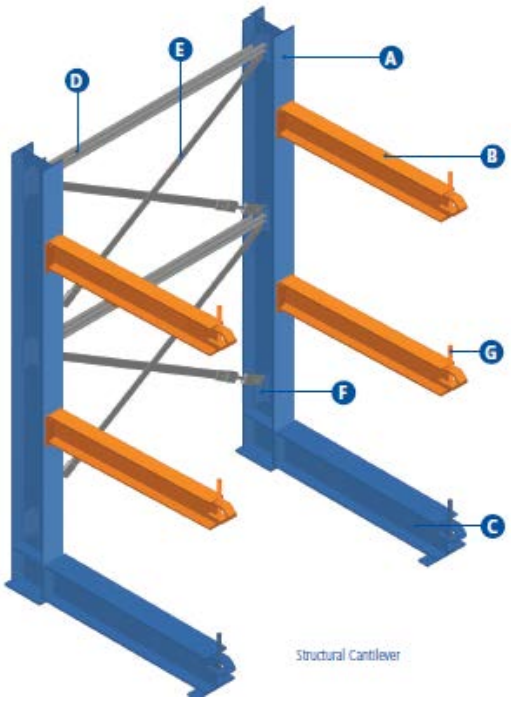
Cantilever is a pallet rack system that is specifically design to manage or store items with a varying length and proportion such as metal beams, tubes, pipes, metal and plastic sheets, wooden crates/boards, stone plates or raw stock, molding, and other wide range of materials. Cantilever consists of columns connected with horizontal and X braces. A series of arms are attached to the

columns (uprights) and loads are place on the arms. It is designed to store extra-long loads and are continuous with no vertical dividers. Weights and dimensions of the loads are necessary to consider when designing a cantilever system. Cantilever can be a single sided shelving that can only hold on one side like pictures above or double sided shelving that can be loaded from both sides like picture below.

ADVANTAGES:

- Simple assembly with few components
- More Flexible and Efficient
- More Compact and more Selective
    - (materials are accessible immediately)
- Heavy and resistant to damage
- Open and adjustable design
- Less restrictive than other systems



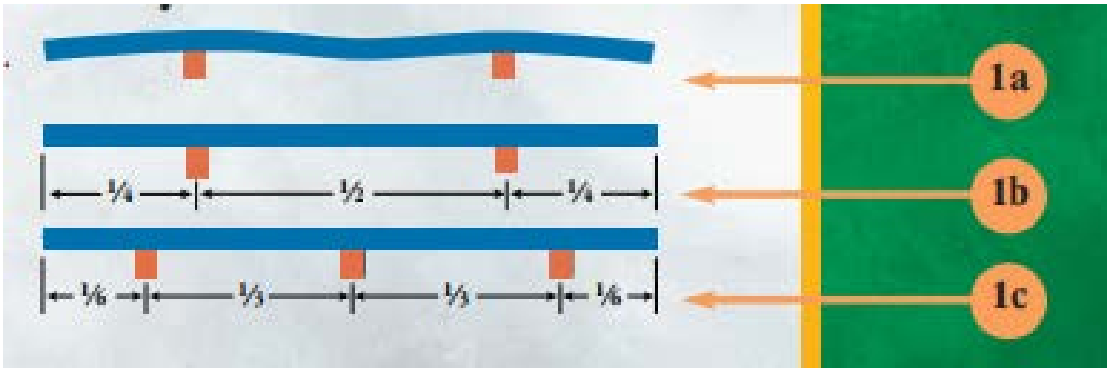
Components:

A. Column
B. Arm
C. Base
D. Horizontal Bracing
E. Cross Bracing (X-bracing)
F. Bolted Bracing Tab
G. Pipe Stop

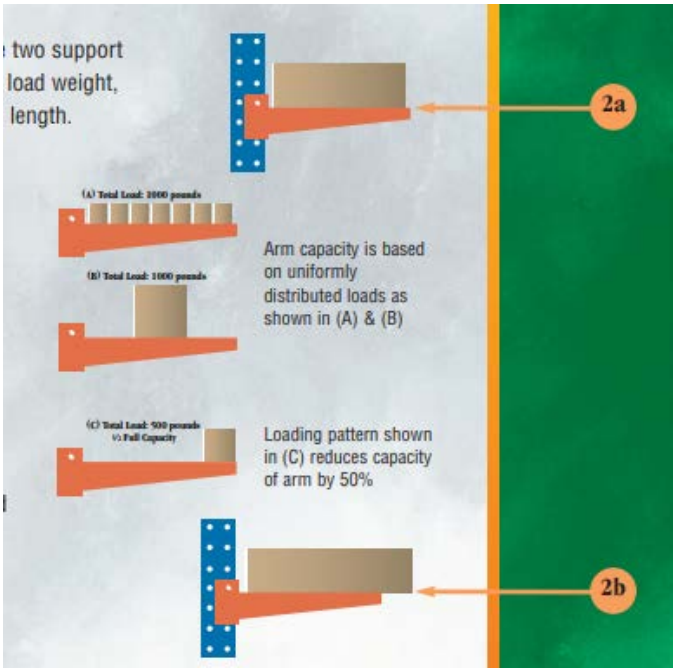
How To Design Your Cantilever Rack System

