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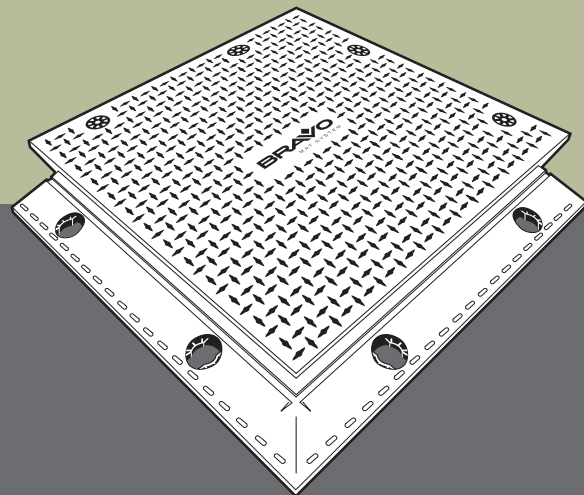
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# INSTALLATION & HANDLING MANUAL



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**BRAVO™ Mat System** is a personnel support product designed for temporary structure flooring, storage, walkways, maintenance pads, light rubber wheel travel, surface protection and harsh terrain access. The matting system consists of interlocking thermoplastic units that can be configured in multiple patterns for a variety of applications. The mats interlock by means of four twist-lock fasteners. The rubberized surface of each mat improves traction, while the interconnected system distributes weight and absorbs impact.

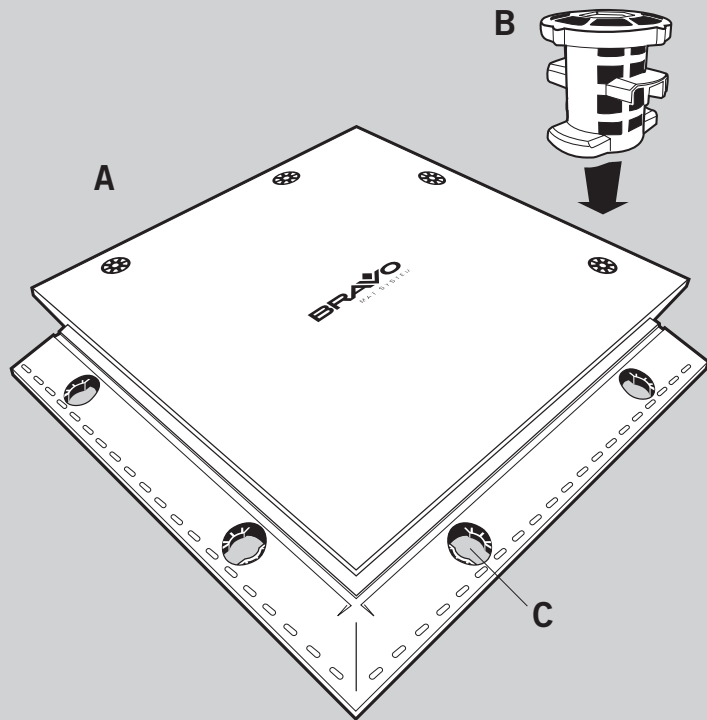
# BRAVO MAT FEATURES

## BRAVO MAT DIMENSIONS\*

CHARACTERISTIC	ENGLISH UNITS	METRIC UNITS
LENGTH X WIDTH	47.97" x 47.97"	1.22m x 1.22m
HEIGHT	2.75"	70mm
WEIGHT	50 lbs	22.70 kg

\*Measurements and weights nominal

BRAVO Mats provide a nominal 12.25 square feet (1.14 square meters) of usable surface with an overlapping and interlocking lip of 6 inches (152 mm) on the perimeter. Four pre-installed twist-lock fasteners insert into holes in the receiving edge of the adjacent mat and are locked into place with a 90° turn. A 1" allen wrench is required to lock and unlock the fasteners. A waist high T-handled wrench is available from COMPOSITE MAT SOLUTIONS, specially designed to speed installation and removal by reducing physical strain. Individual twist-lock fasteners can be replaced as needed.



- A. BRAVO Mat
- B. Self-Retained Twist-Lock Fastener
- C. Fastener Hole

# INSTALLATION & REMOVAL

## SITE SELECTION

Several factors may impact the number of mats required and the final configuration of your site including: soil conditions, duration of the project, load-bearing requirements, number of passes, etc.

