

BUCKLING STRESS COEFFICIENTS FOR PARALLELOGRAM SHAPED PANELS IN CONTINUOUS FLAT SHEET UNDER UNIFORM COMPRESSION

1. NOTATION

a	length of panel	m	in
b	panel width measured perpendicular to a (see Figure 1)	m	in
E	modulus of elasticity of panel material	N/m ²	lbf/in ²
f_b	critical compressive stress	N/m ²	lbf/in ²
K	buckling coefficient defined by $f_b = KE \left(\frac{t}{b} \right)^2$		
t	plate thickness	m	in
α	angle of sweep of panel	degree	degree
ν	Poisson's ratio for panel material		

Both SI and British units are quoted but any coherent system of units may be used.

2. NOTES

In Figure 1 the buckling coefficient K is plotted in Figure 1 against a/b for various values of α . The panels are assumed to be part of a continuous flat sheet divided into parallelogram shaped panels by non-deflecting supports. The edges of the panel are free to rotate, but they remain straight and in the original plane of the panel.

The curves are applicable only to panels of isotropic material and have been calculated for a value of $\nu = 0.3$. For other values of ν the values of f_b may be obtained by multiplying the value obtained from Figure 1 by $0.91/(1 - \nu^2)$.

3. DERIVATION

1. ANDERSON Charts giving critical compressive stress of continuous flat sheet divided into parallelogram shaped panels. NACA tech. Note 2392, 1951.

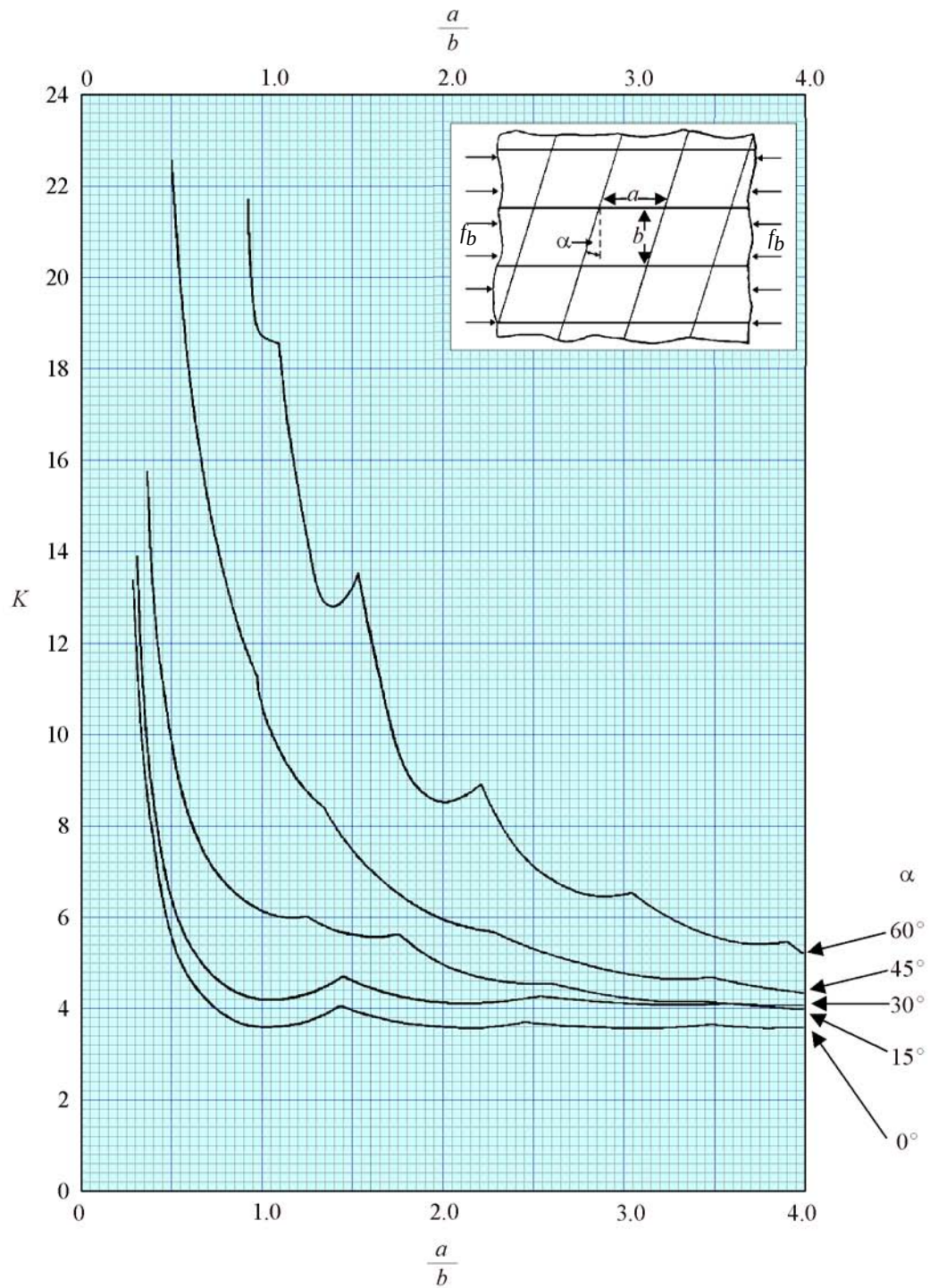


FIGURE 1