Hyattsville Volunteer Fire Department Training

Rescue Cribbing Module

Rescue Cribbing

- Cribbing is essential during rescue operations. In fact, cribbing is one of the most frequently used tools during vehicle rescue operations.

Unique Properties of Wood Provide Failure Warnings

- Growth pattern of Tree
- Rapid growth in spring deposits relatively soft fiber
- Slower growth rate in summer deposits more dense fiber
- If load end grain, crushing strength is determined by summerwood
- If load is on side (crossgrain), soft springwood determines strength
- Crossgrain bearing failure is slow & noisy - (gives warning)

Wood Cribbing

- Capacity based on crossgrain bearing area of system
- Allow stress varies from 200 to 1000psi for wood species
- For 2 member x 2 member crib 4x4 capacity = 24,000# (500psi)
  6x6 capacity = 60,000#
- Limit Height to Width to 3 to 1
- Overlap corners by 4” to assure slow, crushing failure
- Crib can crush as much as 20%

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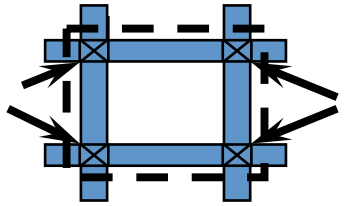
Wood Joint with Good Performance

4x4 Cribbing w/ 4 Bearings

6000# each contact

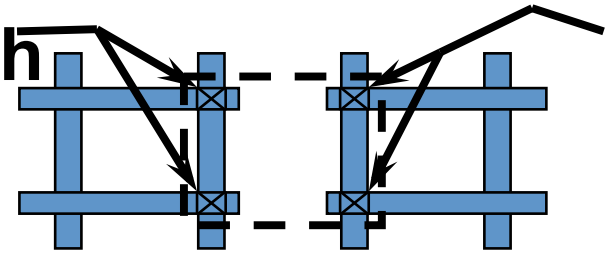


6000# each contact

Load on all corners

Most Stable - Ht to W = 3 to 1 max

6000# each contact



6000# each contact

Poor choice since loading is non-uniform

Keep Ht to W within 1 1/2 to 1

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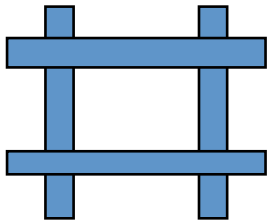
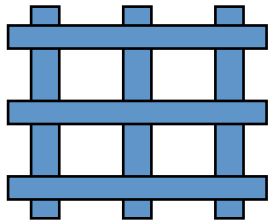
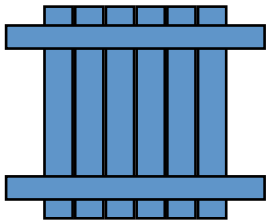
Cribbing Layout



