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Installation Guide/Manual

Please read the ENTIRE installation guide before installing our rubberized safety surfacing, flooring and paver products and services. Glue *must* be used on the sides and/or the interlocks for all installations.

Laying out the floor:

Our resilient rubberized safety surfacing, flooring and paver products are a great alternative to most standard products found on the market today. Installed over practically any existing surface and rooftop, the products we offer should be installed naturally on a **level** surface with a **slight pitch** for drainage when being installed. We recommend using either concrete (cement), asphalt (blacktop) or recycled concrete (stone quarry)-compacted, as a subsurface followed by a landscaping mesh (geo textile fabric) before installing the surfacing systems we provide. The fabric or mesh is a protective slip-sheet that helps the sub surfacing and rooftop from deteriorating as well as preventing weeds from growing through. For rooftops in particular, a slip-sheet may be required between our products and the roofing membrane. Rooftop installations and applications must use what the architect, engineer, building designers or roofing manufacturer recommends. We recommend that our products be laid out over night (un-stacked) before being installed. This allows for ambient temperatures within the products for easier installations. We also recommend that you pick one unit from each skid (pallet) when installing the product. This is to avoid seeing blotches of different dye lots when installing our products.

Our products can be cut easily to fit irregular contours or to fit short areas with a one-ten or one-six saber saw (jig saw) blade using soapy warm water or a heavy-duty utility knife (carpet knife). The surface must be cleaned of excess debris before installations and cleaned of any excessive adhesive immediately after installation. In case of over gluing, wipe with a dampened cloth or rag containing a denatured alcohol. Make certain doors have swing clearance to allow for different thicknesses of the tiles-mats-blocks (products).

Material storage:

Each pallet (skid) weighs approximately 2,000 lbs. DO NOT STACK PALLETS. Protect the existing surface area or roof membrane from potential damage by placing a clean piece of masonite or plywood between pallet and roof membrane area or sub-surface. Installations on the ground, outside, does not require such preparations. Make certain the area underneath the pallet (skid) is clear of any and all debris. You can use our products underneath instead of the plywood to support the weight. The tiles -mats-blocks will not be damaged or wasted. "BEARS - Unity's" products will not be damaged by weather exposure. However, it is advised to keep the material dry and out of the sun prior to installations. We recommend that our products be laid out (not installed) over night before installation. This will allow for ambient temperature and consistency within the products themselves to make installations easier and for coloring to match better.

Tools:

Tiles - Mats - Blocks

1. Pen, pencil, marker, chalk. (marking for cutting)
2. Chalk line (running a consistent straight line)
3. Ruler and straightedge (measuring cuts and designs)
4. Knee pads (kneeling on one's knees for installation purposes).
5. Denatured alcohol (over doing or spilling for the adhesive or glue)

6. Saber saw (jig saw) (to make your cuts accurate) and utility knife (to clean interlocks from flashing).
7. Drill gun, corking gun and nippers (for built-down applications, gluing interlocks and cleaning the tiles - mats - blocks).



Layout:

For hard or solid surface installations such as concrete (cement) (commonly used indoors), asphalt (blacktop) (commonly used outdoors in larger cities) and rooftops (commonly used in major cities). Remove all oils, grease, paints, waxes and any other foreign objects and materials by scrapping, sanding, scrubbing or sweeping. When detergents are used, rinse thoroughly and allow adequate time to dry. Finally, sweep the area of installation clean of any dust or dirt.

When needed, chisel around wall-to-floor corners to remove excess mortar and produce a square edge. Remove all existing base molding and clean away any accumulated dirt or dust. Make certain that doorways have a *swing clearance* to allow for the thickness of tile tiles-mats-blocks (products). It's both difficult and annoying to apply adhesive on a dusty floor. Complete sweeping or blowing clean the floor is highly recommended to minimize any future problems.

