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Instruction Sheet

Super Stack Cribbing Blocks

1.0 IMPORTANT RECEIVING INSTRUCTIONS

Remove cribbing blocks from shipping container. Inspect for any visible damage, such as punctures, cuts, abrasions or cracking. For your safety, do not use cribbing blocks if damaged.

Shipping damage is not covered by warranty. If shipping damage is found, notify carrier at once. The carrier is responsible for all repair and replacement costs resulting from damage in shipment.

2.0 INTENDED USE

AME plastic cribbing blocks are designed to safely support and stabilize lifted loads.

3.0 PLASTIC CRIBBING SAFETY PRECAUTIONS

WARNING: Failure to observe the following safety precautions and instructions may result in serious personal injury or death.

• Cribbing must be constructed in accordance with standards and recommendations provided by U.S. government agencies such as FEMA, OSHA and the Army Corps of Engineers (or the applicable regulatory agencies in your country and/or municipality).

• Cribbing must be constructed only by trained and experienced personnel under the direction of a qualified technician or engineer trained in cribbing applications and safety.

• Do not use cribbing which is cracked, split, warped or obviously damaged. Never use chemically damaged cribbing.

• Do not allow personnel to climb or hang onto cribbing. Never use cribbing lanyards (straps) as grab handles or as a means of support. Cribbing could shift or fall.

• Never exceed the maximum capacity of the cribbing.

• Whenever possible, avoid intermixing wood, metal or other forms of cribbing with plastic cribbing.

• Be certain that the ground, floor or other surface is capable of supporting the combined weight of the crib structure and the load to be supported. Never build cribbing on loose or unstable ground.

4.0 INTRODUCTION

Cribbing is available in several different types and forms:

Metal cribbing may consist of devices such as jack stands, locking hydraulic cylinders or screw extension devices.

Wooden cribbing is the most common type of cribbing. It is available as softwood (southern yellow pine or Douglas-fir) and hardwood (oak or red maple).

Softwoods are typically used where lighter cribbing weight is desired. Softwoods often audibly and visibly crack just prior to catastrophic structural failure. Softwoods also readily absorb water, oil and other fluids.

Hardwoods are typically used where heavier loads are experienced. They do not visibly or audibly crack prior to structural failure and are less absorbent than softwoods.

Plastic cribbing is used when maximum crib stability and material durability are desired. Plastic cribbing deforms slowly under loads and usually does not fail catastrophically. Plastic cribbing also does not absorb most common fluids. However, it is important to reference chemical compatibility sources for the type of plastic that the cribbing blocks are manufactured from (typically HDPE) and its reaction to the fluid in question.

For wooden and plastic cribbing, individual pieces of cribbing are typically referred to as “cribbing blocks” and the structures or stacks are commonly described as “cribs.”

Important: Whenever possible, avoid intermixing cribbing types. Due to differences in material compression and coefficient of friction, extreme care must be exercised when intermixing wooden or metal cribbing with plastic cribbing.

5.0 CRIB BUILDING GUIDELINES

5.1 Crib Construction Types

When properly built, cribs transfer the load perpendicular to the cribbing blocks, resulting in an even compression of the crib.

Cribs are built using three basic construction methods:

• Box Cribs • Parallel Cribs • Triangle Cribs

Box cribs are commonly constructed using either a “2-point” or “3-point” crisscross of cribbing blocks positioned at 90-degree angles. The arrangement may be square or rectangular. Whenever possible, cribs should be built in square or rectangular shapes to maximize load capacity, stability and safety.

Parallel cribs are similar to box cribs except that the crisscrossed cribbing blocks are not placed at a 90-degree angle. This configuration is inherently less stable than a box crib and is typically used only when space limitations do not allow room for a box crib.

Triangle cribs can be used when there is not enough room for a box or parallel crib. This method provides the least stability, but may be the only solution if space is especially limited.

