

**MISSOURI SOCIETY OF PROFESSIONAL ENGINEERS
OZARK CHAPTER
MODEL BRIDGE CONTEST**

LIST OF COMMON MISTAKES / HELPFUL HINTS

1. Please ensure that you are using the current set of rules, dated 01/09/2020, as the rules are updated and modified for each year. Additionally, to aid in the processing of the bridges at the contest, please use only the current entry form, also dated 01/09/2020. One Entry Form and one set of rules are included for each bridge kit ordered.
2. The Entry Form includes a Media Waiver Form that must be completed, signed, and submitted with the Entry Form at the Contest. Failure to provide the executed Media Waiver Form may result in disqualification from the contest.
3. The dimensions of the structure must fall between the minimum and maximum as stated in the rules. Deviation from these will result in disqualification. Designing to either the minimum or maximum leaves no room for error or construction tolerance. **Historically, the leading reasons for disqualification have been dimensions not meeting the dimensional requirements:**
 - A. Length of the bridge not between 13.0 inches (331 mm) and 14.0 inches (355 mm). (See Rule 2.C).
 - B. Height of the bridge greater than the 4.0 inch (101 mm) maximum. (See Rule 2.C).
 - C. Width of the bridge not between 2.0 inches (51 mm) and 3.0 inches (76 mm). (See Rule 2.C).
4. The maximum mass of the structure is **20.0 grams (0.70 oz)** and the minimum mass is 5.0 grams (0.18 oz). Not all scales are calibrated exactly the same. The digital scales present at the competition will be the final judgment. **Please note that the kits contain more than 20.0 grams (0.70 oz) worth of material.** If the mass of the structure exceeds 20.0 grams (0.70 oz) or is less than 5.0 grams (0.18 oz), it will be disqualified. Bridge mass has historically been one of the leading causes for disqualification.
5. The load will be applied to the structure via a wooden loading block that is approximately 1.75 in x 1.75 in x 0.75 in (45 mm X 45 mm X 20 mm) and a 5/16 inch (8 mm) diameter loading rod (see sheets 4 - 6 of the rules). **The loading area of the bridge must be such that this loading block can physically be placed at mid-span and the loading area must have an opening for the loading rod.** Otherwise, the structure can not be properly tested and will be disqualified. The loading block will be placed square with the bridge. If it becomes necessary to rotate the block from square (e.g. turn 45° to the bridge) in order to load it as intended, the bridge will be disqualified.
6. The rules call for the bridge to have a "loading area". The bridge does not, however, have to have a roadway surface from end to end. It must have a location at mid-span of the bridge designed for the 1.75 in x 1.75 in x 0.75 in (45mm x 45mm x 20mm) loading block to rest on for testing as well as a place for a 5/16 in (8 mm) diameter rod to pass through. Many students bring bridges that have a full deck. Although this looks very nice, it greatly increases the bridge weight and reduces the structural efficiency significantly. All that is required is a place to test the bridge with the testing block in the center. It is recommended that the loading area be "marked" with a colored sharpie pen to clearly indicate where the bridge is intended to be loaded.
7. Please be certain that all joints are adequately secured. Transporting your bridge and the extra handling required to test the bridge can loosen inadequately secured joints, causing them to fail prior to testing.
8. Only the materials provided may be used with the exception that any commonly available adhesive may be used. Most any glue will work, but the wood "super glues" that can be found at hobby stores typically result in stronger joints.
9. The bridge may not be stained, painted, or coated in any fashion with any foreign substance. All materials must be identifiable as the official basswood.