Vinyl/ Asbestos floor tiles: These products are most commonly found during indoor applications of our rubberized safety surfacing, flooring & paver products. Contact the EPA (Environmental Protection Agency) for the proper removal of Asbestos tiles if they exist. Remove the old vinyl tiles and/ or carpet, scrape off all old mastic until concrete sub-floor is smooth. If unable to remove all mastic by scrapping, then floor may need to be sanded before installing our products. If the old floor is in good condition it is possible to install the tiles directly over it. Remove all wax and floor finishes before starting installations. This process however is not recommended. Such installations are the *sole responsibility* of the owner / consumer.

Wooded sub-surface: Secure all loose flooring and nails. Replace damaged floorboards and sand all warped or uneven flooring; vacuum or sweep clean.

Concrete (cement) sub-surface: (best) The floor, weather indoor or outdoors, must be cured thoroughly before our products are installed. Etching cement or blacktop with a 25% solution of commercial grade muratic acid and water (1 part acid 3 parts water) will aid in a permanent bond by roughing the concrete surface. Rinse very, very thoroughly with clear water and allow adequate drying. You may want to repeat rinsing process for added protection. Fill in the cracks and expansion joints or damaged portions of the flooring with mastic floor fill for best results. Moisture tests should be conducted on all NEW concrete or asphalt surfaces, especially on sub-floor grade and on-grade installations. **MOISTURE IS THE GREATEST BONDING FAILURE.** Uneven or unlevelled floors can be leveled if necessary. Keep in mind, that if cement or blacktop is your choose for a sub-floor during outdoor applications of our products there must be a slight pitch of about 3 degrees to allow rainwater and liquids to drain off to a drainage outlet freely and easily.

Asphalt (blacktop) sub-surface: (good) Recommended for most outdoor applications along with the recycled concrete (loose stone dust), asphalt must be firm and level (with a slight pitch for drainage) and should also be free of grease and oils. Patch holes and fill dips before installations. The epoxy (glue) or adhesive will adhere to theses and many other sub-surfaces without failure but extra adhesive will be needed to fill the normal irregularities encountered in this type of sub-

surface. Any future separation of asphalt (blacktop), concrete (cement) or any other hard or solid sub-surface layers, heaving, etc. is the sole responsibility if the owners and not the manufactures of our products.

Sealing of sub-surfaces: If the sub-floor is of wood, porous material or extra rough concrete, it must be prepared with epoxy concrete sealer prior to applications of the adhesive and our rubberized safety surfacing, flooring and paver products. This assures that the adhesive will bond rather than soak into the porous sub-surface before it has a chance to react chemically. Allow adhesive to dry over night. Open windows and doors if used indoors for proper ventalation.



Recycled concrete (stone blend) RCA item #4 sub- surface: (OK) On earth surfaces it is recommended that one (1) to three (3) inches (residential) or three (3) to five (5) inches (commercial) of recycled concrete or stone blend be placed in a very tight pattern as seen in the picture *above*. Then use a patting machine, as seen in the picture *below*, to compact the area level with no waves, hill, valleys, divits, etc. - followed by a landscaping mesh or geo textile fabric on top. This is to prevent any bugs, debris, weeds, grass or sub-surface materials from pushing up into the products. This also allows for great drainage of rainwater and liquids thus reducing the possibility for the ground to freeze near the newly installed surfacing and flooring. You may also lay the products directly on the ground after leveling for short-term usages (0-1 year), but is not recommended.



Before starting installations:

Make sure the interlocks are trimmed clean of any flashings prior to installing. This will ensure a tight lock, that will extent the life of your investment for many more years.



This trimming of the double interlocking systems allows for clean and easier installations. We **do not** provide the EXTENDED guarantees of "BEARS - Unity's" products unless sufficient amounts of recommended adhesive is used to cover the entire installation (job), **especially the interlocks**. Ask yourself: Is the floor dry? Test yourself, lay a couple of tile-mats-blocks together for a minimum of twenty-four hours (24) and check if there is moisture underneath. What is the temperature? Temperatures below 40 degrees will retard the curing of the standard adhesives. Do not store the adhesive in temperature below 50 degrees and above 100.

Laying out the tiles-mats-blocks

Establish the start corner and snap (run) a chalk line (as seen in yellow on the picture below) in both directions to represent your starting column and row. There are two sides with male interlocks and two sides with female interlocks. Be sure you are laying them out according to the interlocks. (Note: products less the 2¼" thick do not have interlocks and will line up: factory edge to factor edge). As seen in the picture below, a chalk (string) line is used to keep the products **straight**, continuing both horizontally and vertically.



