Reason for the Trends seen as per change in grid Fourier numbers →

* The D-N boundary condition violates the strong diagonal dominance in the last row and hence its invertibility is lesser than D-D.

* If we increase F_0, the matrix is still strongly diagonally dominant but the condition number increases and the invertibility decreases.

For any row of A, after normalization, the $\sum_j |a_{ij}|$ becomes $\left(1 + \frac{2F_0}{1+2F_0}\right)$.

So as the above expression increases as we increase F_0, $\|A\|$ increases, increasing the C.N. Likewise $\|A^{-1}\|$ has the same trends.