



2626 South Sheridan • PO Box 17249 • Wichita, Kansas 67217
Phone: (316) 945-9328 • Fax: (316) 945-0789

**INSTALLATION INSTRUCTIONS
FOR BALCO, INC. FLOOR MATS
FMR-(A, C, or D)
W/MECHANICALLY FASTENED FRAME**

INSTALLATION INSTRUCTIONS FOR BALCO, INC. RECESS MOUNTED FMR-(A, C, or D) FLOOR MAT SYSTEMS

The following installation instructions are very important. Read them carefully, and be sure you understand them completely before you begin any work.

STORAGE & HANDLING

The floor mat frame may require some assembly. Store all mats and frames in the horizontal position in a clean, dry, flat and safe location. This is a finished product. Store this product in a protected area. Do not stack anything on the mats.

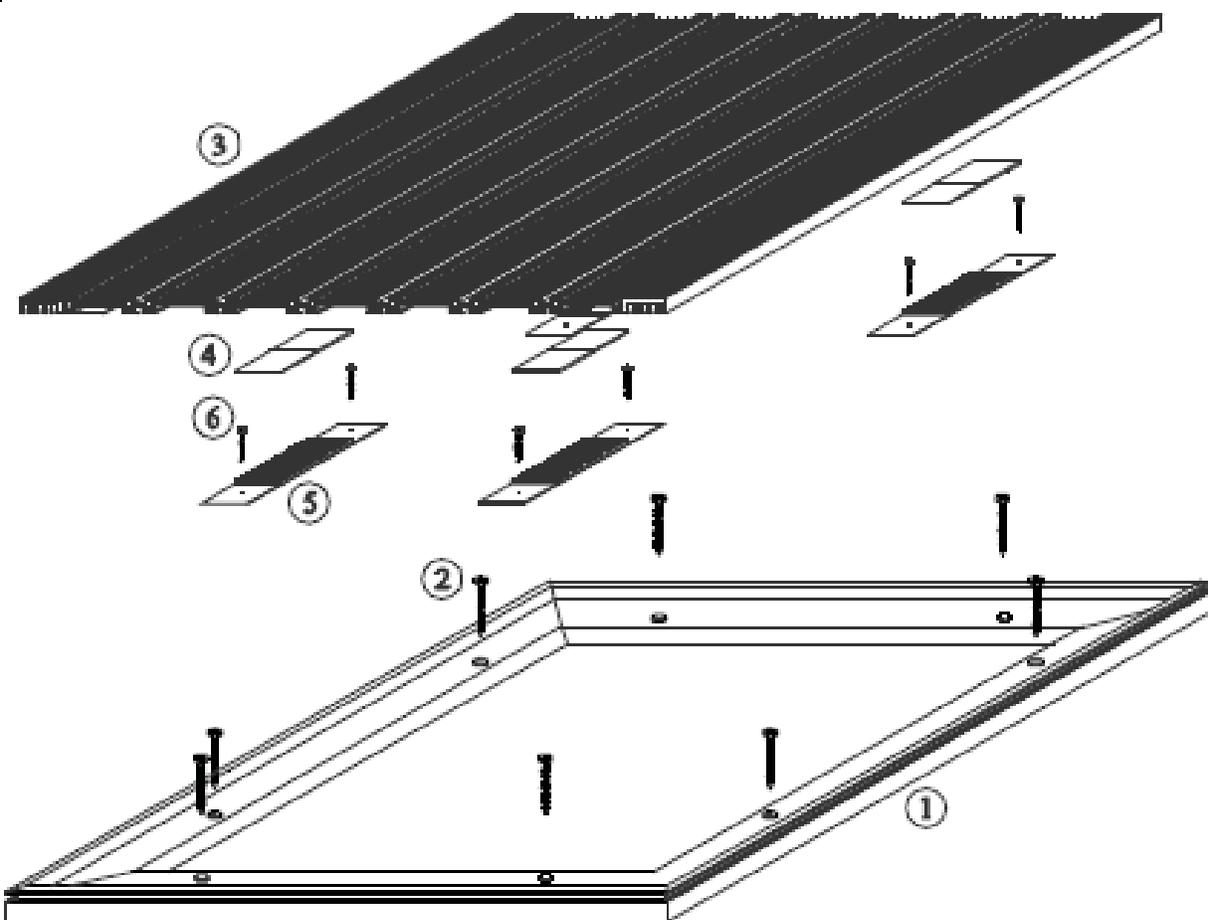


Figure 1

PARTS

1. Recessed Mat Frame
2. Frame Anchors
3. Recessed Mat
4. Flexible Lockdown Strip
5. Lockdown Plate
6. Lockdown Plate Anchors

TOOLS REQUIRED

This is a list of tools and materials recommended for use in the installation of these joint systems. Tools and materials in this list are not provided by Balco, Inc.

- A. Electric Drill
- B. Drill Bits for Metal

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|---|--|
| C. Drill Bits for Concrete | I. Bracing (Wood) |
| D. Tape Measure | J. Grout |
| E. Level | K. Clean Rags |
| F. Phillips and Slotted Screw Driver Bits | L. Trowel |
| G. Rubber or Leather Mallet | M. Utility Knife |
| H. Plywood Sheet(s) | N. Straight Edge (6' minimum is recommended) |

PRECAUTIONS AND RECOMMENDATIONS

- A.** To ensure a proper fit of the recessed mat, measure and confirm all dimension on the approved shop drawings before putting bracing (wood) or any support in place. It is very important that the diagonal dimensions are also measured and confirmed (see Figure 2). Failure to use wood bracing in the frame during installation may result in improper fit of the mat assembly in the frame. This would include the inability of the mat to lie flat when it is placed in the frame. See Figure 3 for the recommended placement of the wood bracing.
