

1.101 Structures Lab.

Fall 2005

Truss Test Procedure & Report Content

Test Procedure

Each group will subject their truss structure to gradual loading, taking deflection readings at each increment of weight.

Once a total load of 40 lbs has been applied, additional loading may be added to failure - this at the discretion of the team members.

Tests will be done sequentially, one group at a time. You have the first ~two hours of lab to finish the details of fabrication if required.

Make sure you document the test in your lab notebook. Each group member should do so. Lab notebooks will be collected at the end of the semester and evaluated.

Report Content

A separate, summary report of your design and the results of testing - **one per group** - is to be handed in at the **start of class next Tuesday, 22 November**. This should include:

- A description of the structure - a sketch or autocad rendering¹ - including all relevant dimensions (cross-sections of members as well as overall geometry) and descriptive details about welded joints.
- A summary of your analyses with which you estimated member forces, deflections and failure conditions. Do not include the details of analyses - these should be in your notebooks.
- A cost estimate in accord with the information given in the design task assignment. Please use \$1 for the cost of one foot of length of the 1/4 x 1/8 inch stock.
- Test results including a plot of mid-span load versus deflection and a description of how the structure failed - at what loading - and conjecture of the mode of failure.
- Suggestions about how next years design experience might be improved.

¹ If you wish to include a Trussworks image, you can use XV on MIT server to do a screen capture. This is not required.