Installers on bigger jobs (1,000 square feet or more) **should** install the our products using a "step & repeat" pattern as if you were installing "brickwork" as seen in the picture below (notice the colors and products **do not** line up seam-for-seam). Our **fake seam** should line up with the **real seam**. This is to stagger the seams as seen in brickwork to give the product a much better look after completion. This type of installation will also extend the life of your surfacing and flooring investment as well. (Please note: after an installation, the floor will have a look of tile with 22"X22" squares do to the fake seam down the 44" length of your products.) If the retaining perimeter is not exactly square or in an equally multiple, then cutting of the perimeter will be required. It is advisable to avoid having cuts less then six (6) inches. This is not always possible but in many cases it can be avoided with proper planning and preparation.



Adhesive gluing and spreading

When adhesives are required or needed, a two parts or one part chemical will begin to harden in about 15 to 30 minutes. Once used on our products, it will begin to harden in 30 to 45 minutes. Complete hardening will require several hours. For the two-part glue, do not mix more adhesive that you can reasonably expect to use in the next 30 to 45 minutes

(including installing the products). As a trowel becomes worn on the sub-surface, the notch depth diminishes. File to specific depth during the project, using a hacksaw with a carbide blade or regular metal file. The one-part urethane glue is used most of the times during installations. When the first unit of adhesive is completely spread, check the linear feet covered for adequacy. Obviously rough concrete or cracks in the sub-surface will affect the adhesive coverage. The kneepads are for the workers who are on their knees working with a trowel (only with two part adhesives) and trimming the interlocks. That person will be kneeling throughout the course of the project. Spread in normal back-and-forth motion to consume the puddle. Below: is a picture of a tile-mat-block being glued with out one-part urethane glue underneath for added strength and security.



Most installations will be with a one part adhesive. This adhesive comes in a large tube, so a larger corking gun is needed for gluing applications. For solid sub-surfaces, be sure to glue the outside perimeter cones, (feet, legs) of the products located underneath with a small application in the middle. After setting it in place, begin gluing the male interlocks of that product which should be located at the 3 and 6 o'clock positions.



Once completed, start gluing the bottoms of the next tile-mat-block and set in next to the first tile-mat-block installing the females interlocks of the second tile-mat-block over the previously installed male interlocks and repeat the process for the remaining rows. Remember: Use the step & repeat pattern. Remember: Trowels, putty knives, and other metal objects can be cleaned of dried adhesive by heating with a butane torch and scraper. Denatured alcohol (Xylene) will clean off adhesive while it is soft.

Installations of the "BEARS - Unity" Surfacing Systems products

One Unit of adhesive should be mixed (used), spread and the products installed, cut to vertical surfaces, and fit perfect before more adhesive is mixed (used). The object here is to establish the first course in installed tiles-mats-blocks across

the area, making sure this course is properly set *even* and *straight* before continuing.

The recommended method of installation is to start in the upper left corner of the area (longer measurement get the longer length of the tiles-mats-blocks and the shorter measurements get the shorter length of the tiles-mats-blocks). The first unit is placed with the two female sides in both corners of the area at the 9 and 12 o'clock position. This is to allow all other products to **interlock** with the first corner tile-mat-block. Remember as required for the layout it is the male side (interlocks) that should be trimmed with a utility knife from the starting row or column. Trimmed products will allow for much better and quicker installations and the finished results will be outstanding, seeing little or no defects what so ever. Orientation is relative to where your starting point is. For Example: if you start, assuming the first product is in the upper left corner of the area. You will have female interlocking sides at 9:00 and 12:00 o'clock positions. The male interlocking sides will face the 3:00 and 6:00 o'clock positions. Respective of product orientation, if you start in the upper left corner, you will work your way to the right, and eventually down to the lower right hand side.