- B.** Mats and frames are pre-assembled and pre-fitted at the factory. However, frames may be disassembled for shipping and may require some assembly in the field.
- C.** Floor mat treads may shift during transport. When this happens the mat or mat section may become out of square. If the mat or mat section is out of square, roll the mat, or mat section, back up, and using a rubber or leather mallet, strike uneven treads to even them out. This procedure should correct the out of square condition.
- D.** To prevent distorted installations, for example, twisting the frame or racking the mat, ensure that at least one worker is handling each side of the frame and of the mat assemblies. To ensure safe foot traffic, take care during installation that the elevations are aligned at the splices.
- E.** In some cases a floor mat assembly is provided with multiple mat sections. In these instances clearly mark each mat section with a number or a letter to show its relative position in the floor mat assembly. In this way the mat sections can be replaced in the proper order if they are removed for cleaning or for some other reason.
- F.** If the floor mat is provided with carpet inserts, their edges may appear jagged after rolling and transport. This jagged appearance can be corrected if, after the mat is in place, the installer simply runs his/her hand fingers, or a vacuum cleaner hose along the edges of the carpet inserts to smooth out the edges.

IMPORTANT

**DO NOT PLACE THE MAT ASSEMBLY
INTO THE FRAME UNTIL THE FINAL STAGES
OF BUILDING COMPLETION.**

INSTALLATION

These installation instructions are for use in the installation of floor mat type FMR-(A, C, or D). The system is illustrated in Figure 1. The recessed floor mat shall be installed as follows:

PREPARATIONS FOR FRAME INSTALLATION

STEP 1. Review Balco, Inc. approved shop drawings for types and locations.

