

Technical Bulletin



PHILLYSTRAN® NONMETALLIC TOWER GUYS FOR AMATEUR RADIO OPERATORS

THE EFFECTIVE ALTERNATIVE TO TROUBLESOME STEEL GUYS

- Completely isolates a tower-guy system from the antenna field.
- Improves signal coverage by eliminating distortion caused by re-radiated signals.
- Provides quick, easy, maintenance-free tower installations.
- Assures a neater tower appearance with no more corroded steel guys, no troublesome ceramic insulators and no more worries about hidden damage caused by white noise arcing.

With electrically transparent Phillystran...

You don't have to compute guy lengths that cause resonance! You don't have to install insulators! You don't have to worry about the stretching or aging problems of conventional synthetic ropes! And you will never again be bothered by zapping, snapping and crackling across porcelain insulators!

Phillystran HPTG-I assures...

Effective installations, designed to improve signal coverage because the non-metallic

guys cannot absorb or re-radiate your radio signals.

Maintenance-free installations, because Phillystran HPTG-I provides tension-once and walkaway guying systems that aren't subject to extreme corrosion or to the hidden damage caused by white-noise arcing across insulators.

Phillystran is performance proven...

These insulator-free guys are protecting towers for knowledgeable amateur radio operators. Since its introduction in 1973, Phillystran has been installed on more than a thousand commercial broadcast towers.

Phillystran tower guys are protected by an extruded jacket which provides excellent resistance to weather and abrasion. To prevent damage by brush fires or vandals, short lengths of steel cable should be used in the lower portion of each guy assembly.

APPLICATION	PHILLYSTRAN PART NUMBER	EHS** EQUIVALENT DIAMETER IN	APPROX. WEIGHT LBS/100 FT
Boom support	HPTG 1200I	3/32	1.1
Tower guy	HPTG 2100I	1/8	1.8
Tower guy	HPTG 4000I	3/16	3.3
Tower guy	HPTG 6700I	1/4	5.0
Tower guy	HPTG 11200I	5/16	7.0

* Suffix indicates break strength in pounds. Recommended final tension is 10% of the break strength.

** Extra High Strength Steel

PHILLYSTRAN® PLP-BIG GRIP DEAD-ENDS

Phillystran has answered the call for field installable nonmetallic tower guy systems with HPTG-I and PLP Big Grip dead-ends for Phillystran. Phillystran Big Grip Dead-Ends' unique features include:

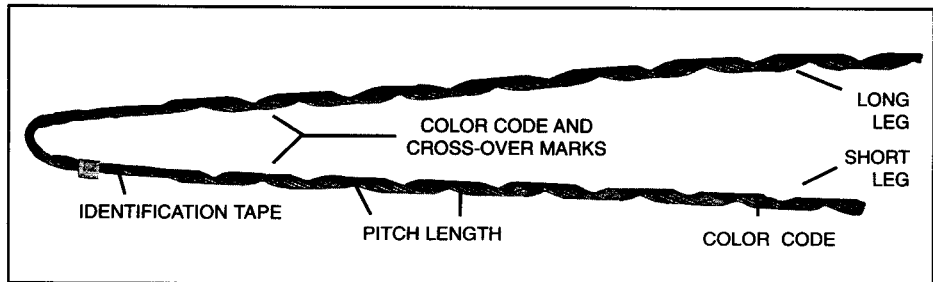
- Grip designed to match rope twist direction (RHL).
- Special sized wires for ease of application.
- Galvanized steel and "C" coat construction.
- Color coded for ease of identification.
- Longer length to match Phillystran's high performance.
- Designed to develop the rated strength of the Phillystran products.

Cross-over Marks: Indicate starting point for application.

Color Code and Length: Assist in identification of strand size, corresponding to tabular information appearing on catalog pages.

Identification Tape: Shows catalog number, nominal sizes.

Short Leg-Long Leg: Identifies rods belonging to each leg, after application. During application, the short leg should be applied first.



*PHILLYSTRAN BIG GRIP P/N	PHILLYSTRAN STRAND P/N	PHILLYSTRAN BIG GRIP LENGTH (IN)	PHILLYSTRAN BIG GRIP WEIGHT EA.	PHILLYSTRAN BIG GRIP COLOR CODE	RECOMMENDED HEAVY DUTY THIMBLE SIZE (IN)
PLP-2738	HPTG 2100I	31	.53#	Blue	3/8
PLP-2739	HPTG 4000I	37.5	.87#	Yellow	7/16
PLP-2755	HPTG 6700I	45.5	1.26#	Red	1/2
PLP-2558	HPTG 11200I	51.0	1.65#	Black	9/16

* Includes end cap and black tie wrap.