Select a site that is adequately elevated relative to the surrounding area to keep water from accumulating on the matted location. For level ground that requires matting, consider “crowning” or “turtle-backing” the site with fill dirt or other sub-grade preparation where available in order to facilitate drainage of water to the perimeter of the matted location. Seek out the highest elevation for the matted site, whenever possible. In extreme conditions, additional layers of mats may be installed as a further precaution to provide extra

## MAT SYSTEM ASSEMBLY

BRAVO Mat units are designed to interlock and form a tight and secure load-distributing surface. The fully reversible mats have finished surfaces on both sides for extended utility and service

Figure 1

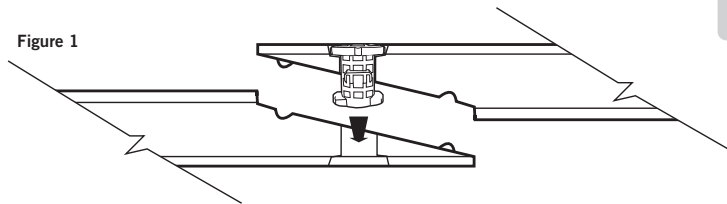


Figure 1 Fastener insertion detail

Figure 2 Fastener Detail (top)

Figure 2



Figure 3

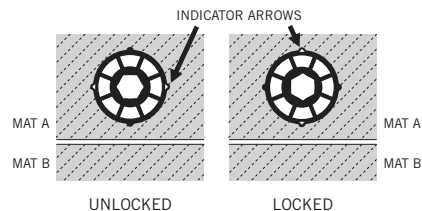
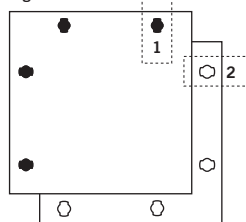


Figure 3 Fastener Detail (side)

Figure 4 Illustrations throughout this manual indicate the presence of a twist-lock fastener by a darkened shape (1). An open fastener slot is indicated by an outlined shape (2).

Figure 5 Self-Retained Twist-Lock Fastener

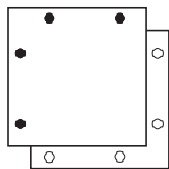
Figure 4



First, lay one mat down, noting the open-hole sides and fastener-equipped sides. Make sure the twist-lock fasteners, holes and lips are free of debris prior to placing the next mat, to ensure a smooth and secure fit. The next mat should be placed alongside the first mat with the fastener-equipped top lip indexed to the first mat's open-hole lip. Engage the locking-fastener with a 1/4 turn of the hex-head tool.

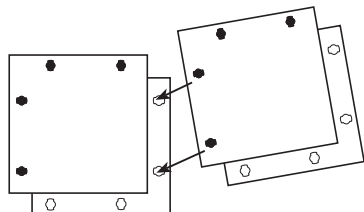
To maintain the safety and integrity of the matted surface, make sure all of the twist-lock fasteners are in the locked position. We do not recommend laying the mats in a loose (non-fastened) formation.

**STEP  
1**



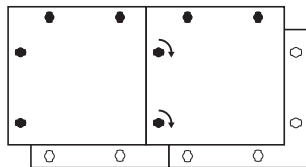
Lay first mat into position

**STEP  
2**



Index second mat to edge of first mat

**STEP  
3**

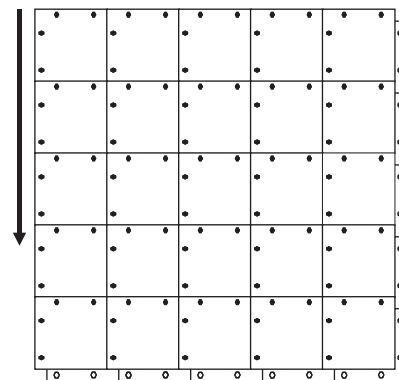


Lock twist-lock fasteners with 1/4 turn

## TENT SITE AND PAD INSTALLATION

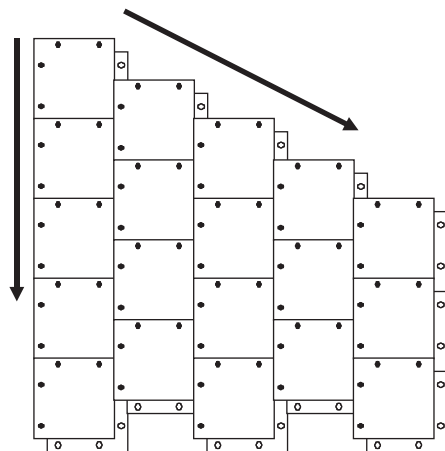
BRAVO Mats can be fastened together to cover large surface areas to be used as tent sites, staging areas or pathways. Stake out the proposed site and lay one row of mats along one edge of the location (orient open-hole edge of mat toward the center of the location), locking the mats together as each one is laid down. As you work outward from the first row, index the subsequent mats to the beveled edge of the previously laid mat, locking the twist-lock fasteners as you go. Repeat the process on the subsequent rows until the site is