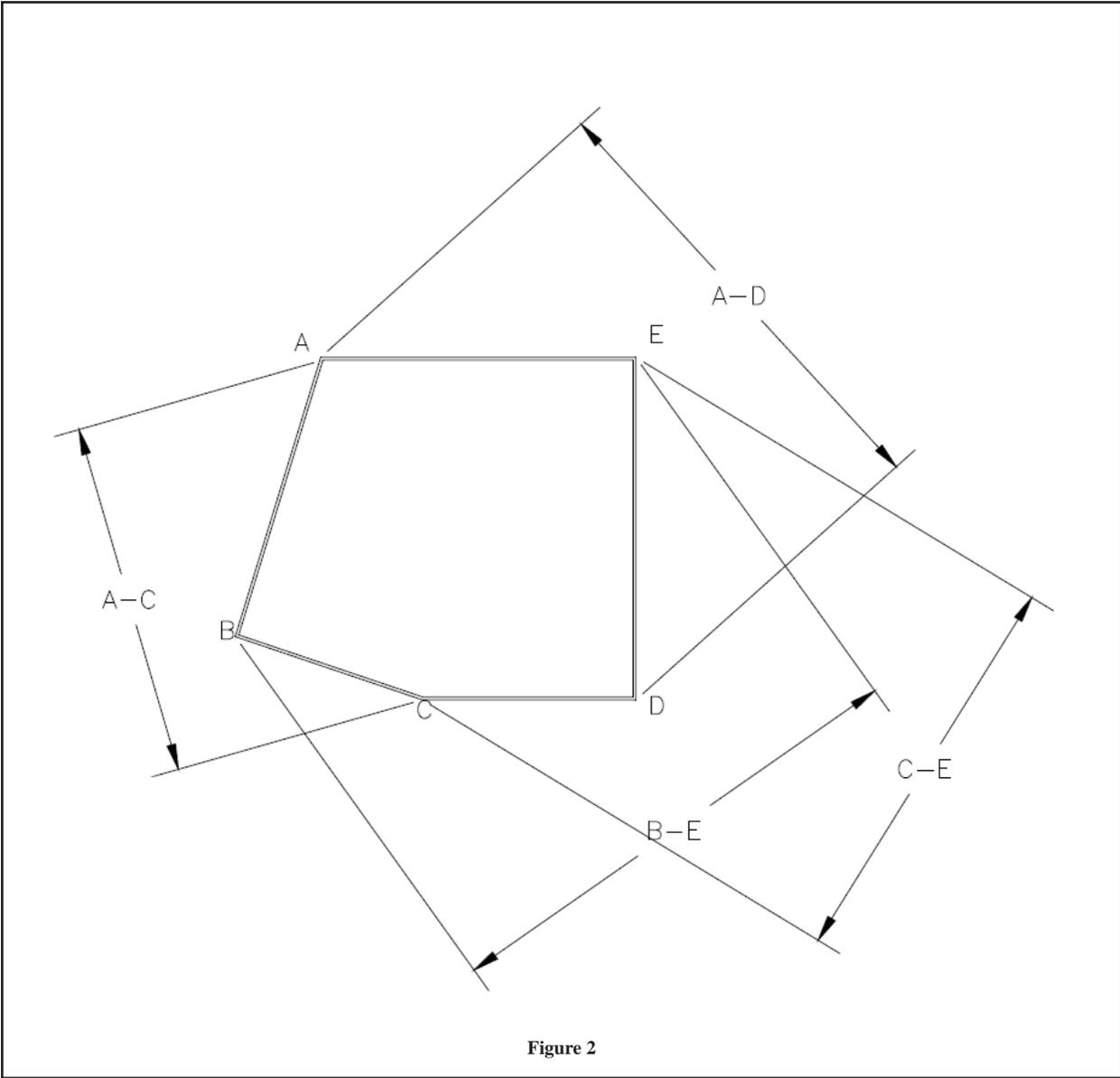


Figure 2

STEP 2. Provide the blackout as required. The blackout may be formed at the time of the initial pour of the concrete, as recommended in item "A" under "**Precautions and Recommendations**", or the blackout may be formed at a later time by removing material from the slab. To ensure a good installation, use level and true blackout materials. The blackout is illustrated in Figure 3.

STEP 3. If the blackout has been formed by removing material from the slab, check the frame's setting bed for uneven conditions. Thoroughly clean the void of any loose materials (sand, dirt, debris, etc.). If uneven conditions exist, grout will be needed to level the mat frame's setting bed.

