TenarisHydril Blue® Thermal Liner Connection

Scope

These guidelines apply specifically to the use of TenarisHydril Blue® Thermal Liner connections, all variants.

This document is part of the TenarisHydril Running Manual, and provides an overview of best practices for these specific products. It should be used in conjunction with the rest of the sections within the TenarisHydril Running Manual.

Tenaris Field Service Representatives can modify these guidelines when circumstances dictate. Implementation will only occur if the representative deems the modification to be non-detrimental to product integrity. All modifications need to be clearly explained and agreed with the client representative prior to implementation and fully documented in the running report.

References

- FTD29356 - Premium Connections Approved Thread Compounds.
- GDL23353 - Blue® Series and Legacy Series Make up Acceptance.
- GDL31457 - Recommended Guidelines for the Field Inspection of TenarisHydril Connections.
- GDL23349 - Pre-Running Preparation.
- GDL23356 - Dopeless® Connections.

Equipment, Material & Documents

1. Verify the recommended thread compound is available.

2. Refer to document FTD29356 for a list of compounds approved by Tenaris.

3. Identify the product to be run including the version of Dopeless® Technology if applicable and the connections of all accessories.

4. Latest version of the specific Product Data Sheet can be obtained from the Tenaris web site. In case this is unavailable, request the data sheet from the local Technical Sales representative.

Pre-Running

1. Never move or handle pipe without the correct thread protectors securely in place.

2. Ensure connections are cleaned and free of all debris and / or contaminants, cleaning methods employed should conform to the recommendations contained within GDL23349 - "Pre Running Preparation".

3. If Dopeless® pipes have storage compound, remove it with dry rags prior to run. Minor residual storage compound remaining is acceptable.

4. Verify all pipe and accessories have genuine TenarisHydril manufactured connections.

5. Visually inspect threads and torque shoulder prior to running, ensuring no damage is evident.

6. On Dopeless® connections check condition of both pin and box coating ensuring no peel off or degradation has occurred.

7. Verify the compatibility with accessories such as cement heads, safety valves, cross overs, etc.

8. Connections in doped and Dopeless® Technology variants are fully compatible for same OD/weight.

9. Connection weight interchange capability is indicated in the product data sheet available from the Tenaris website.

10. Verify material grade of all accessories ensuring compatibility with the main string.

Inspection

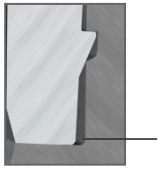
1. Inspection criteria for all TenarisHydril connections are outlined in GDL31457, Recommended Guidelines for Field Inspection of TenarisHydril Connections.

2. Ensure the pin and box torque shoulders have no dents, tears or raised material which would interfere with correct assembly.

Blue® Thermal Liner Configuration

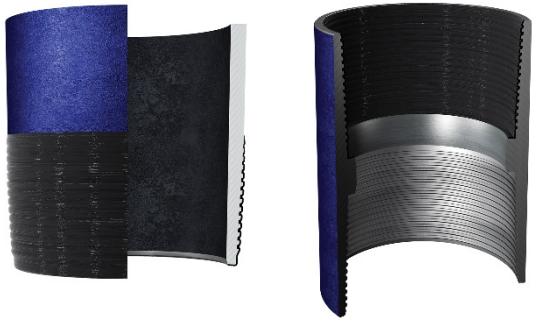
The diagram below is applicable to doped and Dopeless® variants.

5 TPI ≤ 5 ½"
4 TPI > 5 ½"
No Metal to Metal seal



For further information on Dopeless® connections refer to GDL23356, Dopeless® Connections.

Thread Compound Application, doped variant



1. Apply a thin coating of thread compound on the pin and box connections, fully covering all threads, pin nose and torque shoulders, the thread form should be fully visible.

2. Use approximately 50% of the quantity applied to the pin when doping the box.

3. Use Tenaris approved thread compounds and apply the friction factor indicated in FTD29356.

Thread Lock Application, doped variant

Connections should be clean and dry when applying thread lock.

1. Apply a thin coating of thread lock on 50% of the pin threads furthest from the pipe body.

2. Do not apply thread lock on the torque shoulder.

3. Apply thread compound to the box torque shoulder.

4. Apply the thread lock manufacturers indicated friction factor.

Thread Compound Application on Blue® Thermal Liner Dopeless® Connections

1. Dopeless® connections do not require the application of thread compound for make up.

2. If for whatever reason thread compound has to be applied to Blue® Thermal Liner Dopeless® connections, whether both pin and box are Dopeless® or when mixing a doped connection with Dopeless®, apply thread compound as indicated below.

- Apply a very thin layer of thread compound on all pin threads and pin nose.
- Do not dope box connection.

3. For the correct thread compound to apply, refer to FTD29356, Premium Connections Approved Thread Compounds.

Thread Locking on Blue® Thermal Liner Dopeless® Connections

1. Ideally when running a Dopeless® string the connections to be thread locked should be the doped variant with the connections cleaned of thread compound and completely dried, then thread lock and dope applied as per page 6.

2. When thread locking Dopeless® connections remove the Dopeless® coating from the threads on the pin connection where the thread lock is to be applied.

3. Use a hand or rotary brass wire wheel to remove the Dopeless® coating from the threads.

4. Leave the Dopeless® coating on the pin nose, torque shoulder and threads where no thread lock is to be applied.
5. Dopeless® boxes should be washed with hot water then dried prior to thread locking.

