Worm shaft deflection

hoh lagerafstand= l_1 ; omtrekskracht referentiecirkel worm= F_{tm2} ; torsie referentiecirkel worm= T_{max} ; referentiecirkel worm= d_{m1} ; spoedhoek= γ_{gem} ; tandflankhoek= α_n ; wrijvingshoek=Q'; dynamische wrijvingscoefficient= μ_d formule 23.30-RM;

$l_1 := 260\ mm$ $\quad T_{max} := \frac{10.688\ (kN \cdot m)}{104} = (1.028 \cdot 10^5)\ N \cdot mm$ $\quad d_{m1} := 39.579\ mm$

$\gamma_{gem} := 7.2\ deg$ $\quad \alpha_n := 15.2\ deg$ $\quad F_{tm2} := \frac{T_{max} \cdot 2}{d_{m1}} = (5.193 \cdot 10^3)\ N$

$\mu_d := 0.12$

$$Q' := \frac{\mu_d}{\cos(\alpha_n)} = 0.124$$

$$f_{max} := \frac{2 \cdot 10^{-6} \cdot l_1^{\ 3} \cdot F_{tm2} \cdot \sqrt[2]{\boxed{tan}^2 \cdot (\gamma_{gem} + Q') + \frac{tan^2 \cdot \alpha_n}{cos^2 \cdot \gamma_{gem}}}}{d_{m1}^{\ 4}} = ?$$