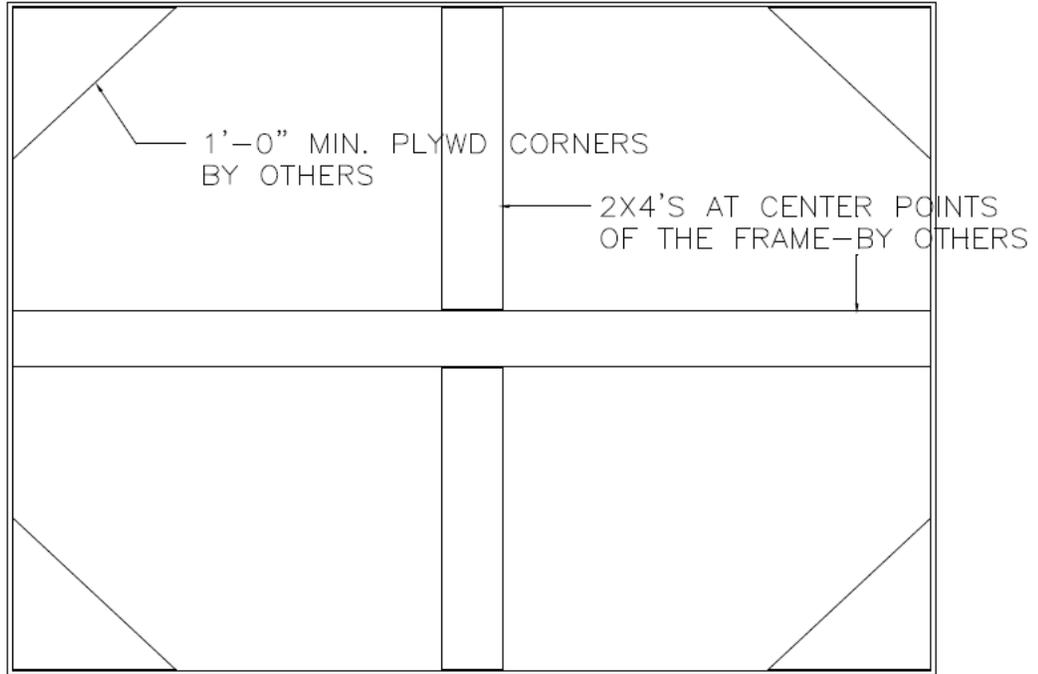


Figure 3



Figure 4

STEP 4. If the frame is provided as a single, assembled unit, remove the mat section(s) from the frame before proceeding with the installation.

STEP 5. If the frame requires assembly, follow the procedures given in the appropriate frame assembly section of these instructions.

FRAME ASSEMBLY

STEP 6. Lay the frame sections out in assembly order. Note that the frame sections are marked with a letter indicating their relative locations, beginning with the letter "A".

STEP 7. Locate the frame corner sections for each corner of the frame (see the details for the section designations). The corner sections of the frame must be assembled first. Select mating corner sections of the frame, and place a splice pin (part no 312) into the channel of one of the selected corner frame sections. Note that the splice pins have a 90° angle configuration (see Figure 5). Insert one leg of the splice pin into the channel of the mitered end of the frame corner section, and using a rubber or leather mallet, drive the splice pin into the channel as far as it will go.

NOTE: DO NOT USE A METAL HAMMER TO INSTALL THE FRAME CORNER SPLICE PINS. USING A METAL HAMMER WILL RESULT IN DAMAGE TO THE SPLICE PIN AND TO THE FRAME SECTIONS. BRONZE FRAMES SPLICES ARE FORMED USING A SPLICE BAR AND FASTENERS.

STEP 8. Mate the corner sections together, inserting the exposed ends of the splice pins into the corresponding channels in the mitered end of the mating corner section of frame. Using a rubber or leather mallet, drive the splice pin into the mating section's channel as far as it will go. Ensure that the corner sections fit tightly together. Assemble each frame corner in the same manner.

FRAME INSTALLATION

STEP 9. If the anchor holes have not been predrilled into the frame at the factory, mark the locations for the anchor holes on the frame (see Figure 6). Standard anchor spacing is 20" o.c. with an anchor at a nominal 3" from each end of each frame section.