6. Thread lock should be applied to 50% of the pin threads immediately behind the pin nose, as per the diagram in page 6.

7. When assembling Dopeless® connections with thread lock, apply the doped variant torque values taken from the doped variant data sheet.

8. Apply the thread lock manufacturers indicated friction factor.

9. The application of thread compound is not required.

Torque Application

1. The use of computer make up analysis equipment is strongly recommended when assembling TenarisHydril Blue® Thermal Liner connections.

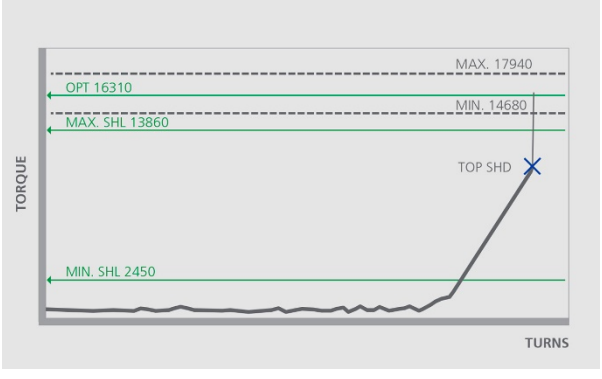
2. Shoulder points for Blue® Thermal Liner can be found in the product data sheet.

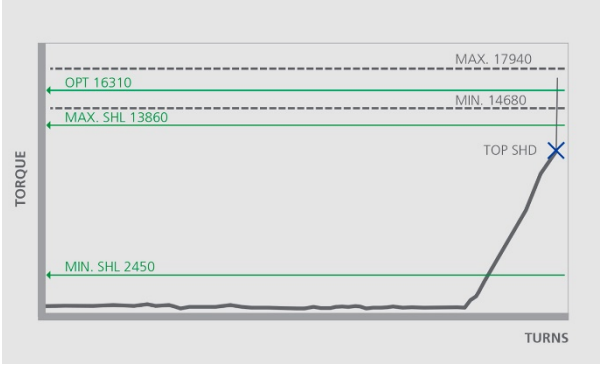
3. Reference torque should initially be set at 5% of optimum torque.

4. The dump valve should be set at optimum torque, verify correct operation on the pipe body prior to first make up.

5. Set the computer turns to 2 initially then adjust as necessary to attain good graph depiction.

6. The computer make up profile for Blue® Thermal Liner connection, doped and Dopeless®, should be similar to the ones below.





7. For sizes ≤ 5 1/2" the maximum acceptable delta turn indicated cannot exceed 0.12

8. For sizes > 5 1/2" the maximum acceptable delta turn indicated cannot exceed 0.1.

9. Refer to GDL23353 – “Blue® Series and Legacy Series Make up Acceptance” for further explanation.

10. Refer to GDL23356, Dopeless® Connections section for graphs specific to Dopeless® connections.

11. If different weight or grade of connections are to be mixed apply the lower weight or grade make up torque.

12. When assembling Dopeless® connections the torques applied should be taken from the appropriate Dopeless® variant product data sheet.

13. Torque values of mixed assemblies can be obtained from the tool available at https://dcp.tenaris.com/Mixed_Assemblies.

Running

1. The use of a stabbing guide is strongly recommended.

2. The use of a weight compensator is strongly recommended for chrome pipe and stands of 3 pipe ≥ 7".

3. To avoid cross threading stab pipe in a smooth controlled fashion ensuring the pipe is vertical when doing so, continue to support and stabilize the pipe throughout the stabbing and make up operation.

4. Upon commencement of initial rotation use low RPM (5 RPM or below) in order to ensure the pipe has not cross threaded during stabbing.

5. If cross threading is evident, immediately reverse rotate the pipe, completely disassemble, clean and inspect both connections.

6. Maximum spin in speed should not exceed 15 RPM.

7. Apply power tong at low rpm (do not exceed 5 rpm) for final make up.

8. Walk chrome pipe all the way into hand tight position, then apply tong only for final make up.

Pulling

1. Automatic stabbing system or stabber is recommended to maintain the pipe in a vertical position.

2. The use of a stabbing guide is recommended to assist in centralizing the pin to prevent hang up.

3. A weight compensator is strongly recommended for chrome pipe and stands of 3 pipe ≥ 7".

4. Apply the back up tong jaw on the lower part, over the mill end of the coupling.

5. Apply power tong in low RPM (3-5 RPM) to break the connection, ensuring the pipe is stabilized during the break and spin out process.

6. Do not exceed 15 RPM during spin out.

7. Walk chrome pipe all the way out by hand after initial break.

8. Visual inspection is recommended to classify the thread condition.

9. Any rejected connections should be clearly marked and segregated for further investigation.

10. Apply clean, dry thread protectors after applying storage compound on clean, dry connections.

11. Storage / thread compound should always be applied to connections post job, even rejects.

12. Do not apply storage compound to Dopeless® connections.

13. For long term storage of Dopeless® connections, refurbishment by qualified personnel is recommended.

14. Ensure clean, dry, Dopeless® protectors with seal rings correctly in place are installed.

15. If refurbishment cannot be done prior to storage, storage compound may be applied to Dopeless® connections. In this case, remove rubber rings from the Dopeless® thread protectors prior to installation. Remove storage compound prior to re-run.