Place the next piece in by dropping the female interlocks of the second product directly over the male interlocks of the first product as seen below. As a result the interlocks from product-to-product will be completely covered and interlocked. Product orientation to these products and all of the following products must be identical to that of all odd numbered rows.



Simply lay each female portion of the product over the male portion of the previously installed product thus continuing with the step & repeat pattern to stagger the seams as seen in the *pictures below* from your start position continue working toward the right and then with the next row working down. Don't forget to glue the interlocks as you proceed. Cutting a full tile-mat-block in half. Installing the right half on the left side of the second row and the left half is installed on the other end (right side) of the same (second) row.



As you continue, make certain you are following your perpendicular layout chalk (string) lines and that each product is evenly touching at their edges just beneath the factory formed radius. Continuing with the placement of the second row should be **staggered** (start by laying the right half (1/2) of the product on the left side, second row, (not pictured) and continuing with full double tiles-mats-blocks to stagger the seam, thus establishing the "step & repeat" patterns as shown in the *pictures* below). The left half of the cut tile should be installed on the other end of the second row and should interlock with the rest of the tiles, mats, blocks. Half pieces are cut for every even row. Full units are installed every odd row only.



When you reach the other perimeter walls or retainers, take a measurement and cut these products as required to fit. Any gaps may optionally be filled with rubber or silicone. Minor variations are inherent in all rubberized safety surfacing, flooring and paver products including these. Properly mixing products from one batch to another will blend variations to produce a handsome surfacing and flooring pattern. Keep in mind to install as many full products as the adhesive will allow. Don't forget to trim the interlocks of the products as well. Avoid traffic on newly installed products overnight. Adhesives or glues may be slippery when first spread and the tiles will shift positions even if only slightly disturbed. Below is a cheat sheet that can be followed for proper installation.

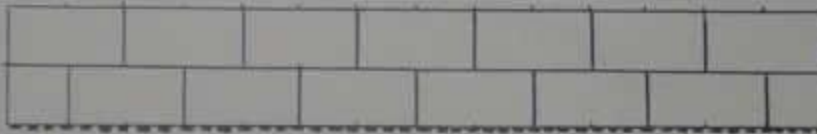
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Installation process: using the "step-&-repeat system" as if you were installing "brick-work". Here is the first row of tiles-mats-blocks laid out:



Here is how the second row of tiles-mats-blocks should be laid out using the "step-I-repeat system" to stagger the actual seams as if you were installing "brick-work":



As you can see the right side of the cut tile-mat-block is installed on the left side and the left side of the cut tile-mat-block is installed on the right side at the other end of the second row.



At this point, the entire surfacing and flooring area should be interlocking. Below is how the third row should be installed (just like the first row). Always use line fake seams with real seams.



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Products should be laid in place naturally, so as to ensure good contact with even joints. Do not exert too much pressure on the squares. You may need to walk on or kick the products to get them to go into place due to the staggered interlocks which locks our products tightly together. Sometimes, due to necessary traffic on the newly installed products and/ or sub-surface imperfections, products may not meet perfectly.

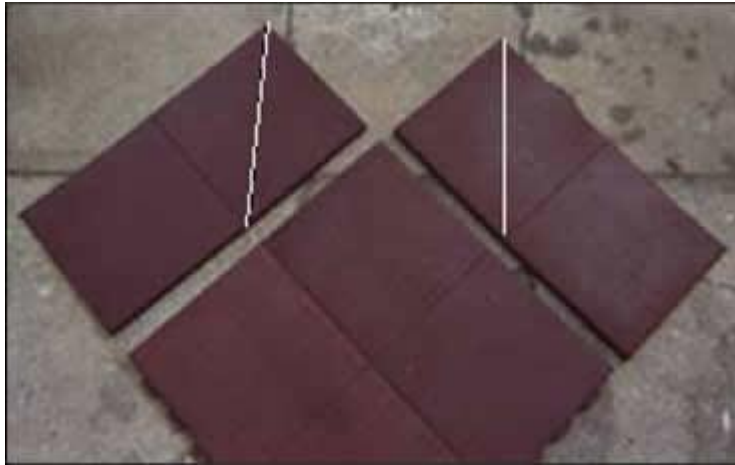
Measuring and cutting tiles -mats - blocks