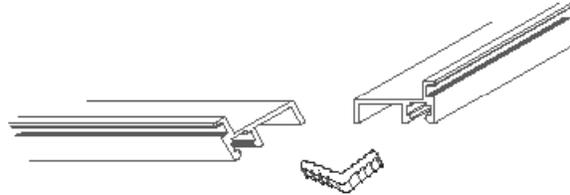


Figure 5

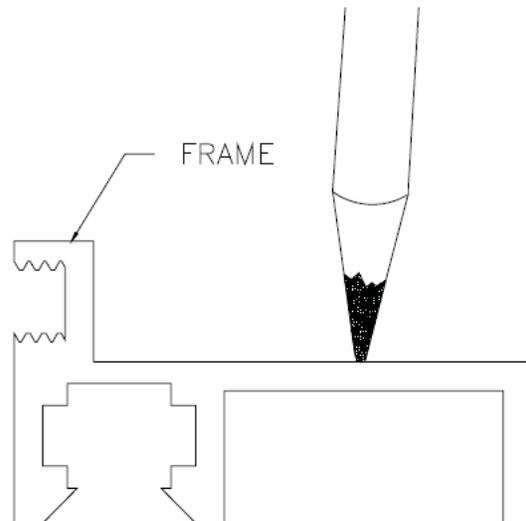


Figure 6

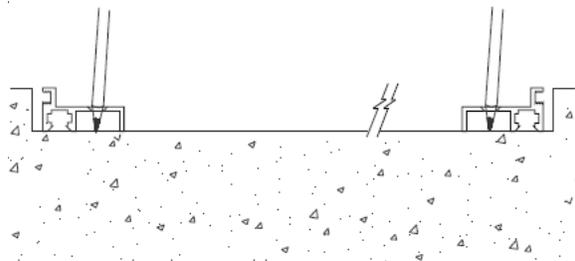


Figure 7

STEP 10. Place the assembled frame into its installed position in the recess. Ensure that at least one worker is handling each side of the frame. Ensure that the frame is level, properly aligned properly centered, and at the proper height. Securely brace the frame to avoid deforming during installation. Use wood bracing. Figure 3 illustrates the placement of the wood bracing in the frame.

STEP 11. Using the frame as a template, mark the locations for the frame anchors on the concrete (see Figure 7).

STEP 12. Remove the frame from its installed position, and drill the anchor holes into the concrete at the marked locations.

STEP 13. Select the frame anchors. Using the anchors provided by the factory, attach the After the concrete or grout has cured, remove the wood bracing from the frame (see Figure 8). Ensure that the wood bracing can be removed without allowing the frame to bow.

STEP 14. When the frame installation is complete, fill the recess bed inside the frame and any gap between the outside of the frame and the surrounding concrete with non-shrink grout (see Figure 9). The grout must be level with the top of the substrate and with the appropriate surface of the frame.

STEP 15. Clean any excess grout away from the exposed surfaces of the angle frame before the grout sets up.

STEP 16. Caulk all seams after the installation of the frame.

NOTE: DO NOT PUT THE MAT ASSEMBLY INTO PLACE UNTIL THE FINAL STAGE OF BUILDING COMPLETION. THE FACTORY RECOMMENDS PLACING PLYWOOD IN THE FRAME TO PROTECT THE FRAME AND THE RECESS DURING COMPLETION OF THE WORK.

MAT INSTALLATION

STEP 17. If the mat or mat sections are shipped rolled, release the bindings and unroll the mat sections to allow them to relax. Do not allow the mat sections to become soiled during this relaxing process.

