your Own Garden Trellises

A genuine lashing is more efficient and usually stronger than making it up as you go along. Learn about lashing a garden trellis, here.

Square Lashing – SCOUT PIONEERING

Using a double A-frame to build a monkey bridge is a departure from the usual X-frame that supports the foot rope and hand ropes.

How To Tie Square Lashing for Bushcraft and Survival

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Master the square lashing for your next bushcraft project. Learn how to join poles at 90 degrees with our step-by-step guide to

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Shear Lashing How to tie Shear Lashing (or Sheer Lashing). Shear Lashing is a knot used to bind two poles together. It is also useful

How to Tie Knots to Build a Rope Bridge

Building a rope bridge, with or without wood cross pieces, requires just a few basic knots. However, these knots

FM 3-97.61 Chapter 7

Tie a clove hitch at the center of a sling rope. Place it over one of the poles above the apex and move down to the apex so that the

IS A TRUSS STRONGER THAN A BEAM??

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Bamboo Joints and Joinery Techniques

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How to join bamboo and what are the best bamboo joints? Well first of, it is important to know a few basics

Quick Skills #4: How to Tie Lashings

The Square Lashing is used to tie two poles that cross each other at an angle of 90° - 45° together. It is still used widely in

How to Tie Lashings

Wrapping brings the poles together, while frapping generally tightens the lashing and helps prevent the poles from

Setting up the tarp: knots, guylines, and poles, oh my

Using Kelty Triptease guylines measured to my wingspan (two, one, or half), MSR Groundhog and Vargo titanium

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