

**SHEAR FORCE OF BEAM**

**Procedures**

1. Connect the load cell to the digital indicator.
2. Switch on the indicator. For stability of the reading the indicator must be switch

 on 10 minutes before taking readings.

1. Fixed the two simple supports to the aluminium base at a distance equal to the

 span of the beam to be tested. Screw the supports tightly to the base.

1. Hang the load hanger to the beam.
2. Place the beam on the supports
3. Place the load hanger at the desired location
4. Note the indicator reading. If it is not zero, press tare button on the indicator
5. Place a load on each load hanger
6. Record the indicator reading. This represents the shear force at the cut section
7. Remove all loads from the load hangers and apply a different set of loading and

 at different locations.

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 at different location

1. Repeat procedure 6 to 11 for other sets of readings.

**Results**

Result data for shear force experiment:

**Length of Beam Span = mm**

**Distance of loads form the left support**

L1 = mm

L2 = mm

L3 = mm

Distance of the shear section from the left support, X-X = mm

**Table 1: Shear force data at section X-X**

|  |  |
| --- | --- |
| **LOAD CASES (N)** | **SHEAR FORCES (N)** |
| **EXP.** | **THEORY** | **% ERROR** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. Theoretically, calculate the value of shear force at section X-X and fill it in the Table 1.
2. Using the data in the Table 1, plot the bar chart for the shear force for the theoretical and experimental for each load case.
3. Calculate the percentage of error for each load case and hence determine the overall percentage of error.

**Discussion/Analysis**

1. What actually happens when a load is applied to the beam and why does this condition occur?
2. Comment on the accuracy of the experiment and what are the precautions that should be taken in this experiment to ensure its accuracy?
3. State the probable factors that affect the accuracy of the experiments.

**Conclusions**

Refer to the objective.

**References/Appendices**

1. Text book, reference books from the library or electronic references from the internet.

Related photo or plate due to the experiment.