ENGLISH SUMMARY

Björk, Timo, BUCKLING ANALYSIS OF COLD-FORMED SECTIONS USING THE
FINITE STRIP METHOD

Finite strip method (FSM) is a simplified variant of the general
finite element method. FSM is very applicable for buckling analysis
of cold-formed profiles because it makes possible to analyse both
global buckling modes (flexural, torsional, flexural-torsional and
lateral buckling) and local phenomenas (local and distortional
buckling). In this method the cross section is subdivided into
longitudinal strips. The displacements of the strips are described
by harmonic functions in the longitudinal direction. Eigenvalues are
obtained by Sturm sequence routine to isolate each particular eigen-
value. An example concerning application of this method is given.

Nykyri Pekka, AN ANALYSIS OF THE BEHAVIOUR OF REINFORCED CONCRETE
STRUCTURES UNDER COMBINED SHEAR AND BENDING

Behaviour of reinforced concrete structures under combined shear
and bending can be analyzed by calculation method based on the
rotational model. The structure is supposed to rotate round the
intersection point of crack and neutral axis. The crack is inclined
where shear forces are acting. The uneven strain distribution of
reinforcement will be described by the aid of bond-slip-relationship
and interaction formula. On the compression side the uneven strain
distribution will be taken into account by experimental formula. The
failure criterion of compression zone is based on the biaxial state
of stress. The method gives results on the safe side in cases of
rectangular and T-cross-section. The calculated values are 0.7 -1.0
-fold compared to test results when shear span to depth ratio is
greater than 1.0.