Cantilever Work Sheet

LOAD

1. Describe the load: What is Product?   Example: Plywood / Bundles of Pipe / Loose Aluminum Extrusion

   _____

2. Length _____ Width _____ Height _____

3. Weight per bundle: _____

4. How many arms will be required to support load without deflection? _____

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ARMS

5. Inclined (20 degree incline)_____

6. Straight (3/8" per foot pitch to compensate for deflection)_____

7. Straight Arm w/lip_____

8. Pipe Sockets? _____

9. Length of Arm? _____

10. Capacity per Arm?_____ (# 3 divided by # 4) _____

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UPRIGHTS

11. Single Sided_____

12. Double Sided_____

13. Height_____ (Determined by forklift ht / ceiling ht / etc) Base length is determined by arm length…included with upright.

14. Base + how many arm levels? _____

15. Brace Length: _____(Determined by length of material divided by the # of uprights = brace length) 24, 36, 42, 48, 60, 72, 84, 96 Braces are on center of uprights.

WPR Cantilever Rack Design Sheet

## Personally Design a Cantilever Rack System to meet your Load Requirements.

Storage Information per Application:

1. LENGTH
4. TOTAL WEIGHT
3. HEIGHT
5. HORIZONTAL ARM SPACING
2. DEPTH
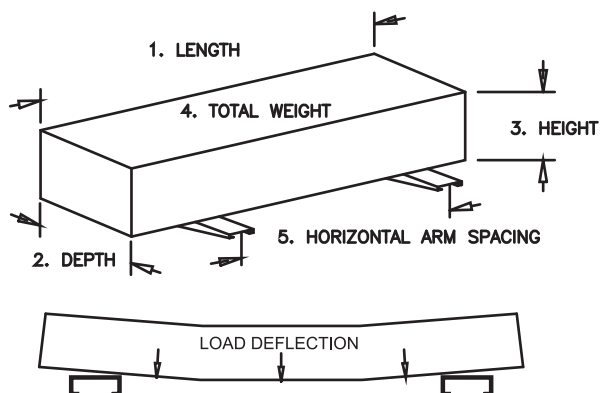
LOAD DEFLECTION

Load Deflection.
Determine number of Columns (Uprights).

Load deflection is characterized as the *sagging* of the load between the arms. Space blocks on the floor at an equal distance apart under the load until you have no sagging. Each block represents one arm. The arm will be connected to the upright to support the load.

LOAD
1/4   1/2 L   1/4
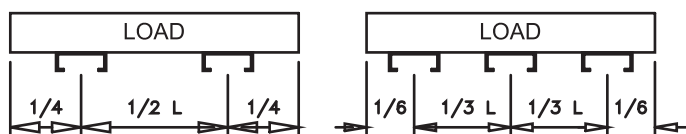
LOAD
1/6   1/3 L   1/3 L   1/6

For safe loads with two-arm support, the distance between the arms should be 1/2 the load and length.

Three arm support should be 1/3 the load length.

Arm Selection.
1. Divide the total weight by the number of arms, as required.
2. Match the load capacity required with the appropriate arm length and select proper arm from table. Arm length should equal load depth.

