* Cut the spaghetti in half and try again
* Cut the spaghetti in half again and try again

**ENGR 100 Component Test Data Sheet**

**\*\*Make sure the glue is right on the middle section of the specimens.**

**Test 1.  Tension Test Data**

|  |  |  |  |
| --- | --- | --- | --- |
| **Overlap Length (in)**  **max. < ¾"** | **Force at Failure (lbs)** | | |
| **Specimen 1** | **Specimen 2** | **Specimen 3** |
| **1/4 "** |  |  |  |
| **3/8 “** |  |  |  |
| **1/2 “** |  |  |  |
| **5/8 “** |  |  |  |
| **3/4 “** |  |  |  |
| **Average** |  |  |  |

\* To calculate force, use this equation in EXCEL:  Force (lbs) = (Scale Reading/1000)\*9.81\*.2248

\*\*Select an "x-y scatter" graph not a line graph when graphing these results.\*\*

**Test 2.  Compression Test Data**

**\*Make sure the ends are flat!**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Length (in)** | **Specimen 1** | | **Specimen 2** | |
| **1/ 4” overlaps**  **(if necessary)** | **Scale Reading (g)** | **Force (lbs)\*** | **Scale Reading (g)** | **Force (lbs)\*** |
| **10 “** |  |  |  |  |
| **9 “** |  |  |  |  |
| **8 “** |  |  |  |  |
| **7 “** |  |  |  |  |
| **6”** |  |  |  |  |
| **3/ 4” overlaps**  **(if necessary)** | **Scale Reading (g)** | **Force (lbs)\*** | **Scale Reading (g)** | **Force (lbs)\*** |
| **10 “** |  |  |  |  |
| **9 “** |  |  |  |  |
| **8 “** |  |  |  |  |
| **7 “** |  |  |  |  |
| **6”** |  |  |  |  |
| **5 7/8” single depressor** |  |  |  |  |
| **4”** |  |  |  |  |
| **3”** |  |  |  |  |

\* To calculate force, use this equation in EXCEL:  Force (lbs) = (Scale Reading/1000)\*9.81\*.2248

\*\*Select an "x-y scatter" graph not a line graph when graphing these results.\*\*

Test 3

Loading Test on different Structure

Use tongue depressor to build structure drawing below. Load the force on the metal plate and read the force by force gauge and record the failure force.

Metal Plate

Wood glue

Structure 3

Structure 2

Structure 1

Now let’s make some composite. Sandwich the 10 fishing line between the tongue depressor

+ Wood glue and

Structure 4

+

|  |  |  |  |
| --- | --- | --- | --- |
|  | Failure Force(lbs) |  |  |
| Structure 1 | Structure 2 | Structure 3 | Structure 4 |
|  |  |  |  |