and (44) gives

$$a_1 = \left(\frac{R_c - R_o}{R_c} - a_3\right)/R_c^2 \qquad (45)$$

The second condition relates the radial wafer deflection to the constraining pressure. If δ is the radial deflection at the mid-meridian plane, then

$$\delta = R_c - R_o = (5.32 \times 10^{-8})\, P_c \qquad (46)$$

where P_c is the restraining pressure exerted on the wafer, at $Z = 0$, by the containing ring. The numerical factor appearing in (46) is obtained from an application of the well-known Lamé equation for the elastic deformation of a thick-wall cylinder. These equations can also be used to describe the amount of tangential strain $\epsilon_{\theta c}$ occurring at the outer surface of the containing ring, due to the influence of the internal pressure P_c. The relation found for the ring used in this program is

$$\epsilon_{\theta c} = (3.02 \times 10^{-9})\, P_c \qquad (47)$$