

3d) Aluminium HAS ITS ADVANTAGES OVER STEEL DUE TO THE LOWER DEFLECTION SHOWN IN PART (a) WHICH MEANS THE MACHINE COULD WITH STAND HIGHER TORSION FORCES. WE CAN ALSO SEE IT HAS A MUCH HIGHER STIFFNESS WHICH IS DEPENDANT ON THE CROSS SECTION RATHER THAN THE THICKNESS OF THE PANELS. SO IF THEY WERE BOTH SAME THICKNESS ALUMINIUM WOULD BE ALMOST 3 TIMES STIFFER WHICH IS GREAT FOR A PANEL. FROM PART (b)

AND IN PART (c) WE CAN SEE THAT THE STIFFNESS TO WEIGHT RATIO IS SIMILAR. ~~SO FOR LESS MATERIAL WE GET WEIGHT~~ WE CAN HAVE SLIGHTLY HIGHER PERFORMANCE FROM ALUMINIUM TO STEEL IN WEIGHT