**ABSTRACT:**

 The present research work is to determine the buckling failure temperature in FRP rectangular plate with two different boundary conditions and geometry of the rectangular laminated plate, which is to be subjected to uniform temperature using the 2-D finite analysis.

 The commercial finite element analysis software ANSYS has been successfully executed and the finite element model is validated. The buckling failure temperature is evaluated by changing the ratio of ‘S1’ and aspect ratio ‘S2’ for different stacking sequences with two sides fixed ends and four sides fixed end boundary conditions, the effort of the above parameters on the buckling failure temperature is discussed.

 The results of the present research work shows that the buckling failure temperatures of a plate, which give a conclusions are:

* The thicker the laminate, bearing the high the thermal buckling failure temperature.
* The thermal buckling failure temperature increases with an decreases in the aspect ratio
* Also the lamination sequence is affecting the thermal buckling failure temperature.