

SNS COLLEGE OF TECHNOLOGY (An Autonomous Institution)



DEPARTMENT OF AERONAUTICAL ENGINEERING

Subject Code & Name: **19AST203** Aircraft Structural Mechanics TOPIC: Inter rivet buckling and sheet wrinkling failures- Effective width

Inter Rivet Buckling !-It may occur the fastener, rivert relatively large compare to istiffness thickness In such a case the skin wrinkle between the rivet. But the stiffness flange remains essentially Straight . Sheet Wrinkling :-If the fastener pro vivet pitch is small enough to prevent Inter vivet buckling there is possibility Of sheet wringkling failure) In this longer range buckling mode, the skin does not bow away from the stiffner between the fastoner. but these to sorce the stiffness flange desorm with it. This intend induces stress in the thickness web possibility leading to local crippling of stiffness. (+) a call = 100 flexural Rigidity of plate or sheet, $D = \frac{E + 3}{12(1 - 9^2)} \left(\frac{1}{4}\right) = 285 + 0 = 10^3$ Effective Width : Loons bonotting & nonor compressive tood Thy shoet region in betarien the stiffings buckle ropad on line active comprehive li Heat region (need the rivet LADDA TAS LAD 2201 12112 tine an continues to ant musso produce and great avreament stars and mart somethi 107 Jairos La Restant halton si be

COST 455 > We = 0.85 6 00 L'EXPENSION AT L Ess > We = 0.60 t Ve anno oprot Elsertorg wind wat and A Rolds an Crippling Stress:-NIL Charling Price sheet WY INKING .. 255 the flockener 455 455. ration provers interest as shoet curringthing tory T Treet and the endland apart Sto CY Z 12 (1-22) 2" and live and mort upoin .190 flexural Rigidity of plate or threet. 225 $\sigma_{cy} = 0.385 E \left(\frac{t}{b}\right)^2$ $D = \frac{f^2 + 3}{12(1 - 3^2)}$ when a stiffened sheet is subjected to compressive load The sheet region in between the stiffness buckle first and will no longer resist compressive load. But the stiffness and adjacen sheet region lnear the rivet line) can continues t

load is called effectively.)

resist compressive load and yielding occur. The

distance from the rivet line, the skin resist compres