INSTALLATION PROCEDURE

1. Pretension the guy for easier Big Grip installation.
2. Insert heavy duty thimble into eye of Big Grip following "Installation Guidelines". Install Big Grip with thimble through attaching hardware. Begin the application of the grip at the cross-over marks (figure 1).
3. Wrap on the first leg (either leg) with two complete wraps. Align the cross-over marks, then wrap the second leg with two complete wraps, ending opposite the first leg.

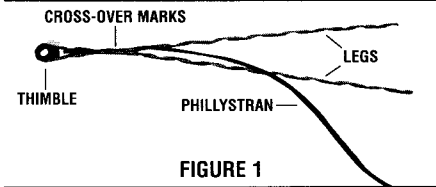


FIGURE 1

4. Complete the application by wrapping both legs simultaneously (keeping legs opposite each other) or alternating legs half a wrap at a time (figure 2).

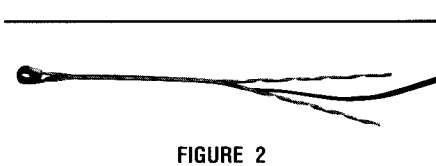


FIGURE 2

NOTE: DO NOT completely wrap one leg at a time as is common with steel guy strand. (The second leg will not install properly due to HPTG-I rope distortion).

5. It may be necessary to split a leg to complete application of the grip. Be sure that all rod ends are snapped into place. A space or gap will be present between wraps (figure 3).

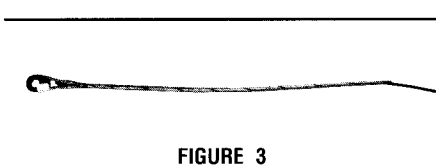
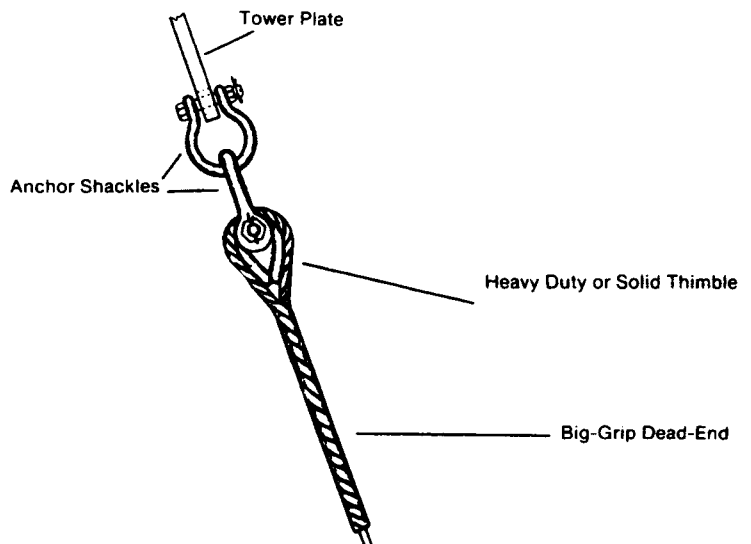
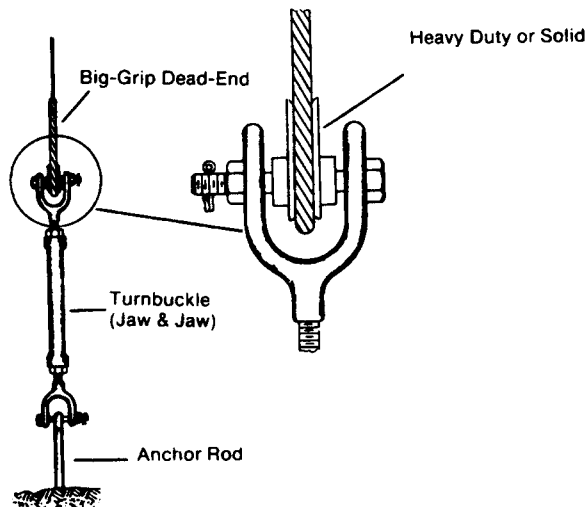
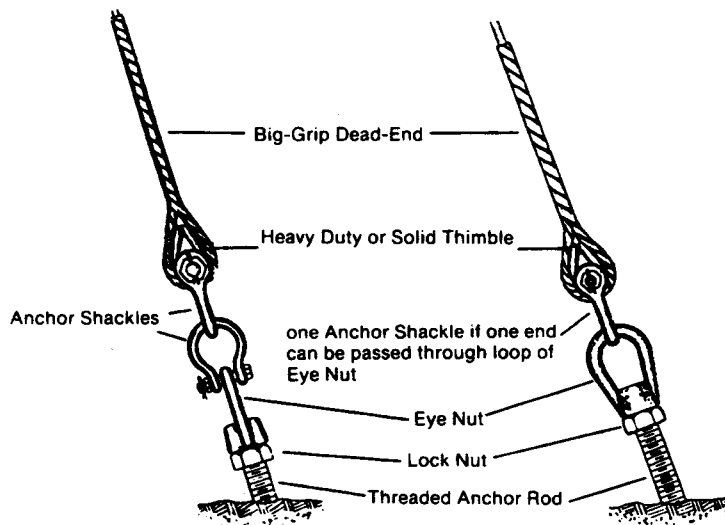


