

TUBING & CASING THREAD INSPECTION- Thread Form



Thread Profile Templates

Thread Form:

Thread Form is the combination of characteristics of a thread that include lead, flank angle, taper, and roundness. The most important thing to ensure regarding Thread Form is that it is proper and consistent from start to finish. Thread Form controls how threads mate as they are threaded together. Thread Form is the simplest attribute to inspect, but the most overlooked in a typical inspection.



Thread Profile Template

Thread Form Inspection with Profile Templates

Purpose

1. To verify the type of thread form and number of threads per inch.
2. Inspection of thread form with out reference to the product face does not verify that the thread form is perpendicular to pipe axis. Thread form alignment is critical to joint efficiency and leak resistance. The two mating thread forms must align to the same axis.
3. To verify the Pitch line to thread crest measurement which is important for leak resistance.
4. To verify the flanks are free of steps, grooves or grind marks.
5. To insure the correct insert was used and is not worn out or broken.
6. To verify the minimum lengths of full crested threads are present.
7. To verify there are no galled threads produced by ring and plug gages tearing the threads flanks.
8. To verify that the first incomplete thread is deburred, and NO material has been rolled back into the first thread groove.

Gage Operation

1. Make sure the profile template is free of debris and damage.
2. Place the template into the product thread form.
3. Pivot the template about the pipe axis for the best fit.
4. Using a light, shine from behind the template and observe the two mating forms.



5. Holding the template lightly in your hand, slide it counter clockwise around the connection. If there is any debris in the groove it will stop the template. Remove all debris from the thread groove and re-check. This is a major cause of thread damage to made-up connections.

