
Brookhaven
National Laboratory
U.S. DEPARTMENT OF
ENERGY
2025 Bridge Contest
Review of the Qualification Process
@BrookhavenLab

What Are Bridge Qualifications?

When your bridge is brought to BNL, our engineers fill out an inspection report to determine if it qualifies

This inspection report is a guide and does not replace the official specification document found at www.bnl.gov/bridgebuilding

Brookhaven National Laboratory

DQ:

2025 Model Bridge Inspection Report

School Name		**Mass**	
Student Name		**Load at Failure***	
Bridge Number		**Efficiency**	

*If load > 50 kg, 50 kg will be used in the efficiency calculation

LOC	ITEM	CRITERIA	Q	DQ
1	Materials	Only 3/32-inch (2.4 mm) square basswood and any commonly available adhesive, with no stain/paint/coating		
2a	Mass	Max 25.00 grams		
2b	Length (**L**)	Max 400. mm		
2b	Height (**H**)	Max 100. mm		
2b	Width (**W**)	Max 80. mm		
2b	Span (**S**)	Min 300. mm		
2c	Arch	"arch-type" structure below the main support plane that makes contact with the vertical faces of both support surfaces		
2b	Lower Extension	Max 10. mm extension below the support surface		
2d	Load Plane Height (**P**)	10. mm ≤ **P** ≤ 100. mm above the support surface		
2e	Loading Points	20. mm and 40. mm on either side of center in the same horizontal plane		
6a	Load Application Vertical Clearance	Loading plate and rod clearance at all load points from above and below		
2f	Symmetry	Bridge is symmetrical longitudinally and transversely (visual)		

FOR REFERENCE ONLY

This sheet does not replace the official rules and regulations, which can be found at www.bnl.gov/bridgebuilding

The measurements referred to in this presentation are based on the 2025 bridge specifications and are subject to change each year

