

Fiber Glass Systems, L.P
P.O. Box 37389
2425 S.W. 36th
San Antonio, Texas 78237 USA
210-434-5043
Fax: 210-434-7543
www.starfiberglass.com



August 26, 2004

To: All FGS Employees, Distributors, and End Users

Re: Lubricant For All API Threaded Connections

Fiber Glass Systems, L.P. has formulated a new special Teflon based lubricant which enhances the reliability and sealability of API 8RD connections. The use of this new product, *STARtec*TM, is similar to TF-15 Jet Lube. However you should find the required force to make up our connections will be less and the incidents for thread leaks will reduce. All make up procedures will remain the same. *STARtec*TM is available exclusively through Fiber Glass Systems. Since this new lubricant reduces risks in the field we want all distributors to gradually phase out and eliminate the use of TF-15 Jet Lube. *STARtec*TM is now our standard lubricant on all API threaded products produced in San Antonio, TX, Big Spring, TX, and Wichita, KS.

Hi-Pro PlusTM will remain an alternative for high-pressure applications on sites with minimum installation expertise. Hi-Pro PlusTM is useful for eliminating thread leaks for all 3000 PSI, 4" 2500, 6" 1500 to 2000 PSI and 8" 1000 to 2000 PSI products. The job site temperature for Hi-Pro PlusTM must be specified when ordering. Hi-Pro PlusTM works best at temperatures above 50° F (10.00° C). The use of heat blankets is required below this temperature.

We believe this change will improve our product reliability for our customers. The *STARtec*TM product will be available at the same price as TF-15 Jet Lube through the San Antonio, TX customer service office. All three factories will be stocking *STARtec*TM. We will continue to warranty installations installed with TF-15 Jet Lube for the next six months. There after we will require the use of *STARtec*TM or Hi-Pr PlusTM to maintain the product warranty.

Attached are pages 13 & 14 that have been revised in our Installation and Application Practices manual for Threaded Line Pipe.

Table 2.4.2a

Thread Size	1.90"	2 3/8"	2 7/8"	3½"	4"	4½"	5½"	6 5/8"	7"	8 5/8"	9 5/8"
Make Up Length Loss	2.06	2.56	2.88	3.13	3.88	3.50	4.38	3.88	4.50	4.50	4.75
Male Upset	Metal Friction Wrench (MFW)										
IJ Female	No. 5			No. 11			MFW	No. 20		No. 30	
STARtec™ - Jts./Gal.	100	100	100	68	50	50	34	34	34	26	26
Hi Pro Plus™ - Jts./Kit	33	25	20	16	12	12	10	8	8	4	3
Installation Feet/Day	5000 to 7000 ft.	5000 to 7000 ft.	5000 to 6000 ft.	3000 to 4000 ft.	3000 to 4000 ft.	2000 to 3000 ft.	2000 to 3000 ft.	1000 to 2000 ft.	1000 to 2000 ft.	1000 to 2000 ft.	1000 to 2000 ft.
Crew Size ⁽¹⁾	4 to 5	4 to 5	4 to 5	5 to 6	5 to 6	5 to 6	6	6	6	6	6
Thread Standoff	FGS industry standard API EUE 10rd, EUE 8rd and OD 8rd threads are designed to advance to the "power tight" position with "2" thread standoff. Due to manufacturing thread tolerances, it is not uncommon to see "1 to 3" thread standoff, with "2" threads standoff being the average.										
Notes:											
(1) - INCLUDES CONTRACTOR SUPERVISOR FOR FURTHER ASSISTANCE WITH TABLE 2.4.2a, CONTACT A FGS SERVICE REPRESENTATIVE.											

2.4.3 - Cleaning and Inspection

- Thread protectors must be left in place until ready for joining pipe.
- CW** · Frozen ice will make thread protectors impossible to remove, heat the ends of the pipe with a tiger propane torch until they release.
- CW** · If an open flame is not permitted, methyl alcohol can be used to melt the ice out of the connections or heat blanket (electric or chemical.)
- CW** · Clean threads with a wire brush (solvents can be used, but the threads must be dried thoroughly).
- CW** · Frozen ice or other debris must be removed from the threads prior to joining.

2.4.4 – Lubricant

FGS offers two different lubricants for use with API threaded connections. Our standard lubricant is a Teflon based lubricant called STARtec™. STARtec™ offers excellent lubrication for ease of make up along with optimum sealing characteristics.

