[0006] What is needed, therefore, are techniques for manufacturing synthetic slings of lower cost and higher performance.

SUMMARY OF THE INVENTION

[0007] ~~One embodiment~~ An aspect of the present invention provides a system for applying a tensile load, the system comprising: a length of a single continuous synthetic rope having first and second bitter ends; the continuous synthetic rope being ~~woven~~ braided with itself to create a sling; wherein when a force is applied to said sling said force is distributed over said sling such that no substantial said force is applied to said first and second bitter ends. Preferably, the first and second bitter ends of the rope being capable of moving relative to each other and the sling.

[0008] Another embodiment of the present invention provides such a system further comprising markings disposed on the first and the second bitter ends showing movement of the first and second bitter ends relative to each other.

[0009] A further embodiment of the present invention provides such a system further comprising measurement indicia disposed along the continuous synthetic rope showing elongation of the rope.

[0010] ~~One embodiment of the present invention~~There is also disclosed ~~provides~~ a system for applying a tensile load, the system comprising:

[0011] a plurality of wraps of a continuous synthetic rope having loops at opposing ends;

[0012] the plurality of wraps of the continuous synthetic rope having at least three parts and being woven such that the resulting woven sling has at least three picks.

[0013] Another embodiment of the present invention provides such a system wherein each wrap within the plurality of wraps is configured to move relative to other wraps within the plurality of wraps.

[0014] A further embodiment of the present invention provides such a system wherein individual wraps are configured to shift relative to each

other and to conform to a holder and seek an optimal load bearing configuration of the wraps when the sling is placed under load.

[0015] Still another embodiment of the present invention provides such a system wherein the wraps in the plurality move relative to each other to be substantially equally loaded when a load is applied to the sling.

[0016] A still further embodiment of the present invention provides such a system wherein the load approaches a design load of the sling.

[0017] Yet another embodiment of the present invention provides such a system wherein the wraps are configured to decrease movement relative to each other when a load approaching a design load of the sling is applied.

[0018] A yet further embodiment of the present invention provides such a system wherein the inside radius of each wrap forming a portion of the loops is independently assumed in load distribution balance with its neighboring wraps when the sling is placed under load.

[0019] Even another embodiment of the present invention provides such a system wherein the sling is torsionally neutral.

[0020] An even further embodiment of the present invention provides such a system wherein the sling is non-conductive when dry.

[0021] Still yet another embodiment of the present invention provides such a system wherein the sling has a mechanical resonance less than 0.1 that of a steel sling of comparable design load.

[0022] A still yet further embodiment of the present invention provides such a system wherein the wraps are substantially free of sharp edges.

[0023] ~~Even yet another embodiment of the present invention provides~~ Preferably, in such a system, ~~wherein~~ the rope comprises a primary strength member and a jacket disposed over the primary strength member.

[0024] An even yet further embodiment of the present invention provides such a system wherein the ratio of the bending strength of the sling divided by its column strength is less than 10% of a steel sling.

[0025] An even still further embodiment of the present invention provides such a system wherein the sling has a pushability such that the sling without external support will vertically support a length of itself not less than about 5 times the circumference of the sling.

[0026] Another yet further embodiment of the present invention provides such a system further providing visual indicia disposed on bitter ends of the rope, such that movement of the bitter ends relative to each other is observable and measurable.

[0027] ~~One embodiment of the present invention provides~~There is also disclosed a pushable woven synthetic sling retaining a high translation, the sling comprising: a synthetic rope disposed in a plurality of wraps; the plurality of wraps being woven in a weave having a weave angle α, the wraps shifting relative to each other such that a load on the sling is distributed evenly among the wraps but the wraps do not unweave, the shifting ability of the wraps being diminished in approximate proportion with the increase of the weave angle α and load applied to the sling.

[0028] The features and advantages described herein are not all-inclusive and, in particular, many additional features and advantages will be apparent to one of ordinary skill in the art in view of the drawings, specification, and claims. Moreover, it should be noted that the language used in the specification has been principally selected for readability and instructional purposes, and not to limit the scope of the inventive subject matter.

CLAIMS

What is claimed is:

1. A system for applying a tensile load, the system comprising:

a length of a single continuous synthetic rope having first and second bitter ends;

said continuous synthetic rope being braided ~~woven~~ with itself to create a sling;

wherein when a force is applied to said sling said force is distributed over said sling such that no substantial said force is applied to said first and second bitter ends.~~said first and second bitter ends of said rope being capable of moving relative to each other and said sling.~~

2. The system of claim 1 further comprising markings disposed on said first and said second bitter ends showing movement of said first and second bitter ends relative to each other.

3. The system of claim 1 further comprising markings disposed on said continuous synthetic rope showing movement of said first and second bitter ends relative to said sling.

4. The system of claim 1 further comprising measurement indicia disposed along said continuous synthetic rope showing elongation of said rope.

5. The system of claim 1, wherein~~A system for applying a tensile load, the system comprising~~:

said sling has a plurality of wraps ~~of a continuous synthetic rope~~ having loops at opposing ends; and

said plurality of wraps of said continuous synthetic rope having at least three parts and being ~~woven~~ braided such that the resulting braided ~~woven~~ sling has at least three picks.

6. The system of claim 5 wherein said braided ~~woven~~ sling is configured such that each wrap in said plurality of wraps moves relative to other wraps within said plurality of wraps.

~~16. The system of claim 5 wherein said rope comprises a primary strength member and a jacket disposed over said primary strength member.~~

~~17~~16. The system of claim 5 wherein the ratio of the bending strength of the sling divided by its column strength is less than 10% of a steel sling.

~~18~~17. The system of claim 5 wherein said sling has a pushability such that said sling will vertically support a length of itself not less than 5 times the circumference of said sling.

~~19~~18. The system of claim 5 further providing visual indicia disposed on bitter ends of said rope, such that movement of bitter ends of said continuous synthetic rope relative to each other is observable.

~~20~~19. The system of claim 5 further providing visual indicia disposed on said continuous synthetic rope, such that movement of bitter ends of said continuous synthetic rope relative to said ~~woven~~ braided sling is observable.