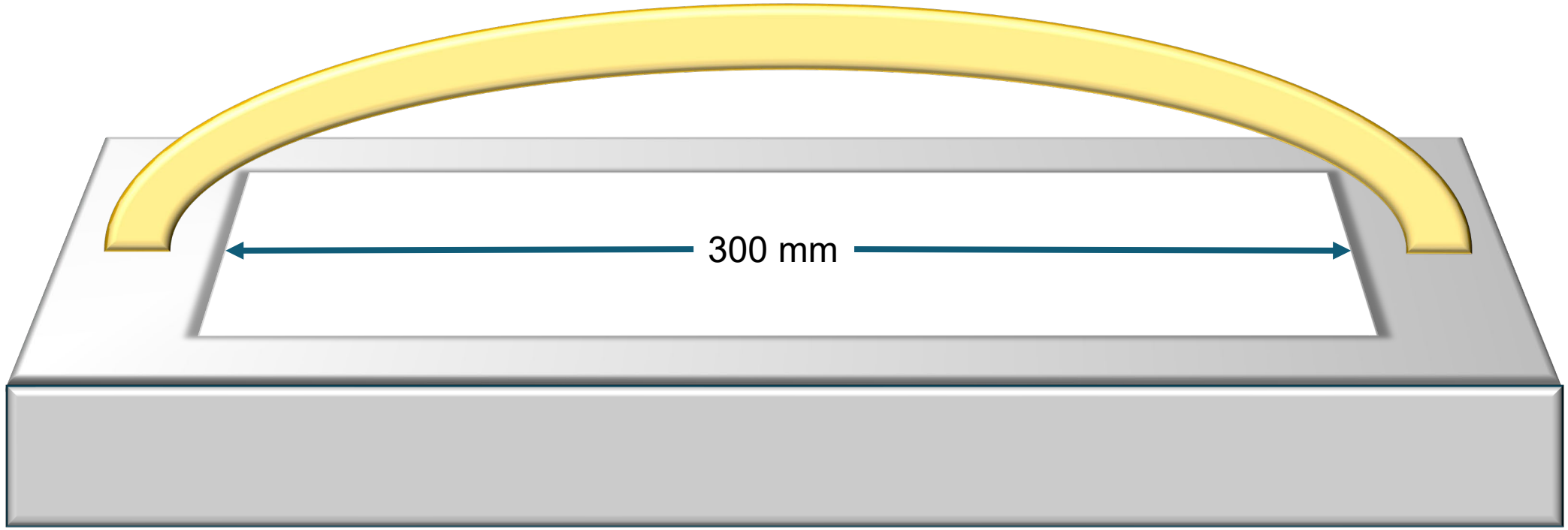
Checking Materials and Mass

- Your bridge will first be weighed on a digital scale
  - It must be 25g or less
- Engineers will confirm that it is made with 3/32-inch square basswood
- They will also check that it does not have a coating (stain, paint, etc.)

Checking the Bridge Span

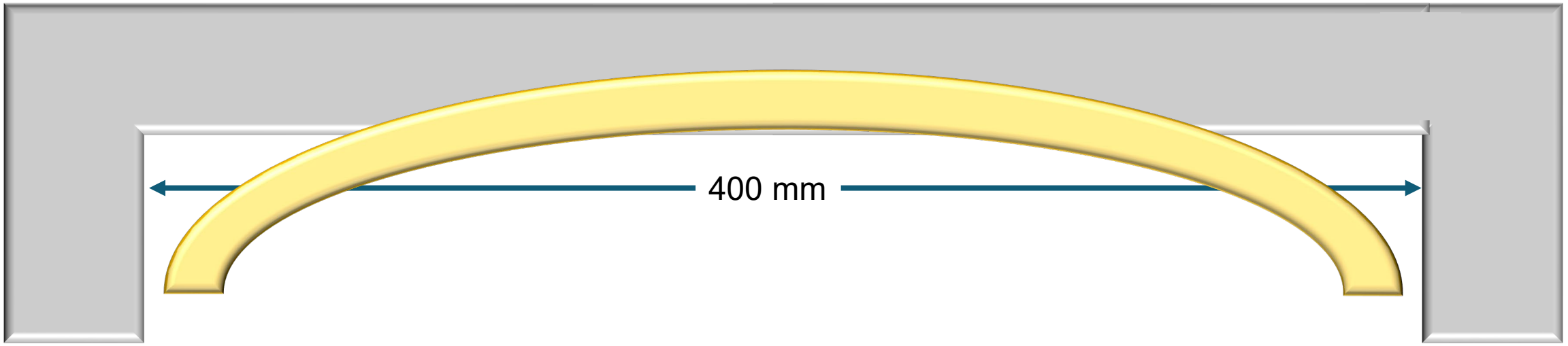
Your bridge must sit on this block without falling into the opening.

No part of the bridge can be below the opening on this block.