FIGURE 3

- 6) Trim back rope end to as short a length as is convenient and install end cap by applying silicone caulk or similar compound inside cap and pushing cap completely onto end of rope.
- 7) Secure black tie wrap around grip at rod ends to secure ends. Tie wrap should be positioned to within one (1) inch of rod ends of short leg.

ARTICULATED HARDWARE RECOMMENDED FOR USE WITH BIG GRIP DEAD-ENDS



PHILLYSTRAN®

PLP-BIG GRIP DEAD-ENDS

CAUTION: Break Strength: The breaking strength of a rope is the load at which a new rope will break when tested under laboratory conditions. Break strength should not be mistaken for safe working load. **Safe Working Load:** Because of the wide range of rope use, rope condition and the degree of risk of life or property, it is not possible to make a blanket recommendation for safe working load. It is ultimately dependent on the rope user to determine what percentage of break strength is their own safe working load. **Wear:** Ropes wear out with use; the more severe the usage, the greater the wear. It is often not possible to detect wear on a rope by visible signs alone. Therefore, it is recommended that the rope user determine a retirement criteria for ropes in their application. For assistance in developing safe working load and retirement criteria for each application please call or write Phillystran Inc.

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INSTALLATION GUIDELINES

1. **Strand Compatibility:** Big Grip dead-ends should be used only on the size for which they are designed. They must have the same lay direction as the Phillystran to which they are applied. When ordering Big Grip dead-ends, make sure to specify the size on which it is to be used.
2. Big Grip dead-ends are precision devices that should be handled carefully. To prevent distortion and damage they should be stored in cartons until used and should be installed under the guidelines in this section.
3. During installation and at all times, care should be taken to avoid gouging or damaging the corrosion preventive material of the Big Grip dead-ends or the jacketing on the Phillystran.
4. Big Grip dead-ends must not be used as tools, that is, come-alongs, pulling-in grips, etc.
5. Big Grip dead-ends may be removed and reapplied two times, if necessary, for the purpose of retensioning guys (without adjustable hardware).
6. If removal is necessary after a Big Grip dead-end has been installed for a period greater than three months, it must be replaced with a new Big Grip dead-end.
7. Big Grip dead-ends should not be applied with tools. They should be applied by hand. However, a screwdriver may be used as an aid in splitting the legs as shown in Figure 3.
8. Big Grip dead-ends should not be used on hardware which allows the strand to rotate or spin about its axis uncontrolled. Adjustable hardware, such as a turnbuckle, may be used as long as rotational movement of the strand is restricted.
9. Hardware used in conjunction with Big Grip dead-ends should have smooth contours, ample groove clearances, acceptable diameters and sufficient strength to minimize abrasion and fatigue of the loop area.
 - A. Only heavy-duty type wire rope thimbles or solid (Hawser) type thimbles are recommended for use with Big Grip dead-ends.
 - B. In order to prevent collapse of the thimble, either a solid (Hawser) type thimble, or a large pin inside the thimble will be necessary.
10. Severe dead-end abrasion can result when high velocity winds load one side of a guyed structure causing the guy on the leeward side to slack off to a low tension. These winds cause a lightly loaded dead-end to cyclically load and unload against the connecting hardware and can ultimately result in damaging abrasion. In order to keep the guys from going slack during high wind loading, we recommend that guy tensions be maintained at 10% of the guys published rated breaking strength. The articulated hardware illustrated will reduce the abrasion on the dead-end hardware interface when the guy is subjected to cyclic loading conditions.
11. When in doubt about installations, hardware, or applications, contact Phillystran, Inc.



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