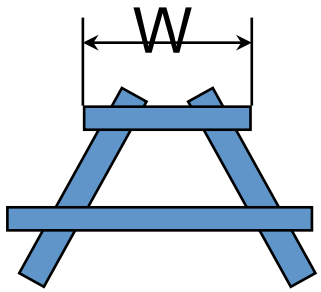
2 X 2



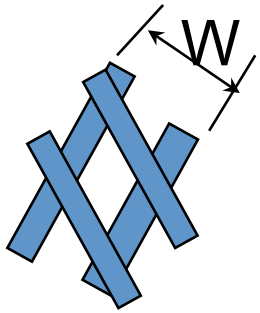
3 X 3



Solid Bearing



Triangle



Parallelogram

Both these not very stable. Keep Ht to W 1 to 1 max

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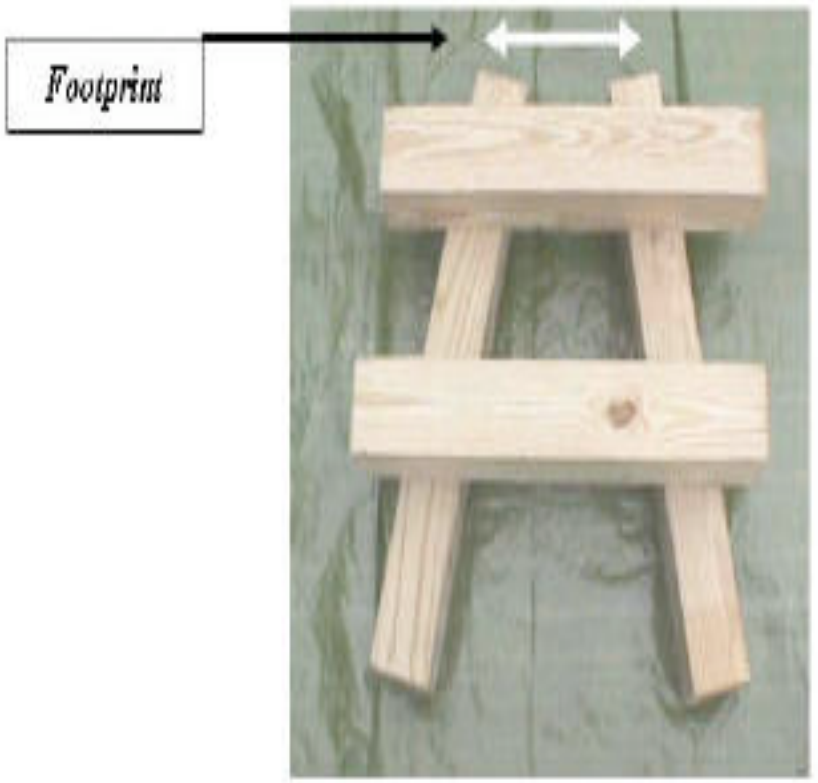
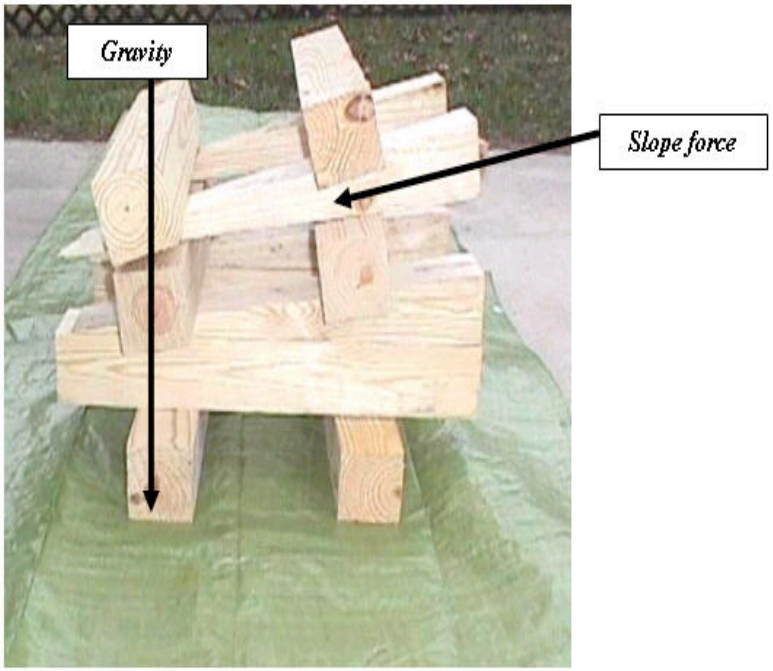
Stack Cribbing

- Stack cribbing height shouldn't exceed 3x it's footprint if all contact points are covered.



Sloped Loads

- Sloped loads have two primary forces acting upon them, gravity and slope force. Gravity produces a vertical load force while the slope force produces load acting down the slope. Stack cribbing may be used to a height of less than 3' against a sloped surface with an angle less the 15 degrees.



Wedges used to provide a sloped stack crib

Cribbing Safety

- When placing cribbing pieces, **never** put a part of your body between the load and the cribbing. Use a tool or another piece of cribbing to maneuver it into place. During cribbing operations the use of personal protective equipment is necessary to ensure safety.