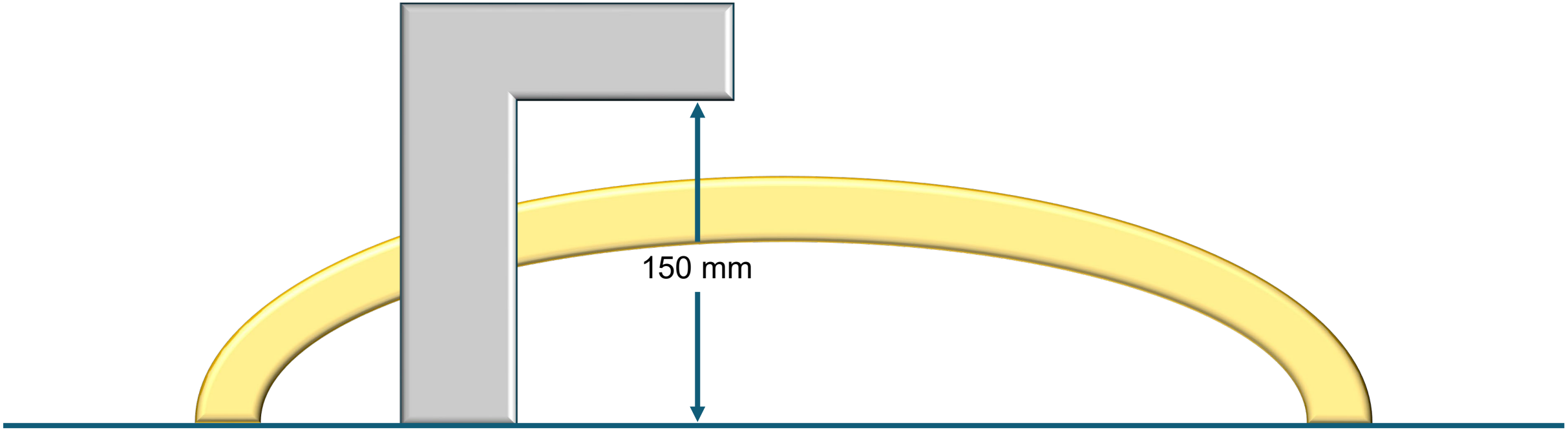
Checking the Bridge Length

The length of the bridge must fit between the two ends of the U shape.

