Practice problem

Example 11.10 *A cone clutch with asbestos friction lining transmits 30 kW power at 500 rpm. The coefficient of friction is 0.2 and the permissible intensity of pressure is 0.35 N/mm^2. The semi-cone angle α is 12.5°. The outer diameter is fixed as 300 mm from space limitations. Assuming uniform wear theory, calculate:*

(i) the inner diameter;

(ii) the face width of the friction lining; and

(iii) the force required to engage the clutch.