

Jake Bobula

Physics/Astrophysics, IT, 2010

Mentor: Kenneth Heller, Physics

PVC Glue Strength as a Function of Open Time

I worked on the NOvA project specifically I worked with PVC glues. The last quarter of the time that I worked on the NOvA project was on new glue and testing the affects of open time on the glue. Open time is the period of time that the glue is on one of the pieces being put together before the other side is put onto the glue. There were two sets of these tests one is called the mixed samples the other half is called the flat samples. For the mixed samples before the second piece was set on the first the glue was smeared around on the first piece. The flat pieces are simply put together without smearing. The reason that smearing affects the test is that when the glue is left open in the air after a period of time a thin dull film develops on the top of the glue. The smearing disrupts this film. It is assumed that this film causes a loss of strength in the glue. The comparison of the mixed to flat samples will show the affects of the film and smearing will extend the effective open time. The results from these tests were interesting. The tensile samples were not made correctly and produced useless data. The results from the mixed samples show, in both the cleavage peal and shear, quite conclusively that smearing definitely extends the open time at which the strength falls off past the time I was measuring. The flat cleavage peal data show a drop in strength between the 21st and 24th minute of open time. In the flat shear samples the data points to a sloped decrease in strength starting around the 21st minute of open time.



Poster Number: Session: