

Used Pipe Inspection Guidelines

Equipment Required:

1. Standard personal protective equipment
2. Wire brush capable of cleaning external and internal threads
3. Full body thread gauge for pin and box and profile thread gauges.
4. Micrometers if inside and outside box diameter is to be checked.
5. Measuring tape or strap longer than longest tubing length.
6. Permanent marking pen or paint device.
7. Forms for recording data on tubing.

Checks:

1. Record metallurgy, weight and grade of the tubing.
2. Record the connection type
3. Reject tubing joints that are bent, dented, or have been welded or repaired in the field.
4. Clean the threads on both pin and box ends of the connection on all remaining tubing with a wire brush.
5. Corrosion and damage inspection
 - a. Examine the threaded connection for cracks, especially at the base of the thread – the area where the thread ends on the tubing body. Reject the joint if any cracks are found. If cracks are seen or suspected, and further confirmation of the presence of a crack is needed, use the attached crack check procedure.
 - b. Reject the joint if there is corrosion or pitting in the threads. Corrosion may include pits, surface cracks, or areas where metal is flaking off.
 - c. If the threads are damaged in any physical manner, clean the threads with a properly sized thread die or tap and re-inspect. Reject the joint if the threads are damaged.
 - d. Examine connection and at least the first 50 cm (20 inches) of tubing body from the base of the threads. Reject the tubing joint if there are body cracks or splits, severe wrench, tong or slip marks more than 2 mm deep.
6. Threaded connection inspection
 - a. Pin Ends – Screw on an external thread gauge onto the threaded pin end until the threads become tight. Measure the distance left to the end of the threads. Check for tightness of fit (can it be shaken or moved side-to-side or back and forth?). Reject the tubing joint if the threaded guide will not screw on or make up hand tight.
 - b. Pin Ends – Check the ID of the tubing at the end of the pin. Reject or repair the joint if the ID is restricted (indicates overtightening of the tubing connection).
 - c. Box Ends - Check the box OD with a micrometer or caliper. Reject the tubing joint if the connection OD is more than 5% larger than specification. Larger box diameters may mean that the box has been permanently deformed (stretched outward) during make-up and has lost thread contact.

- d. Box Ends - Use an internal connection gauge to check the box (or female) thread. Check for tightness of fit (can it be shaken or moved side-to-side or back and forth?). Reject the rod if excessive looseness is found in the connection.
7. Tubing OD body and connection OD Wear - Make two diameter measurements at the connection box and at points on the tubing joint every meter down the rod length or where there is obvious wear. Reject the tubing joint if the connection box or the tubing body have less than 95% of new body and connection diameter.
8. If the tubing joint meets all inspection points, install thread protectors and protective coating and store in approved racks until ready for use.

For information on Corrosion: <http://www.nace.org/nace/index.asp>

Additional Inspections:

Ultrasonic – wall thickness, defects/cracks, etc.

Tubing Bands:

0% - 15% Wall Loss - Yellow Band (Downhole operations and some line pipe applications)
16% - 30% Wall Loss - Blue Band (Shallow downhole operations and line pipe applications)
31% - 45% Wall Loss - Green Band (Low pressure line pipe applications)

API Specifications:

Spec 5A5 – Field Inspection of New Casing, Tubing and Plain End Drill Pipe
Spec 5B – Threading, Gauging & Thread Inspection of Casing, Tubing and Line Pipe Threads
Bulletin 5C2 Performance Properties of Casing, Tubing and Drill Pipe