1. **Determine the number and spacing of support arms.**
    a. Use enough arms under a load to prevent deflection of the load.
    Deflection causes undesirable side pressure on the arms.
    Using wood blocks on the floor under the load, test your load for deflection on a two-support system.
    b. If you do not detect any deflection, you may use two support arms.
    The arm capacity required will be half the load weight, and the upright centerline will be 1/2 of the load length.
    c. If you notice deflection with two supports, try three supports.
    If this system works, arm capacity will be 1/3 of the load weight, and the upright centerlines will be 1/3 of load length.
    If three supports are still not enough, add supports as necessary until deflection is eliminated.

    Note: Product should overhang the end of the rack by 1/2 of the upright centerline distance. Loading without overhang is incorrect.



2. **Determine arm length.**
   Arm length should equal load depth. 2a is correct, 2b is incorrect.



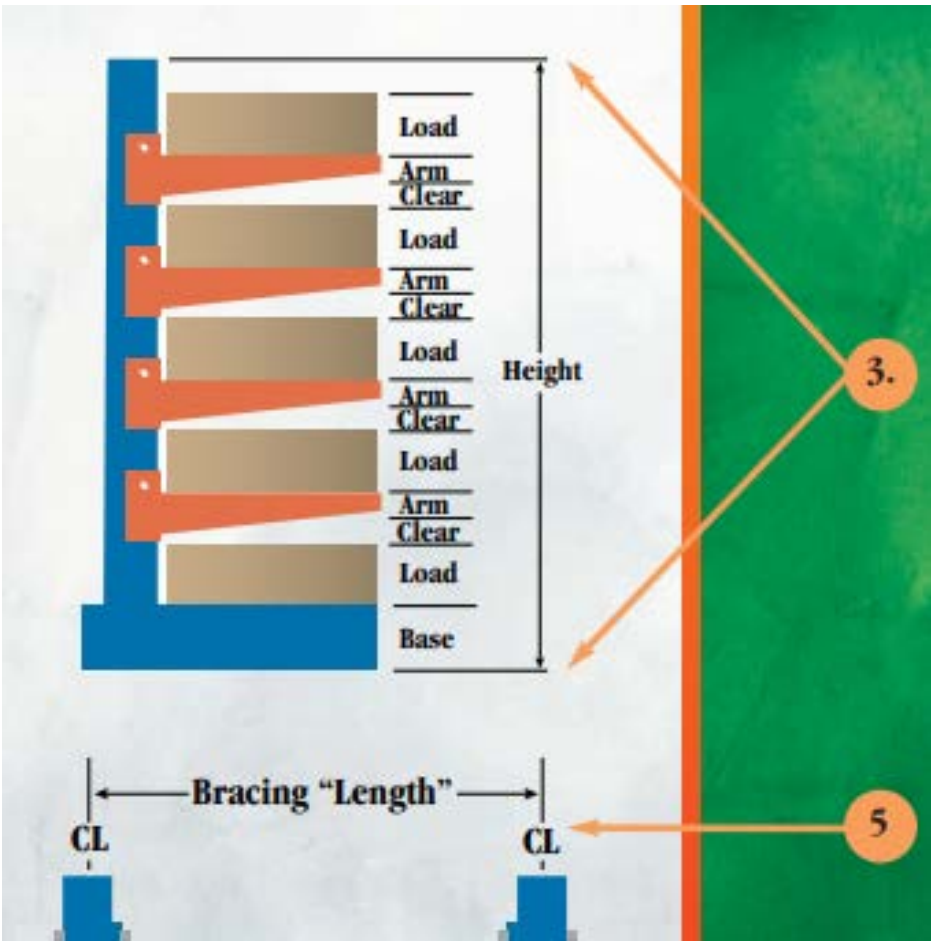
3. **Determine upright height.**
   Start with base height:
   + number of storage levels x load height
   + handling clearance [4”to 6”] x number of levels
   + number of arm levels x arm thickness = upright height.

   Note: Contact Pacific Western for current arm and base dimensions.
   Note: Check limitations at your plant such as ceiling clearance or fork lift height.
   Note: Top arm level must be below the top of the column.

4. **Determine capacities required.**
   Arms: Load weight ÷ number of arms per level = arm capacity.
   (Assuming each arm supports an equal amount of the load)

   Uprights: Number of arms per side x load per arm.
   Note: Load on base is not included in capacity

5. Bracing lengths" refer to the horizontal centerline distance from column to column, as in the diagram. See Step 1 for the proper number of braces per type of load. Bracing is sold in pieces, not sets.



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