From AGMA 2002-B88, Tooth Thickness Specification and Measurement
Section 8.4: calculation for Composite Action Test Measurement

$$\theta_3 = arc\,inv\left[\frac{P_d \cdot (t_1 + t_2) - \Pi}{N_1 + N_2} + inv\,\theta_s\right]$$

$$C_{max} = \frac{D_{bl}}{2 \cdot \cos\theta_3} \cdot \frac{(N_1 + N_2)}{N_1}$$

$$C_{min} = C_{max} - V_{cq} - \frac{t_T}{2 \cdot \tan\theta_3}$$

$$R_{T\,min} = C_{min} - R_m$$
$$R_{T\,max} = C_{max} - R_m$$

C_{min} = Minimum center distance
C_{max} = Maximum center distance
θ_3 = Transeverse operating pressure angle in tight mesh
$R_{T\,min}$ = Minimum test radius
$R_{T\,max}$ = Maximum test radius
R_m = Master gear test radius
t_T = Tooth thickness tolerance [see AGMA 2000-A88 (or determine from MOW)]
V_{cq} = Total composite variation [see AGMA 2000-A88]
t_1 = Maximum tranverse tooth thickness of test gear at θ_s
t_2 = Transverse tooth thickness of master gear at θ_s
N_1 = Number of teeth on test gear
N_2 = Number of teeth on master gear
P_d = Transverse standard diametral pitch
D_{bl} = Base circle of test gear

In the formula for C_{min}, use of θ_3 for the minimum pressure angle is an approximation.