LOAD DEPTH
Correct Placement
ARM LENGTH

Incorrect Placement
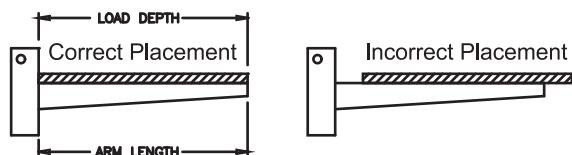
For your convienence:
- Contact West Point Rack for current arm and base dimensions.
- Check limitations at your plant, such as ceiling clearance and fork lift height.
- Top arm level must be below the top of Stanchion.
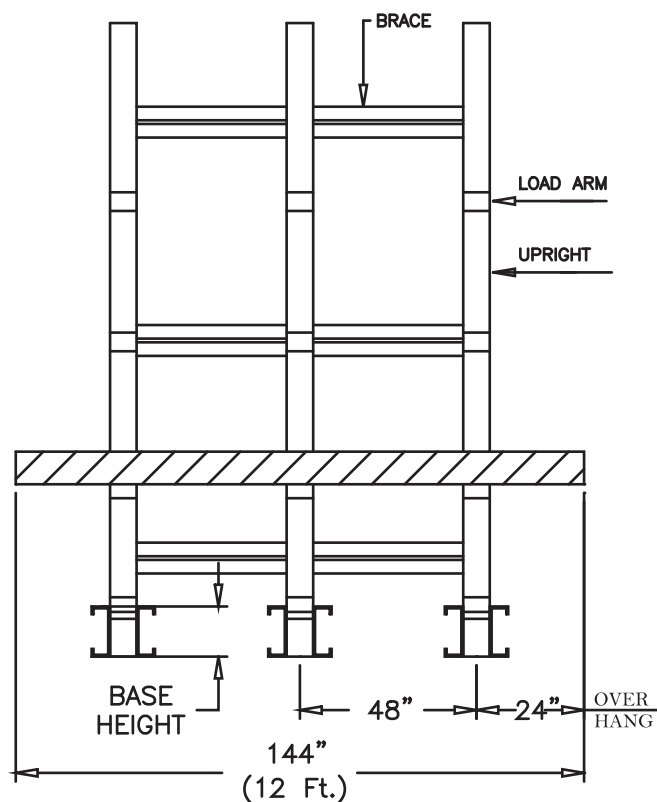
Intended Load.
1. Length:_____
2. Depth:_____
3. Height:_____
4. Weight:_____
5. Horiz. Arm Spacing:_____

Typical Cantilever Loading Frequency.
Customer must distribute the "load" (weight) evenly across (over) the number of arms used to support it.
The *over hang* should equal 1/2 the column spacing.
This will assure even loading on all arms.

BRACE
LOAD ARM
UPRIGHT
BASE HEIGHT
48"   24"   OVER HANG
144"
(12 Ft.)

Upright Capacity.
Do not exceed upright capacities. Count the number of arms to be used on upright; find arm capacity on "spec sheet" and multiply by number of arms per upright.
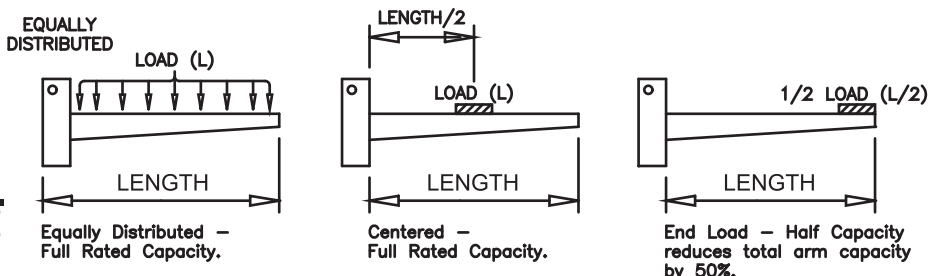
Determine Upright Height:
Start with base height.
+ number of storage levels x's load height,
+ handling clearance (4" to 6") x's number of levels,
+ number of arm levels x's arm thickness
= Upright Height

Arm Loading.
All capacities are based on uniformly distributed load.

EQUALLY DISTRIBUTED
LOAD (L)
LENGTH
Equally Distributed — Full Rated Capacity.

LENGTH/2
LOAD (L)
LENGTH
Centered — Full Rated Capacity.

1/2 LOAD (L/2)
LENGTH
End Load — Half Capacity reduces total arm capacity by 50%.

Worksheet

STRAIGHT ARM

ARM PIN

COLUMN

INCLINED ARM

SEE WORK AREA ON RIGHT

SINGLE BASE

DOUBLE BASE

BRACE

COLUMN CENTERS

NUMBER OF ARMS—SIDE 1

+

CAPACITY PER ARM (LBS.)

=

TOTAL LOAD — SIDE 1

NUMBER OF ARMS—SIDE 2

+

CAPACITY PER ARM (LBS.)

=

TOTAL LOAD — SIDE 2

+

TOTAL LOAD ON COLUMN

COLUMN CAPACITY

TOTAL LOAD ON COLUMN CAN NOT EXCEED COLUMN CAPACITY

SINGLE & DOUBLE SIDED CANTILEVER UPRIGHT