5.2 Height-to-Width Ratios

As a general rule, the box crib stack height should not exceed 2.5 times the length of the cribbing blocks used to build the crib stack. Some examples:

• AME 18" long 15210 cribbing blocks can be used to build a 2-point crib structure that is up to 45" [114 cm] tall.

• AME 24" long 15230 cribbing blocks can be used to build a 3-point crib structure that is up to 64" [162 cm] tall.

Refer to Figure 1 for additional information.

Important: Height-to-width ratios for parallel and triangle cribs should be kept close to a 1:1 ratio, because the geometries provide less stable support than box cribs.

5.3 Support Capacity

Never exceed the maximum load rating for the cribbing blocks or cribs. Refer to Table 1 for capacities and related information.

If a load to be supported exceeds the maximum capacity of one crib structure, additional crib structures must be built to support the object. Limiting factors for crib structures include:

1) The available area under the load to construct a properly built crib. 2) Surface stability of the ground or floor under the crib.

When using more than one crib to support an object, be sure that the weight of the object is evenly distributed across all cribs.

WARNING: Do not exceed maximum load ratings for cribbing. If the crib is loaded to the point that the cribbing blocks are fracturing, splitting or cracking, the maximum load rating has been exceeded and a **dangerous situation** is present. As required, build an additional crib or cribs to support the load.

Crib structures can compress as much as 10 to 20 percent under load. For this reason, it may be necessary to “overbuild” the crib structure(s) taller to allow for the compression that will occur under heavy load conditions.

Important: Loaded crib structures should be inspected at least once a day to assure continued tightness and stability.

Excessive heat can cause the plastic cribbing material to creep, resulting in diminished load carrying capacity. Extreme cold can cause the cribbing material to fracture prematurely.

Important: Do not use AME plastic cribbing blocks at temperatures below -40°F [-40°C] or above +284°F [140°C].

5.4 Crib Building - General Instructions

AME plastic cribbing blocks contain both interlocking and pyramidal surfaces. This allows two distinct methods for building crib stacks:

1) Interlocking surface - Mechanically interlocking the cribbing blocks in pre-cast notches (all except 2" x 4" x 18" size) helps ensure maximum structural integrity. Using the “box crib” method, cribbing blocks are stacked at 90-degree angles. See Figure 1.

2) Pyramid surface - When constructing parallel and triangle cribs, a combination of gravity and surface friction maintains the structure. Using this method, cribbing blocks may be stacked at angles other than 90 degrees. See Figure 2.

On the 4" x 4" x 18" and 6" x 7" x 24" sizes, the blocks can be arranged using either the pyramidal (pyramid textured) or interlocking (notched) sides as the weight-bearing surface. When building a crib that does not have a rectangular shape, the pyramidal surface must be used as the weight-bearing surface.

When using the pyramidal surface, ensure that there is sufficient overlap at the crib corners. Corners of the crib should overlap by the longest dimension of the crib face that is being loaded. This will assure the desired failure mode (characteristics) in the event that the crib is overloaded.

WARNING: Be certain that the crib structure will be capable of holding the total weight of the object being supported. Build additional crib structures if required to adequately support the total weight of the object.

WARNING: Do not build a non-rectangular crib that is more than 20 degrees out-of-square. Without a mechanical stop, friction and gravity will not hold the crib together.

All cribs must be positioned on a flat and stable surface. When necessary, wedges must be used to help stabilize and level the crib so that when loaded, the top surface is level.

Lift the object to be cribbed in a safe manner, using appropriate lifting devices. Whenever possible, build the crib to the desired height and then lift the object in place on top of the crib. If this is not possible, use the stage lifting method (“lift an inch, crib an inch”) to build the crib.

WARNING: Never work under an object that is not supported by a sufficiently robust crib structure.

5.5 Shoring (Supporting a Sloped Load)

Whenever possible, the load should be positioned perpendicular to the top surface of the crib. However, if the load must remain sloped, build the cribbing into the load using thinner cribbing blocks and/or wedges.

