1069-57-302   **Claus Ernst*** (`claus.ernst@wku.edu`), Dept. of Math. and Comp. Sci., WKU, 1906 College Heights Blvd, Bowling Green, KY 42101, and **Attila Por** (`attila.por@wku.edu`), Dept. of Math. and Comp. Sci., WKU, 1906 College Heights Blvd, Bowling Green, KY 42101. *Average crossing number, total curvature and ropelength of thick knots.*

Let K be a smooth knot of unit thickness embedded in in the space R^3 with length $L(K)$ and total curvature $\kappa(K)$. Then $acn(K) \leq c \cdot L(K) \cdot \sqrt{\kappa(K)}$ where $acn(K)$ is the average crossing number of the embedded knot K and $c > 0$ is a constant independent of the knot K . This relationship has been conjectured in an article by G. Buck and J. Simon where it is shown that the square root power on the curvature is the lowest possible. In the last part, we give several examples to illustrate some relationships between the three quantities average crossing number, total curvature and ropelength. (Received January 25, 2011)