

# Student Instructions

The following information is designed to assist you in building your model bridge. Read through this entire sheet before you begin. Make notes on any areas that are not clear, and be sure to ask your teacher to explain anything that you do not understand.

## Contest Rules

This building code must be followed EXACTLY AS WRITTEN. You must meet the following job specifications to compete in the contest.

The object of the competition is to determine which bridge has the greatest EFFICIENCY. Bridges will also be judged on appearance, neatness and accurate specifications.

### Job Specifications

1. The bridge must be constructed ONLY from the materials included with this program (15 pieces of wood and 2/3 oz. of wood glue). NO OTHER MATERIALS may be used.
2. The bridge must be built within these dimensions:

	Bridge	Roadbed	Optional Underhang
Length	250 to 300mm	200 to 300mm	less than 180mm
Width	50 to 75 mm	50 to 75 mm	50 to 75 mm
Height	less than 100mm	less than 50mm	less than 20mm*

\*Included in the overall height of the bridge

NOTE: The construction must have a clearance of 50mm above the roadbed to allow for "traffic". See dimensional envelopes on the back side of this Instruction Sheet.

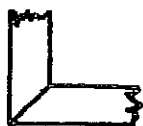
**Caution:**  
Always wear protective eyewear when testing bridges.



3. In the interest of fairness, it is essential that only the materials above be used. In particular, this means that the wood cannot be treated in any way to change its strength or appearance, and only the amount and type of materials specified should be used in construction of the bridge. Only water and/or steam treatment will be allowed in order to facilitate bending of the wood. Wood pieces may be bonded together with glue ONLY at joints, and may not be laminated together in parallel fashion. If two or more strips of wood are placed parallel to each other, they must be at least the thickness of this page apart from each other. Splitting or laminating are not allowed.

#### Allowed

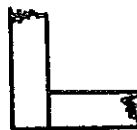
Mitering



Notching

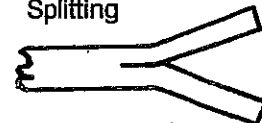


Butting



#### Not Allowed

Splitting



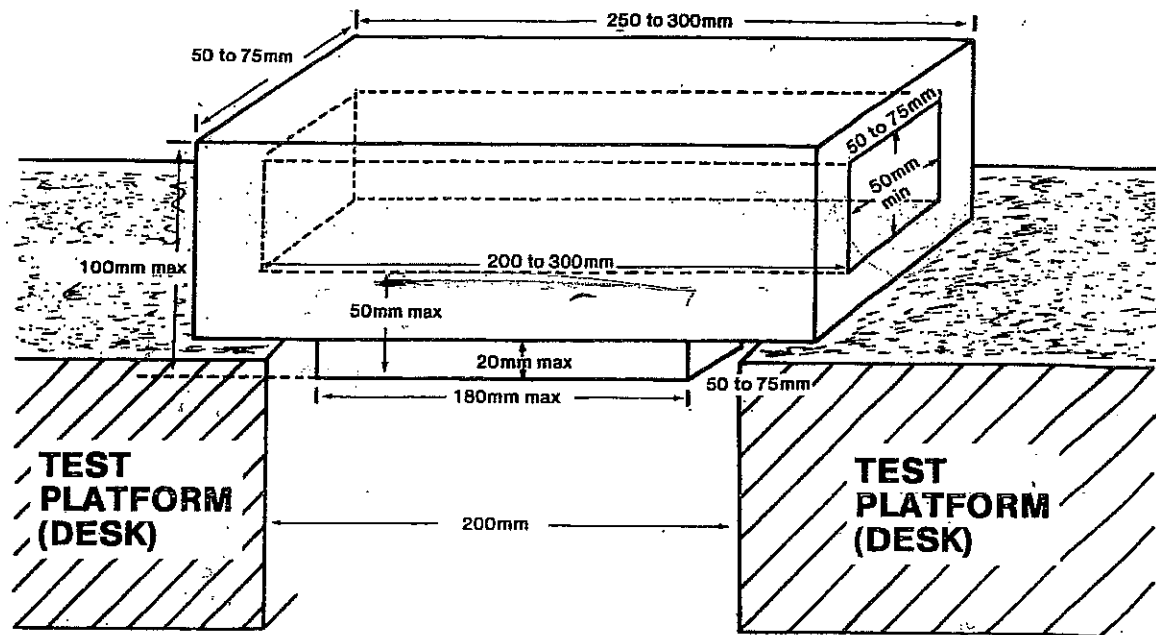
Laminating



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## DIMENSIONAL ENVELOPE



NOTE: DRAWING IS NOT SCALE

### Recommendations

The following tools are necessary to complete this project:

- Pencil, for sketching
- Sketch paper, to draw up original designs
- Ruler (metric) for measuring
- Graph paper, for drawing the final design
- Ink pen, for inking final design

Blueprints or plans for the bridge must be completed in 4 views:

1. END VIEW
2. SIDE VIEW
3. ROADBED
4. TOP VIEW

The bridge models will be evaluated along with the final design plan at the end of the program. Sketch plenty of preliminary designs - and work out all of the details before attempting the final drawing.

A final drawing (in ink) must be submitted for approval before construction begins. After drawings are approved (when they meet the job specifications), be sure that you have all of the appropriate construction tools:

- Building Board (a THICK sheet of corrugated cardboard)
- Straight Pins, to hold pieces in place as glue dries
- Single Edge Razor Blade, or X-Acto® knife, for cutting
- Waxed Paper, to cover the plan (blueprint) as you build on top of it
- Ruler or other device for measuring
- 15 pieces of wood and a 2/3 oz. bottle of glue

The model may now be constructed.