

State Energy Inspection Services Standard Operating Procedure Drift Testing	Instruction #	Manual
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1.0 Scope

- 1.1 This document details requirements, equipment and procedures for full length drifting of casing and tubing. The requirement of this procedure is to be followed when Drift Testing is specified on the State Energy Inspection Services work order.

2.0 Personnel Qualification

- 2.1 Personnel performing this procedure must be classified, as a minimum, Trainee or greater.
- 2.2 Trainees shall be under the supervision of an on site Level II or Level III inspector.
- 2.3 Personnel performing this procedure must be able to distinguish j-1 letters at 12 inches on a Jaeger eye chart and have no color vision impairment.

3.0 Reference Documents

- 3.1 The following documents are referenced in this procedure.
- API. Specification 5CT
 - API. RP5A5
 - API Specification 5L

4.0 Definitions

- 4.1 Refer to RP5A5 for definitions used in this procedure.

5.0 Equipment

- 5.1 Equipment used in this specification shall consist of:
- O.D. Micrometers
 - Scale
 - Drift mandrels
 - Sewer tape or automated drifting system to propel the mandrel through the pipe

6.0 Procedure

- 6.1 Apply a sequence number to each length of pipe to be drift tested.

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6.2 All gauges, equipment, measuring devices, etc. should be exposed to the same ambient temperature as the material being inspected for a minimum of 30 minutes prior to taking any measurements.

6.3 Drift mandrels will be verified for size requirements prior to use and should be re-measured at specified intervals.

- a) After approximately 500 lengths
- b) Any time the mandrel has been struck hard causing visible damage
- c) At completion of the job

6.4 Each diameter measurement should be made in two positions, 90 degrees apart near the top, bottom and middle of the mandrel consisting of a minimum of 6 measurements.

6.5 All drift mandrels shall be cylindrical throughout their entire length and supported on both ends. Both ends of the mandrel shall be rounded or beveled to permit easy entry into the pipe and prevent damage to coupling or box threads.

6.6 Tolerance on drift mandrel OD dimensions:

- a) Uncoated pipe (bare): +0.005" / -0.000"
- b) Internally plastic coated casing or tubing: +0.000" / -0.010"

Note: Dimension tolerances larger than those noted above are not uncommon for use, but should not be used for reject disposition.

6.7 Drift mandrel length:

- a) Casing 8 5/8" and smaller: 6 inches
- b) Casing 9 5/8" and larger: 12 inches
- c) Tubing sizes thru 4 1/2": 42 inches

Note: Dimension lengths longer than those noted are not uncommon for use, but should not be used for reject disposition.

6.8 Drift mandrels for all uncoated casing and tubing shall be manufactured of steel. Drift mandrels for all coated casing and tubing may be manufactured from Teflon, plastic, or hardwood. Drift mandrels for 22-chrome and other alloyed materials shall be manufactured of Teflon or plastic.

6.9 Drift testing may be performed by pushing or pulling the drift mandrel through the entire length of the tube but the force should not exceed the weight of the drift. Do not attempt to force the drift through the pipe for acceptance.

6.10 The drift mandrel should be inserted and removed carefully so that neither the threads nor any seal areas are scratched or damaged in any way.

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- 6.11 If the drift does not pass freely or if it becomes stuck perform the following:
- a) Remove the drift and clean it if necessary
 - b) Blow out all contaminates from the pipe ID
 - c) Visually examine the tube for obvious damage and add support if sagging is present
 - d) After all this, if the drift passes freely the length is acceptable
 - e) If the drift mandrel does not pass, locate the point of restriction and identify as reject.

7.0 Evaluation and Identification

- 7.1 If the Drift will not pass freely, the tube will be identified as a no drift and painted red at the point of rejection and the word in ink "NO DRIFT" written on the pipe.
- 7.2 If a length of pipe will not pass an "alternate drift" it shall not be identified as reject unless the mill identification shows the pipe was manufactured to alternate drift requirements. The length may be rejected if required by customer specifications or requirements.
- 7.3 For pipe that passes drifting, stencil per the work order requirements.

8.0 Records

- 8.1 Reporting of drift testing is to be included on the final report.
- 8.2 Records shall be kept for a minimum of 5 years.

9.0 Attachments

- 9.1 The following tables are attached and are a part of this procedure.
- a) Table 8-1, Tubing Drift diameters, uncoated pipe
 - b) Table 8-2, Tubing Drift diameters, coated pipe
 - c) Table 8-3, Casing Drift diameters, 2 pages