

**STATE OF OHIO
DEPARTMENT OF TRANSPORTATION**

**SUPPLEMENT 1025
METHOD OF TEST FOR DEFLECTION OF LIGHT POLES**

April 19, 2002

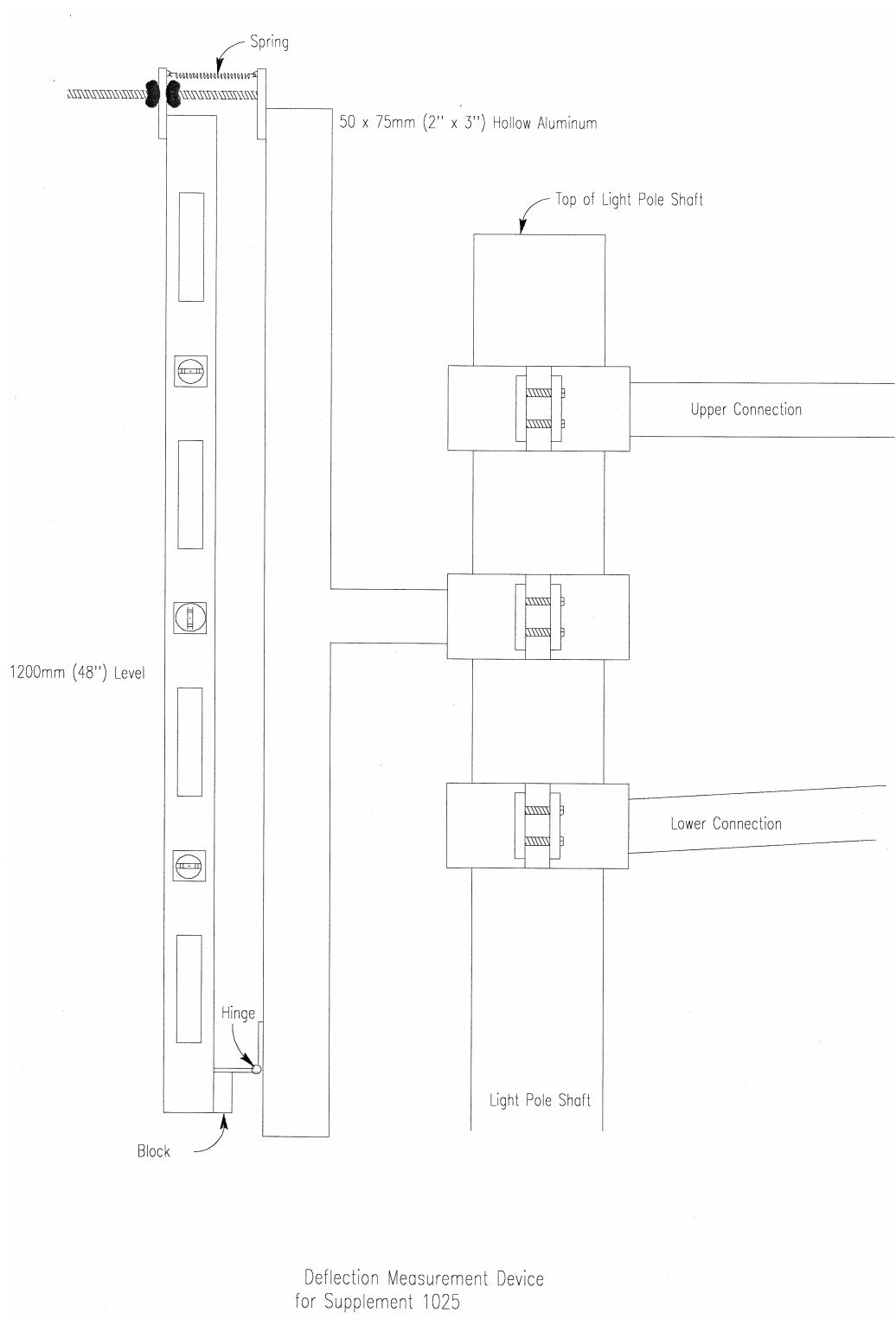
1025.01 Description. The deflection shall be measured at a point halfway between the upper and lower bracket arm connections, as shown in the attached drawing. However, if the pole has a single arm the measurement is to be made above the connection.

1025.02 Method of Measurement

1. Equipment. An accurate level, at least 48 inches (1200 mm) long, shall be used to make deflection measurements. This level shall be attached to a rigid metal bar by means of a hinge at one end so as to permit motion in two directions. The other end shall be equipped with an adjusting screw and lock nut. The level and supporting bar shall be attached rigidly to the light poles by means of a clamp similar to those used to attach the bracket arm. The attached sketch shows the principle of the level attachment.
2. Procedure. The pole shall be erected in a vertical position without the arm. The level attachment is then clamped in the specified position, on the side of the pole opposite the position of the arm. The level is then adjusted so that the bubble is centered and the level locked into position with the adjustment screw. The distance from the level to the supporting bar, at the end opposite the hinge, is then measured with an accurate steel scale. The arm with the proper weight in place of the luminaire is then mounted. The level is again adjusted to center the bubble and the distance to the bar measured. The angular deflection is calculated by means of the formula:

$$\text{Deflection angle} = \text{arc sin } \frac{(\text{final reading} - \text{original reading})}{(\text{effective length of level})}$$

Effective length of level is the distance from hinge pin to point where measurement is made.



Sketch of Deflection Measurement Device