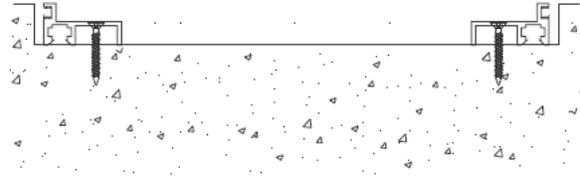


Figure 8

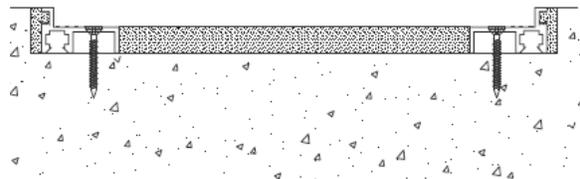


Figure 9

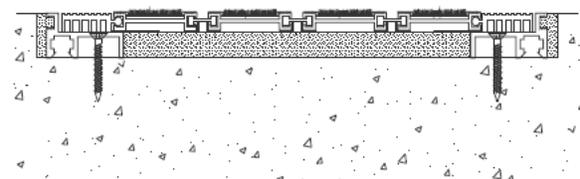


Figure 10

STEP 18. After the mat has relaxed, place the mat into its installed position in the frame (see Figure 10). Ensure that the mat is centered in the frame and that it is level, plumb, flush, flat and properly oriented. If the mat is provided in sections, place each mat section into its installed position, splicing mating sections of the mat together. Ensure that the mat sections are level, plumb, flush, flat, properly oriented and properly aligned and that each mat section is in the position established for it and illustrated in the details. The mat sections are assigned a letter designation, which is marked on the mat sections, to ensure proper placement.

NOTE: IT MAY BE NECESSARY TO TRIM THE MAT'S EDGE VINYL SO THAT THE MAT FITS PROPERLY INTO THE FRAME.

LOCKDOWN INSTALLATION

Repeat the following procedures for the installation of each lockdown. Lockdowns are placed at each corner of the mat. Additional lockdowns are included if the mat is provided in multiple sections. See the Splicing Instructions section of these installation instructions for procedures for the installation of lockdowns at splices.

STEP 19. Roll up or lift up the end of the mat to which the lockdown is to be attached. Using alcohol or a similar solvent and clean cotton rags, clean the area of the back of the mat tread to which the flexible lock strip of the reclosable fastener is/are to be affixed.

STEP 20. Select the flexible lock strips. Peel the backing from the flexible strip portion of the fastener, and press the strip onto the bottom of the mat tread (see Figure 11). Ensure that the strip will not interfere with the frame.

STEP 21. Select the lockdown plate. Place the lockdown plate into its installed position on the substrate, under the mat. Ensure that the lock strip on the lockdown plate is properly aligned with the flexible lock strip on the mat. Secure the lockdown plate to the floor with the fasteners provided by the factory (see Figure 12). The lock strip of the lockdown plate should fall directly under the installed flexible lock strip.

STEP 22. Restore the mat to its proper installed position in the frame. Compress the lockdown area of the mat to engage the lockdown strips with one another (see Figure 13).

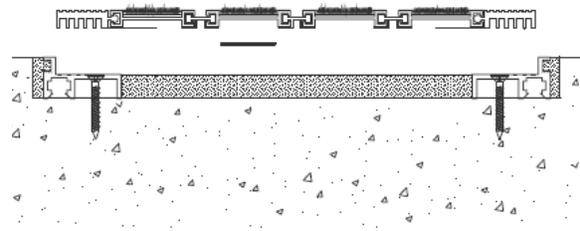


Figure 11

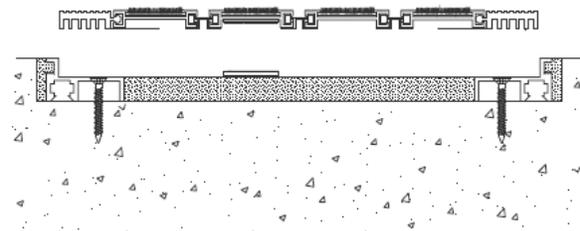


Figure 12

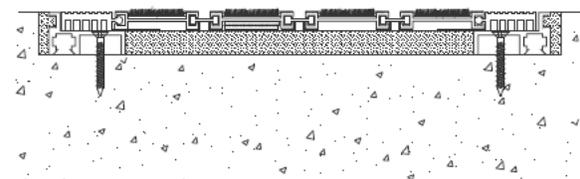


Figure 13

SPLICING MATS

The instructions in this section are applicable only to Balco, Inc. Mats having multiple sections in the mat width. Lockdowns are installed at splices. Spacing for these lockdowns is 2'-0" o.c.