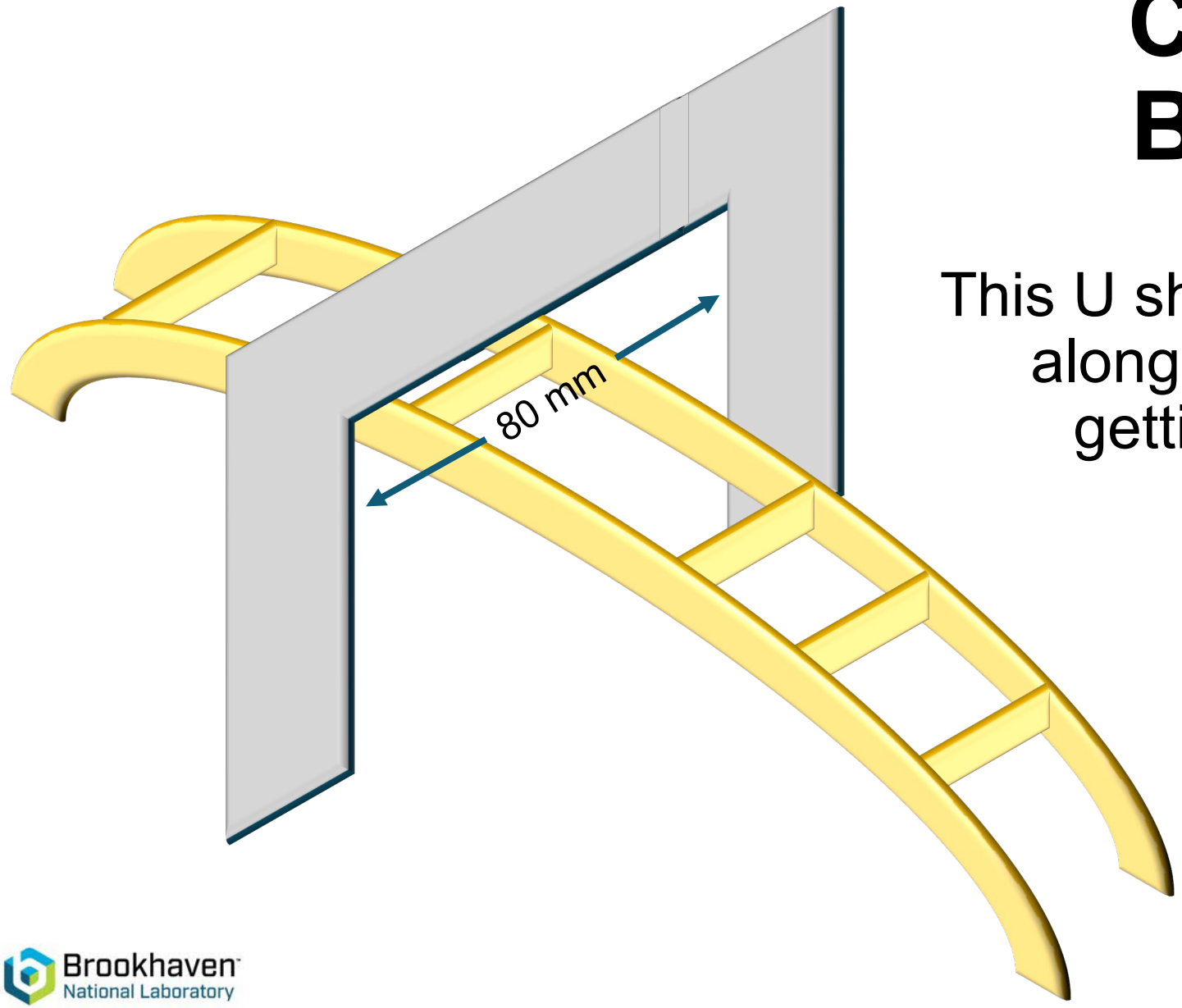


Checking the Bridge Height

The length of the bridge must fit under this shape at all points.



