BAR OF RECTANGULAR CROSS SECTION.

F.1) Rectangular Cross Section.

\[ Q = G \frac{V}{F}, \quad G = \frac{2\pi s}{S}, \quad F = F\left(\frac{a}{s}, \frac{h}{s}\right) \] \hspace{1cm} (17)

The geometric factor has been derived by Uhlig (f) (g) and Hansen (d). Hansen's results are given in the form:

The values of \( F \) for an infinitely long bar are shown at page 33.

Bar of finite length \( 2l \)

An examination of the results of Uhlig (f) (g) shows that when measuring on a semi-infinite plane sample at a distance \( L \) from the edge, the dependence of \( G \) on variation in \( L \) is the greater, the thinner the sample. This can also be seen by comparing the factor \( D_1(\frac{L}{s}) \), section C.1 with the factor \( D_5(\frac{L}{s}) \) section E.3, and factor \( D_2(\frac{L}{s}) \) section C.2 with factor \( D_4(\frac{L}{s}) \) section E.5.

When the bar becomes finite, the deviation of \( G \) from \( \frac{2\pi s}{F} \) will be greatest in the cases when \( a \ll h \) or \( h \ll a \) (see also(d) pp. 99-100). In estimating the deviation, an upper limit is obtained from the factor \( D_5(\frac{L}{s}) \) in section E.3, doubling the deviation from unity, when this is small.

From this we conclude, that when

\[ 2l > 13s, \quad 0,97 \cdot \frac{2\pi s}{F} \leq G \leq \frac{2\pi s}{F} \]

for all values of \( a \) and \( h \). \( 2l \leq 13s \) means, that the current