STEP 23. Lay the mat sections in their installed positions in the frame, aligning the mating mat sections with one another.

STEP 24. Select the flexible lock strip and the lockdown plate. Cut the flexible lock strip in half. Remove the backing from the flexible lock strip. Press one half of the flexible lock strip onto the bottom of the selected tread of one of the mat sections at the tread's end. Press the other half of the flexible lock strip onto the bottom of the corresponding tread of the mating mat section at the mating tread's end (see Figure 14).

STEP 25. Using the anchors provided by the factory, attach the lockdown plate to the substrate so that it is aligned with the flexible lock strips on the mats treads (see Figure 15).

STEP 26. Place the mat back into its installed position. Press the areas of the mat containing the lockdowns so that the lock strips engage with one another. At least half the length of the flexible lock strips should engage the lockdown plate lock strip.



Figure 14

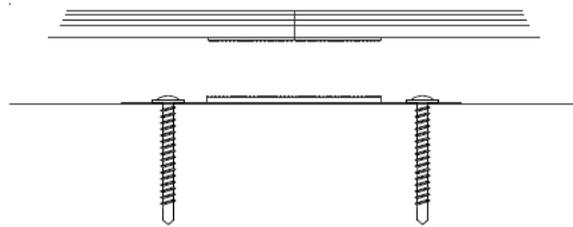


Figure 15

CLEANING AND MAINTENANCE INSTRUCTIONS

Balco, Inc. floor mats are designed to be easy to clean and maintain. The following recommended procedures will help to ensure that the mat will remain durable and will retain its great appearance.

Tread Rails and Frame:

1. To clean the aluminum rails and frame, Balco, Inc. recommends brushing them with warm water and a mild detergent.
2. After cleaning, wet vacuum the rails and frame to remove as much excess moisture as possible. For best results, clean the rails and the frame at the same time that the carpet is shampooed or that the vinyl or abrasive inserts are washed. Always be sure to wet vacuum the mat and frame after cleaning to remove as much excess moisture from them as possible. Note that bronze rails and frame may be cleaned in the same manner; however, such cleaning may contribute to the development of a patina (tarnish) on the bronze surfaces. Polishing with a tarnish removing agent is required to remove the patina. Ensure that any tarnish removing agent does not discolor or otherwise damage the carpet, vinyl or abrasive insert.

Carpet Floor Mats:

1. Power vacuum and/or sweep the surface of the mat.
2. Periodically it will be necessary to remove dirt, etc. from below the mat. Whenever this is necessary, raise the mat and clean underneath it. Balco, Inc. recommends that a regular schedule be established for cleaning beneath the mat.
3. If the carpet needs to be cleaned, Balco, Inc. recommends shampooing it with a mild shampoo. Follow the shampooing with a wet vacuuming to remove as much excess moisture from the mat as possible.

Abrasive Floor Mats:

1. Sweep the surface of the mat.
2. Periodically it will be necessary to remove dirt, etc. from below the mat. Whenever this is necessary, raise the mat and clean underneath it. Balco, Inc. recommends that a regular schedule be established for cleaning beneath the mat.
3. If the vinyl or the abrasive tread inserts need cleaning, Balco, Inc. recommends brushing them with warm water and a mild detergent. Make sure to remove all water and detergent from the treads after cleaning them.

Routine Maintenance of Floor Mats:

For best results Balco, Inc. recommends that a regular cleaning and maintenance schedule be established for the floor mats at the time of their installation. This regular maintenance should include periodic inspections of the mats for loose and/or damaged treads. Loose or damaged treads should be replaced immediately or, for models in which replacement of individual treads or inserts is not possible, the mat should be replaced. If new parts are required to repair a floor mat, please contact Balco, Inc. for pricing and availability.