(1)



**Figure 6** Basic Pad Configuration

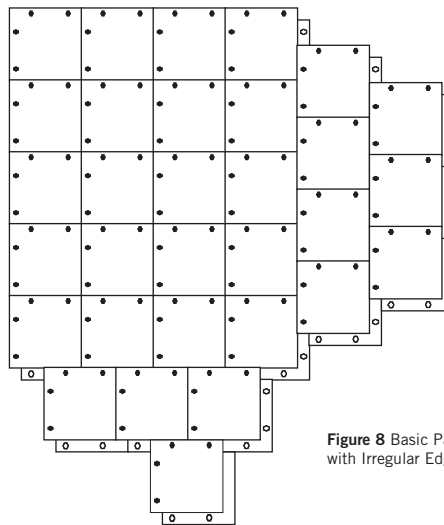
*Lay mats from point (1) in direction of arrow, then lay second column, continuing toward center of site design in the direction of top arrow.*



**Figure 7**  
Angled Pad  
Configuration

*Staggered pad  
configuration  
with angled  
edges.*

To angle any edge of the pad design, you may use a staggered configuration to economize mat usage. Just like brickwork patterns, the staggered configuration places one mat across the edge of a placed mat with 1/2 overlap, so that the seam of two adjacent mats is centered on the next installed mat. Then, in decreasing numbers, lay one row after another until the desired angle is achieved. The mats should be placed so that the lips of the laid mats are always indexed to the lips of the adjacent mats.

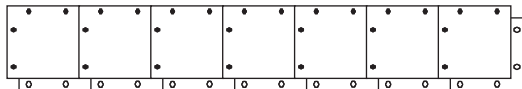


**Figure 8** Basic Pad Configuration  
with Irregular Edges

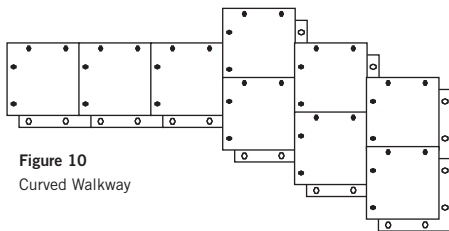
We recommend that you anchor your BRAVO site if a tent or temporary structure will be installed on it. Do not anchor tents or equipment to the mats or mat network. Tents and equipment should be anchored independently to the subsoil or other permanent structure. Anchor your BRAVO site and the equipment resting upon it, particularly if high winds, extremely unstable soil conditions, or steep grades persist.

## WALKWAY INSTALLATION

For pathway installation of one mat width, join mats end to end along the predetermined route, securing them with the locking-fasteners as you proceed. Gentle curvature of the path can be achieved by pushing/pulling the assembled mats in the direction of the curve. By staggering the mats, you may also achieve directional



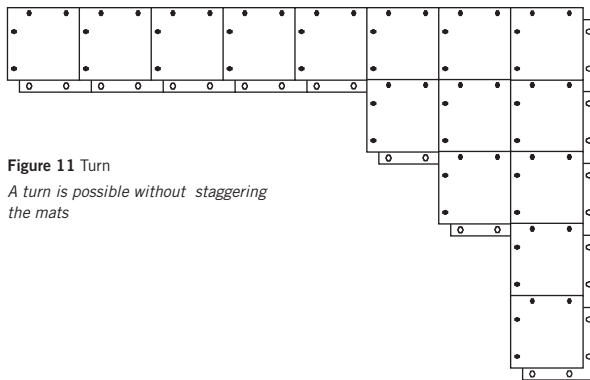
**Figure 9** Straight Walkway



**Figure 10**  
Curved Walkway

Turns, aprons, wings or transitions can be built out from a path terminus by attaching a mat row to the flanking edge of the last mat. The interior of the formation can be filled in with the appropriate number of mats.

**Figure 11**



**Figure 11** Turn

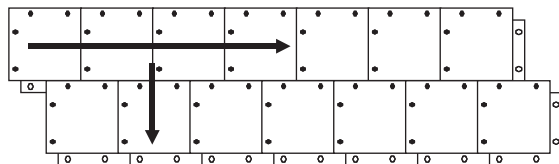
*A turn is possible without staggering the mats*

For a walkway with a desired width of more than one mat, consider using a staggered alignment of the mat seams to increase the stability of the mat pathway and to allow the mats to conform more uniformly to underlying terrain (see information on “Double-Width

## DOUBLE-WIDTH WALKWAYS

A two-mat wide longitudinal road (or wider) can be installed by laying mats end to end in two parallel but staggered lines so that the mats resemble brickwork. The staggered configuration places one row of mats across the edge of the placed mats with 1/2 overlap, so that the seam of two adjacent mats is centered on the mats in the next row installed. The mats should be placed so that the lips of the laid mats are always indexed to the lips of the

Figure 12



Double-Width Walkway

Arrows indicate direction of mat laying sequence. Left column must always remain at least one mat ahead of right column to continue overlap.