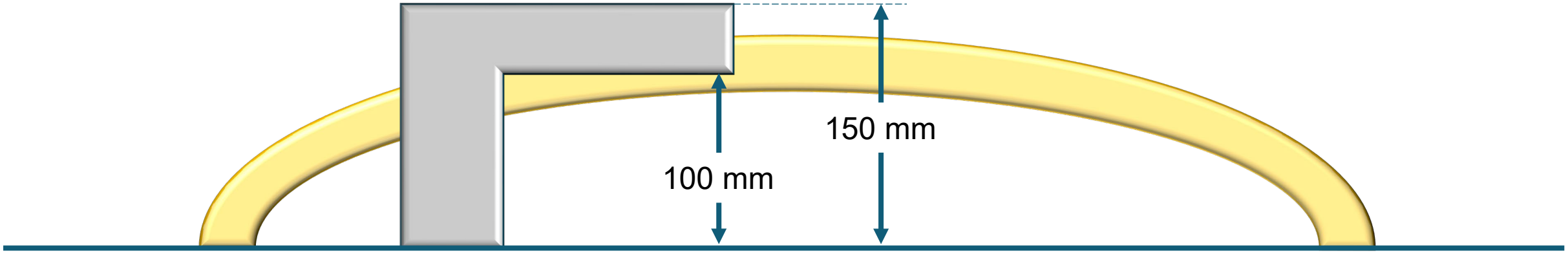
Checking the Bridge Width



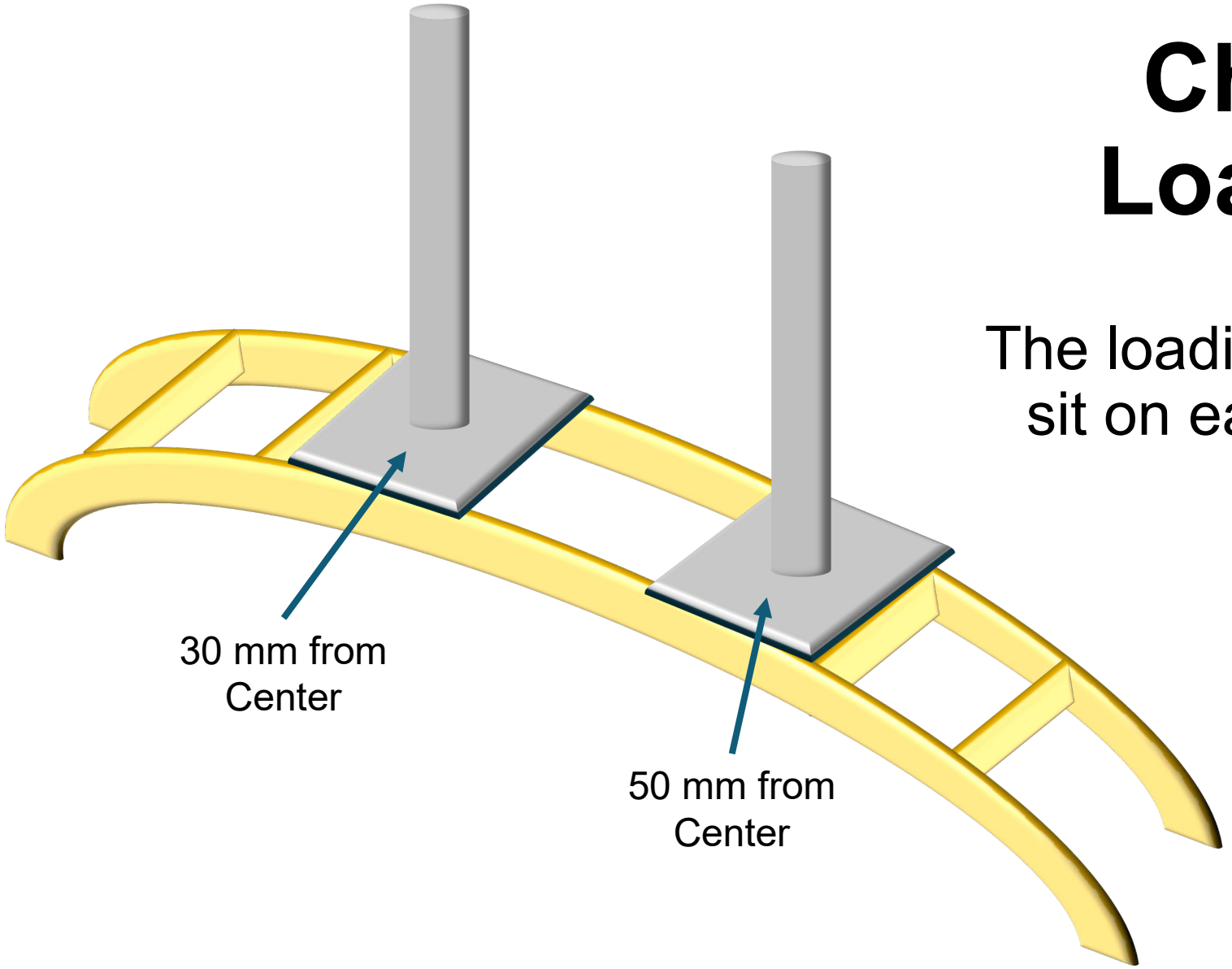
This U shape must be able to move along the entire bridge without getting caught on anything.

Checking the Load Plane Height

The top of the bridge (where the loading plate will sit) must be located **WITHIN** this shape (between 100 – 150 mm).

