



Radiographic Enlargement

Actual Pipe Wall = (Actual Ball Diameter + Ball Diameter on Film) X Wall Thickness on Film

Notes:

Divide the actual ball diameter of length of optical comparator by the measured apparent length on the film.

Multiply this answer by the pipe wall thickness as measured on the film.

For accurate measurement the ball or comparator block must be put as near as possible to the exact side of the pipe parallel to the film so that the enlargement of the pipe wall is the same as that of the ball or block.

If the comparator or ball is not touching the pipe because of insulation, aim the source at the center of the space between the two, as shown in the drawing below. This will help insure an equal amount of enlargement to the ball and the pipe wall. (*Think of how the source side of an elliptical 2" weld is distorted more than the film side*)

Example:

If using a one inch diameter ball and the diameter measured on the film is actually 1.2 inches and the film wall measured on the film is 0.500", the actual wall thickness is 0.416 inches.

$$\text{Pipe Wall} = (1'' \div 1.2'') \times 0.500''$$

$$\text{Pipe Wall} = 0.83 \times 0.500''$$

$$\text{Pipe Wall} = 0.416''$$