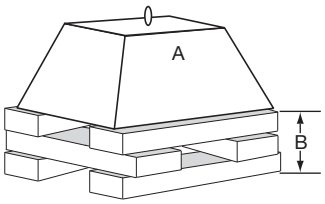
Always observe the following requirements when shoring sloped loads using AME plastic cribbing blocks:

1) The load should be centered on the middle third of the crib structure to ensure stability and load transfer into the floor or ground. 2) Slope force must be resisted by friction. 3) The base layer of the crib structure must be solid.

5.6 Chocking (Supporting a Load that is Not Flat)

Objects that are not flat can be supported by a crib. However, they must be properly chocked or wedged in place to eliminate undesired lateral movement.

Note: The Shoring Operations Guide (SOG), published by the U.S. Army Corps of Engineers, is a suggested reference. It contains detailed instructions, recommendations and precautions regarding proper shoring and chocking procedures.

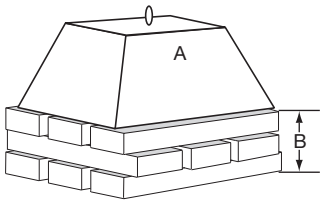


15200

2-Point Stack

A - Max. Weight:
30 tons [27215 kg]

B - Max. Stack Height:
36 inches [91 cm]



3-Point Stack

A - Max. Weight:
70 tons [63502 kg]

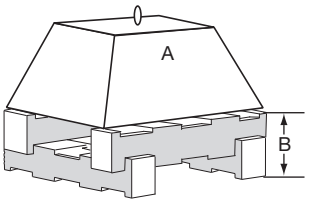
B - Max. Stack Height:
40 inches [102 cm]

15210 / 15220

2-Point Stack

A - Max. Weight:
30 tons [27215 kg]

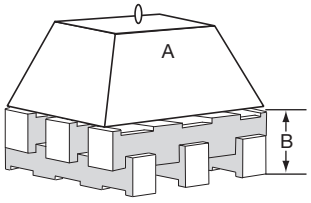
B - Max. Stack Height:
45 inches [114 cm]

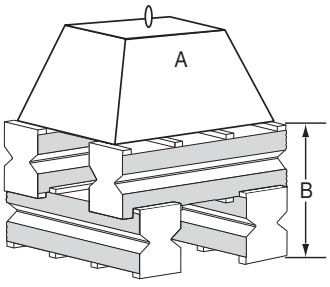


3-Point Stack

A - Max. Weight:
70 tons [63502 kg]

B - Max. Stack Height:
48 inches [122 cm]



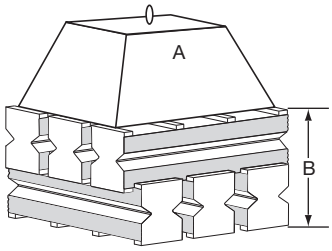


15230 / 15240

2-Point Stack

A - Max. Weight:
60 tons [54,431 kg]

B - Max. Stack Height:
57 inches [144 cm]

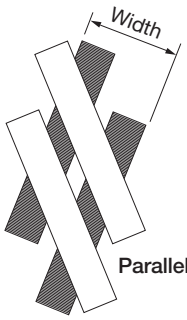


3-Point Stack

A - Max. Weight:
100 tons [90,718 kg]

B - Max. Stack Height:
64 inches [162 cm]

Figure 1, Box Stacking Arrangements (typical).



Important:

- Reduced stability compared to box stacking.
- Keep height-to-width ratio within 1:1.
- Do not build more than 20° out-of-square.

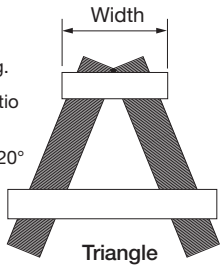


Figure 2, Alternate Stacking Arrangements (typical).