## BASIC REMOVAL

It is imperative that you unlock the twist-lock fasteners before disassembling the mat system. Failure to do so may result in damage to fasteners or

To remove the mats, the process is reversed, beginning with the last mat set into position. Unlock the twist-lock fasteners of each mat prior to removal with a 1/4 turn. Do not unlock the twist-lock fasteners of other mats until you are ready to remove them, in order to maintain the strength and integrity of the remaining mat system. Lift and remove the overlapping mats, one at a time, in a systematic procedure to maintain even and orderly disassembly of the matted

## OTHER SITE-BUILDING TECHNIQUES

For level ground that requires matting, consider “crowning” or “turtle-backing” the site with fill dirt or other sub-grade preparation where available in order to facilitate drainage of water to the perimeter of the matted location. Seek out the highest elevation for the matted site, when possible.

The use of geo-fabric should be determined before installing the mats but will not affect the techniques described previously in any significant way. Simply install the fabric over the site and then commence with the mat installation. You may find that installing and removing mats with the use of geo-fabric is a cleaner and more efficient process.

Customized pieces can be requested from the manufacturer to fit doorways or other permanent fixtures. Contact a COMPOSITE MAT SOLUTIONS representative for immediate response to any request. 1-877-MAT ROAD or (337) 896-8976.



## SAFETY AND MAT MAINTENANCE

Personnel should take the same safety precautions when working on BRAVO Mat units as they would at any other work site. If a fastener is damaged in such a way that it no longer can secure another mat, it should be replaced as soon as possible so that the mat grid does not shift. Shifting mats may prevent proper realignment and make disassembly more difficult. If a mat is punctured or torn by debris or equipment, the mat should be replaced immediately to prevent equipment loss or personnel injury.

If the mats become slick or if ice forms during cold weather, ordinary absorption, ice-melt and maintenance materials can be used to clear the surface for safe operation. To clean the mats, use water sprayed at low pressure to remove loose debris; commercial cleaning agents for plastic or painted surfaces may also be used.

## SPANNING WITH THE MATS

Spanning small gaps or minor surface undulations (< 20 inches across) is permitted based upon proper application of the matting system, but building a bridge with the mats is not recommended. The BRAVO Mat System is designed for use on a sub-grade or underlying surface.

## STORING BRAVO MAT UNITS

If you intend to store your BRAVO Mat units for any period of time, care should be taken to ensure that the ground is level and stable beneath the stack. Stack the mats to a recommended height of 20 units or 5 feet. Operators must judge the relative stability of each stack. Remove any debris from the mats that would result in an uneven stack. Be sure the mats are stored in an area away from high traffic or personnel.

## LOADING BRAVO MAT UNITS

When loading or unloading the mats, care should be taken to make neat, even stacks. A stack of 20 mats (roughly 5 feet or 1.52 meters) high is recommended. Operators should appraise safety and convenience factors before stacking the BRAVO Mats. Remove debris or any obstruction that would hinder the mats from resting evenly on top of each other or on top of any other surface. The mats should be secured before transporting them just as you would any other load of manufactured material. Contact safety managers or transportation personnel for specific details about how to properly secure the load.

## HANDLING PRECAUTIONS

The mats have been designed with safety features including nonslip surfaces, finished edges, and secure locking twist-lock fasteners. The fully reversible mats have finished surfaces on both sides for extended utility and service applications. However, each lip must correspond to the adjacent mat to create a secure fit. Take every ordinary precaution when installing, handling and using the mats by wearing the correct personal protective equipment (PPE) required for your particular task. Although one person can handle the BRAVO Mat units, we recommend you use two crewmembers to move and place the individual mats when possible. Forklifts, loaders or small cranes should be employed when moving



**Do not slide the mats into position while your fingers are wrapped around the fastener slots. Handling the mats in this way presents a pinch point for fingers and should be avoided or injury may occur.**

Contact a COMPOSITE MAT SOLUTIONS representative  
for technical support or customer service.

TELEPHON

**877-MAT ROAD**

OR (337) 896-8976

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**[www.CompositeMatSolutions.com](http://www.CompositeMatSolutions.com)**

## WARRANTY

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