FGS also offers a specialty two-part thread sealant called Hi Pro Plus™ which can be used on all FGS API threaded connections. When cured, Hi Pro Plus™ becomes a solid thread seal. The primary usage of Hi Pro Plus™ is for high pressure applications or when field installation expertise is limited. Installations where Hi Pro Plus™ should be considered are on all 3000 psi, 4" 2500 psi, 6" 1500-2000 psi and 8" 1000 to 2000 psi products. Hi Pro Plus™ works best on installations above 50° F (10.00° C). When ordering Hi Pro Plus™, specification of jobsite temperature is required. Curing of Hi Pro Plus™ at low temperatures can be accelerated by the use of electric heat blankets.

The use of STARtec™ lubricant or Hi Pro Plus™ thread sealant is required to maintain the warranty of FGS products.

2.4.4.1 – STARtec™ Lubricant

- Apply lubricant evenly with a typical dope brush to **both the male and female** thread (the entire root of the thread must be coated).
- The number of joints which can be installed per gallon of lubricant is available in Table 2.4.2a.
- CW** · The lubricant must be kept warm 65°F (18.3°C) in order to apply it evenly.
- CW** · Never use solvent to thin the lubricant, even in cold weather.
- CW** · Installation temperatures near or below freezing require heating of the lubricant or storage where it will stay warm between assembly of connections.
- CW** · Agitate or stir the lubricant frequently to keep it from balling up.

2.4 API 8rd Threaded Connections

(continued)

2.4.4.2 – Hi-Pro Plus™ Thread Sealant

- Using the mixing stick, scoop out **all** of the contents of one jar of hardener component B into one jar of base component A. Do not split the kit. The base is a light-colored paste; the hardener is a dark paste.
- Thoroughly mix the two components together until a uniform color is achieved and the particles in the bottom of the container are evenly dispersed.
- Use the brush provided to spread a thin, even coat of sealant on all exposed pin and box threads, removing any excess.
- CW** · If the sealant is difficult to spread, warm the joint enough for the sealant to spread easily. Do not overheat.
- CW** · The cure of Hi Pro Plus™ below temperatures of 50° F (10.00° C) requires electric heat blankets
- Hi Pro Plus™ must be cured prior to hydro testing.

2.4.5 - Joining Procedure

- Support pipe behind the female end to allow tool movement and leveling.
- Alignment is very important for full thread engagement (particularly for large diameter pipe).
- CW** · Weather near or below freezing requires heating of the male and female ends with a tiger propane torch. The ends shall feel warm by touch of your hand.
- **Avoid cross threading** by paying attention to alignment.
- Stab the joint **gently** until full engagement is felt.
- Rotate the pipe by hand.
- Rotation of the pipe can be assisted by using a strap wrench or a spinning tong.
- **Cross-threaded connections** must be backed out, cleaned and inspected for damage, then restart the procedure.
- **Final torque** is applied using a friction wrench on the male upset and a strap wrench on the female connection.
- **FGS API threaded connection** is designed to monitor make-up torque by position. **(Refer to Table 2.4.2a for thread standoff)**
- Some instances may require a handle extension on the wrench which will reduce the required force to reach full makeup.
- Power Tongs can be effectively used on sizes 6” (1500 to 2500 psi) and 8” (1000 to 2000 psi).
- Care must be given on heavy wall and large diameter pipe not to over-bend during the process of lowering into the ditch. (See FGS Product Data Specification, Maximum Deflection).
- Never allow the pipe to whip into the ditch on its own weight.
- Always use straps on the pipe, never chains for lifting.
- Construction of a side boom supported trolley or two wheeled platform has proven successful for heavy pipe support and leveling.
- Installation rates and required crew sizes are listed in Table 2.4.2a by pipe/thread size (improved rates can be achieved depending on crew and conditions).

2.5 Star Super Seal Connections

2.5.1 - Introduction

The **Star Super Seal** connection is a preparatory self restrained mechanical o-ring seal:

2” – 6” 4 threads per inch

8” – 12” 2 threads per inch

The connection provides fast, reliable installation, even in very severe weather conditions. The seal is achieved by compressing an o-ring between two parallel mating surfaces without the use of a taper. Several types of o-rings are available for various applications.