

PROCEDURES

QUALIFICATION TESTING / POLYETHYLENE

2.0 PURPOSE

This section establishes the specific requirements and procedures by which personnel will be deemed qualified to join polyethylene pipe, tubing and fittings by the heat fusion and mechanical methods. All criteria for initial qualification and annual re-qualification are outlined in this section.

Preliminary training shall be provided for each person attempting to qualify in joining polyethylene pipe and tubing.

Each person attempting to qualify should understand all of the procedures for joining polyethylene pipe, tubing and fittings prior to qualification testing.

2.1 SCOPE

- A. Initial test
- B. Requalification testing

2.2 INITIAL TEST REQUIREMENTS

- A. The qualification test shall consist of:
 - 1. 2", 4" and 6" Butt Fusion.
 - 2. Continental service tee with 1" IPS outlet.
 - 3. Continental HVTT with 2" IPS outlet.
 - 4. 2" Electrofusion Coupling (only for those persons who need to be qualified in electrofusion).
 - 5. 1" IPS lyco mechanical and 1" and 2" met-fit mechanical fitting.
- B. The initial qualification shall be conducted by a **Qualified Third Party**. The individual conducting the tests shall:
 - 1. Observe the construction of the fusion test assembly.
 - 2. Evaluate the fusion heating times, safety practices, and use and care of tools.
 - 3. Check for the double rollback bead in the butt joint. Inspect the joint for a uniform, nonporous, well-aligned bead around its entire circumference.

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4. Observe that all aspects of the procedures are adhered to during the qualification test.
- C. After joints have cooled to ambient temperature butt fusion and electrofusion joints shall be subjected to a **bend test**. Cut joints into at least 4 longitudinal sections 1" wide and 9" long. One section shall be taken from each quadrant. These sections shall be subjected to 2 root bends and 2 face bends, (4 face bends for electrofusion) Fusions shall be subject to destructive testing as recommended by PLEXCO bulletin #105.
- D. Rejection Criteria

The following constitutes the criteria that will result in disqualification of a person to make heat fusion joints with polyethylene:

1. Any defect in the bead. This includes non-fusion, porosity, incomplete rollback, failure of the bend test, etc.
2. Any indication of fusion brittleness.
3. Failure to perform the fusion per qualified joining procedures.

2.3 ANNUAL REQUALIFICATIONS

- A. The requalification test shall consist of one 2" and one 6" butt fusion.
- B. Annual re-qualification on electrofusion (only for those persons who need to be qualified in these processes as per supervisors) shall be the same as the initial qualification:

Electrofusion - 2" coupling