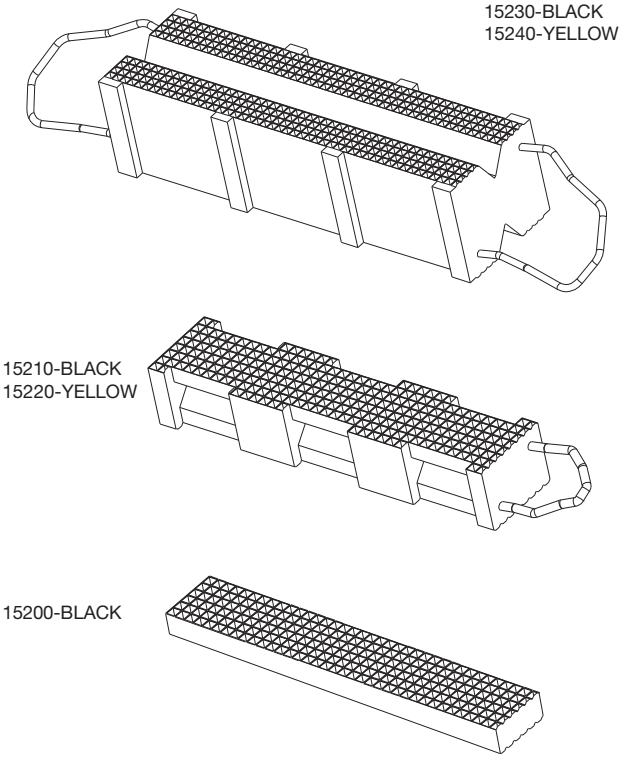


Figure 3, Cribbing Blocks.

Table 1 - Cribbing Block Specifications

Block Model	Nominal Crib Block Dimensions inches	Single Crib Block Capacity tons [kg]	Max. Stack Height and Weight
15200	2 x 4 x 18	40 [36287]	(See Figure 1)
15210 / 15220	4 x 4 x 18	40 [36287]	
15230 / 15240	6 x 7 x 24	60 [54431]	

NOTE: Measured crib compression at maximum capacity and stack height is 2 inches [50 mm] at 70°F [21°C] with no cracked blocks. Ratings are based on a full press load in which the load is evenly distributed across the crib stack using a 1 inch [2.5 cm] steel plate (typical) to spread the load.

Do not load any localized area of a crib or cribbing block at more than 1600 psi [112 Kg/cm^2].

6.0 INSPECTION

It is strongly recommended that the cribbing blocks be inspected before and after each use. Refer to the following steps:

1. Inspect the cribbing blocks for cuts, gouges and other visible damage. Do not use blocks with obvious structural damage.
2. Cribbing blocks will compress and retain the set. If compression exceeds 20 percent of the cribbing block cross dimension, or is greater than 2 inches [50 mm], closely inspect for fractures, splits or cracks.
3. If a cribbing block fractures during use so that splits and cracks are visible, mark the damaged cribbing block and (if safety allows) remove it from service at the earliest possible time. The load will first need to be removed from the crib so the block can be replaced.
4. Cribbing blocks damaged by chemical exposure should be removed from service. Recycle or properly dispose of such blocks. Swelling, melting, powder residue or other non-mechanical damage is evidence of chemical exposure.

Important: Keep chemically exposed cribbing blocks in a separate area to avoid migration of the attacking chemical into other non-contaminated cribbing blocks.

7.0 CLEANING

The cribbing blocks can be power washed to remove grit and dirt from their surfaces.

If foreign materials have become ground into the crib surface, or if the surface contains abrasions, cracks or cuts, the cribbing block should be removed from service and recycled.

Contaminated cribbing blocks that cannot be cleaned should be removed from service and disposed of.

8.0 STORAGE

To prolong their usable service life, store the cribbing blocks in a cool, dry area in an unloaded state. Do not store cribbing blocks outdoors.

Protect the cribbing blocks from freeze-thaw cycles. Store the blocks away from direct sunlight and other sources of ultraviolet (UV) radiation.

9.0 RECYCLING

AME cribbing blocks are manufactured from recycled high-density polyethylene (HDPE) and small amounts of polypropylene (PP). Contact your local recycler to dispose of damaged and unusable cribbing blocks.