All cut edges should not be exposed to eyesight. This will insure a first class finish in appearance. Measuring and cutting products to fit tight to a wall, fence, boarder or playground equipment and posts can be done by taking accurate measurements from the installed field to the wall, boarder, playground post, etc. and transferring these measurements to the products. Holding a straightedge carefully to accomplish a good fit. To be safe make the cut a little smaller in size to be occupied and UNDERCUT the product for a tight fit to the end. All cut edges must not be exposed to eyesight. This will insure a first class finish in the appearance. The use of filler is recommended to fill any gaps at cut edges using

rubber or silicone. Dull blades make the work more difficult and cause injuries by forcing a cut. Change blades often and keep them moist with soap.

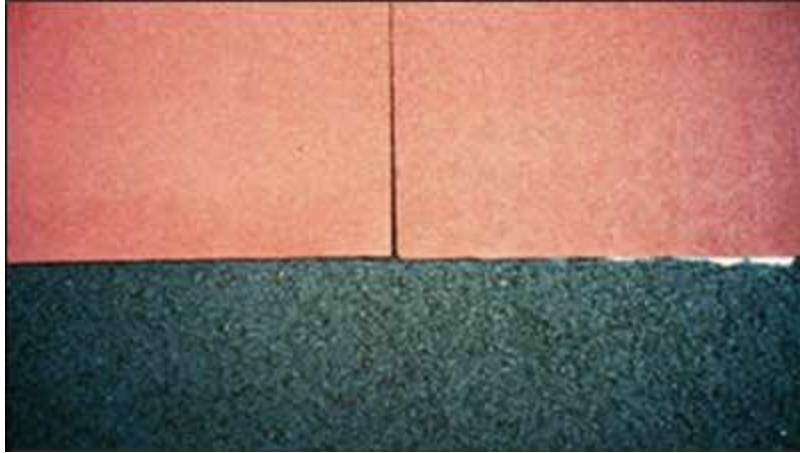
Cutting of all types:

Here you see an installation where our 22" X 44" transitional ramps need to be met and cut on a 45 degree angle to meet in the corner. Please note: when cutting for this corner make sure your blade is on a 30 degree angle into the finished product to insure and tight clean finish for the top of your surfacing and flooring area. You may also want to chalk out the area where the corners would meet by overlapping the transitional ramps where they would meet at the corner to get you your true 45 degree cut as seen in the picture below.



Factory edges: Always butt **factory** edge to **factor** edge. Cuts go against the wall or other vertical surface. You can make your own "factory edge" in scraps by using a carpenters' square to square the piece and undercutting. Keep in mind, when installing the half (1/2) tile-mat-block for the "step & repeat" pattern, the cut edge will not be against the factory edge only at the very end of the surfacing and flooring being installed.

As transitional ramps meet, there may be a slight gap as seen in the picture below.



After gluing the base and sides, simply squeeze the ends together and hammer in concrete nails or screw into a solid sub-surface to keep the products mooshed together as seen in the picture below. Please allow the glue to set over night before removing the nails. **Remember: transitions are installed with the fake seams facing down for water drainage, having the solid top showing as the finished surfacing.**



Cutting around doors: Most doors have exactly the same profile. If there are several doors to cut around, it is often easier to make a template out of cardboard and use it to trace cuts. You might consider cutting the bottom of the door to the approximate thickness of the products being installed.

Small cuts around walls, fences or boarders: The smallest cut against these areas should be at least six (6") inches wide. Smallest of pieces do not often secure well. Cut back the fill in the products enough to give a 6" piece at the wall. If you have no choice in the matter simply use excess glue in this area.

Cutting around obstructions: Sometimes a post, pillar, floor drain or other obstructions such as playground equipment occur anywhere in a room or outside area. Cutting the individual products allowing no clearance around the support is recommended. If it is larger, this notch or gap will be back-filled with rubber or silicone filler, however, it should be noted that cuts should always be tight. Before the field of full tiles-mats-blocks had been laid around the obstructions can cause the product line to become uneven. Holes in the center portion of the products will require a lead in cut. Lay this cut out using the shortest path or the one least visible. Using a fresh blade well lubed with soapy water and taking your time leads to a cut that is less visible as seen in the picture below.



