



Permalok® Steel Casing Pipe Specifications

SCOPE: This specification is intended for steel pipe utilizing an integral, machined press-fit connection method proprietary to Permalok® Corporation of St. Louis, Missouri, for use as encasement pipe for carrier lines of water, sewer, gas or other products. Permalok steel pipe for use as the actual product carrier is covered by a separate specification and not included here.

PART 1 - Material

1.1 All steel used in the manufacture of Permalok steel pipe shall conform to the requirements of ASTM A-36, ASTM A515, grade 60 or ASTM A572, grade 42.

1.2 Steel used in the manufacture of Permalok connections shall conform to ASTM A-36 as a minimum and be machinable.

PART 2 - Dimensional Tolerances

2.1 Roundness - The pipe diameter as measured along any single plane shall not vary more than 1% from the specified diameter.

2.2 Circumference - The outside circumference shall not vary more than $\pm 1\%$ from the nominal circumference based on the specified diameter, or $\pm 3/4"$ maximum.

2.3 Wall Thickness - The actual wall thickness of the steel pipe sections shall not vary more than 5% under the nominal wall thickness specified.

2.4 Straightness - The maximum straightness deviation in any 10' length shall be $1/8"$. The maximum straightness deviation in fabricated sections up to 40' shall be $3/8"$.

PART 3 - Manufacturing

3.1 Permalok steel pipe 24" and under shall be either ERW or seamless at the manufacturers option.

3.2 Permalok steel pipe 30" in diameter and over shall be manufactured by the rolled and welded cylinder method utilizing the DSAW process in sections of not less than 8' long, except as needed to achieve the final finished length of pipe.

3.3 Permalok connectors shall be full penetration butt-welded square to the ends of pipe sections, or profiled directly on the finished sections, at the manufacturer option.

3.4 Spiral welded pipe will be permitted only at the purchasers request, or approval

(over)

PART 4 - Quality Control

4.1 All welding shall be performed by qualified welding operators in accordance with the requirements of ANSI/AWS D1.1.

4.2 All welding procedures shall be either pre-qualified in accordance with ANSI/AWS D 1.1 for full penetration welds, or qualified by testing, as required.

4.3 One reduced section tension test specimen shall be evaluated for each lot of 1000' of each size and wall thickness, and shall show a tensile strength not less than 95% of the minimum strength specified for the grade of steel used, unless waived by the purchaser.

4.4 Hydrostatic testing is not required.

4.5 All Permalok connections shall be examined at time of shipment and shall be free of injurious defects or that section shall be rejected and repaired prior to shipping.

4.6 All Permalok pipe shall be clearly marked with the manufacturers' name, manufacturer's job number, customer name, O.D., wall thickness, and weight per foot.