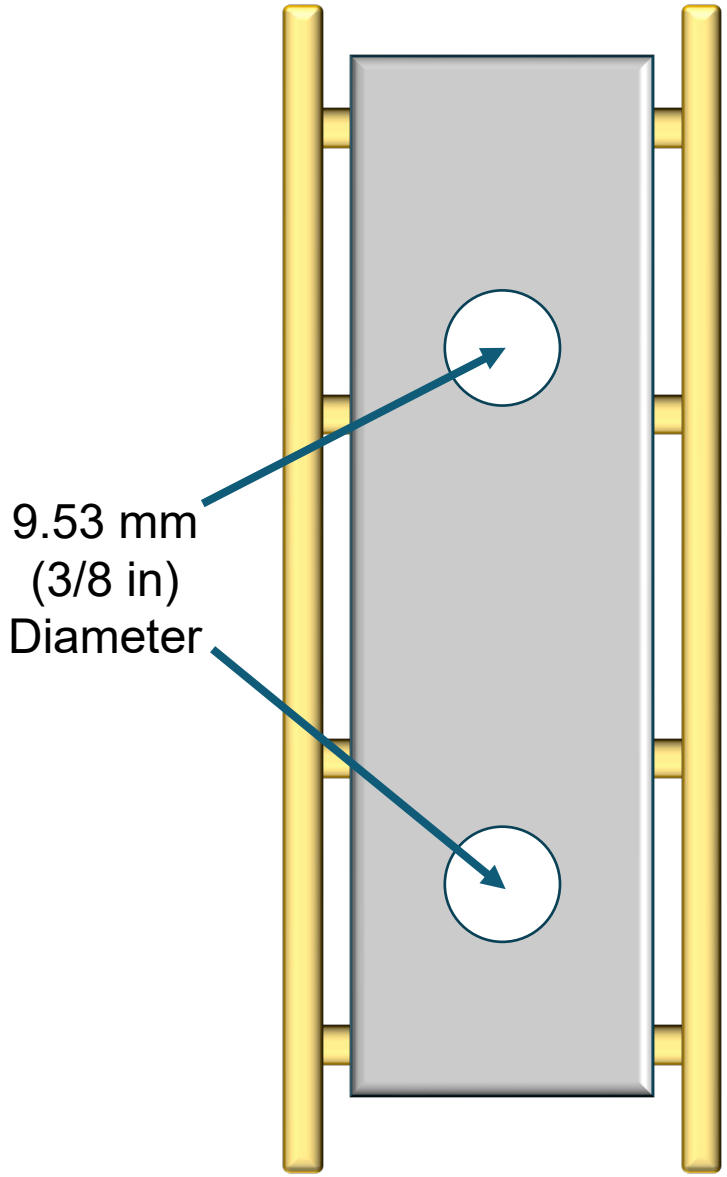


Checking the Loading Points



The loading plate must be able to sit on each of the loading points

These measurements can be from EITHER side of the center



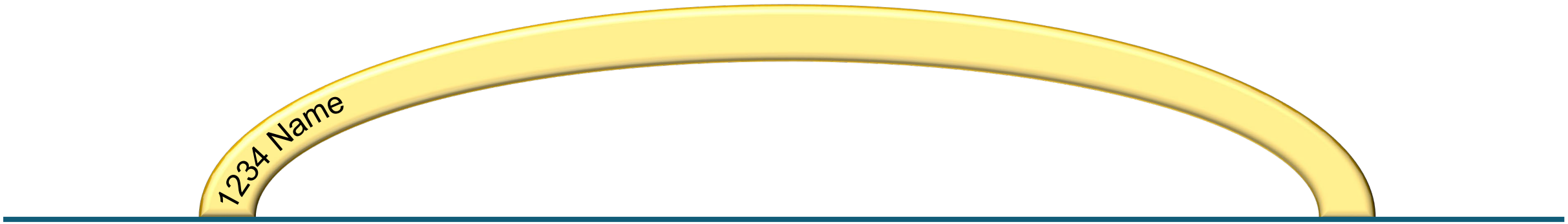
Checking the Loading Points

This shape with a hole at each loading point will be placed on top of the center of your bridge.

No parts of the bridge can be visible in the holes.

Checking the Symmetry

A visual inspection will confirm that the bridge is symmetric and that your name and bridge number are **legibly** written on the side of the bridge near the bottom



At the contest, efficiency is calculated by dividing the load supported by the mass of the bridge (i.e., how many times its own weight the bridge can support)

$$Efficiency = \frac{Load\ Supported\ (up\ to\ 50{,}000\ g)}{Mass\ of\ the\ Bridge\ in\ grams}$$

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