You can establish the field without installing the piece that will eventually have to be cut, by using full-length scraps as spacers. Once the row has been established, complete the area around the obstruction. If the slope around the drain or object is so great as to keep the products off the adhesive ...sandbag the area overnight. Below is what the final installation should like when completed.



Covering expansion voids in cement (such as ice rinks)

The slab of ice in rinks holds the refrigeration coils and is invariably isolated from adjoining slabs with a 3" wide expansion void that must be allowed to absorb the expansion/ contraction occurring when the ice is off/ on. Apply epoxy to the area 12" from the edge of the void and install while the ice is "off". The contraction of the slab that occurs when the ice is "on" will be absorbed. If the expansion void is other than the customary 5" wide, center the product over the void, then apply epoxy on the sub-floor up to, but not including, the void itself. During contraction of the slab, the product will stretch, developing small openings between the products spanning the void. An alternative method is to install the products normally and the cut through the tiles-mats-blocks directly over the void. When the slab contracts, the products will ride with the slab and an opening will appear equal to the amount of contraction.

Trouble shooting areas:

In the rare event that a loose products shows in a completed installation, make sure the following examinations take place:

1. Remove the product: If adhesive is visible in the sub-floor but not visible on the back of the product, or vice versa, it is apparent that the installer incorrectly installed the product.
2. Remove the product: If the adhesive is visible on the back of the product, but not visible on the sub-surface, it is apparent that the sub-surface was wet, moist, greasy, dusty, and dirty, etc.

In either case the loose products can be permanently stuck back into place with adhesive after the problem(s) have been analyzed and corrected.

The manufacturer accepts NO responsibility for moisture accumulation underneath our "BEARS - Unity" Surfacing Systems products after installation, which may cause failure in the adhesive, or other failures not related to defects in materials.

Setting time

Avoid any and all traffic over finished surfaces for a minimum of twelve (12) hours, usually overnight. The next 12 hours may have minimal traffic allowing the products to settle into place. Normal traffic may resume after a full twenty-four (24) hours, after completion of the entire project.

Maintenance and cleaning finishes

After installation has had about twenty-four (24) hours to set, clean and finish the flooring. Mix cleaner with water as directed and apply to the floor (surface) with a wet mop. Allow the cleaner to stand about five (5) minutes before removing with a clean damp mop. Rinse thoroughly until the rinse water is clear. It is not necessary to re-apply floor finish to the entire area when maintaining the heavy traffic areas. Damp mopping the entire floor especially on the abused areas is necessary.



Routine cleaning may be accomplished by sweeping (leaf blowing), mopping or vacuuming the floor. Work one area at a time. A little vinegar or even "Armor-all" may be applied afterwards which gives the surfacing a wax or shine look to it. A cloudy appearance may form if rinsing is not done properly. Battery powered "scrubber-vacuum cleaning machines do a good job for maintaining the beauty of our products.

Painting

After many years of use, like any other products on the market, BEARS - Unity's products can be painted for a fresh new look. We provide the necessary paints that can be sprayed on or simply rolled on for a brand new look. This can provide less heat build up and extended life of the products for many years to come. Here is a list of all eleven coloring options available:



Rooftop applications

Do not use the glue or adhesive on rooftop applications gluing or adhering the product to the roof membrane. However, you must glue or adhere the interlocks both male and female together at all times, gluing product-to-product only.

To provide a rooftop with the proper warrantee the following must be done:

Pitch and drainage: Adequate pitch to drains must be 1/8" (inch) per foot minimum and maintained throughout installation. Pitch may be adjusted by:

1. Tapered insulation
2. Perlite concrete

Ample drains and pitch must be installed to eliminate all ponding (puddles) within forty-eight (48) hours after precipitation. All interior drainage systems must have a minimum of 2 drains.

Insulation Installation: Mechanically fastened with Drill-Tec or mopped.

Brai membrane installation

- A. ***Base sheet:*** Loose lay the insulation with the joints staggered in one direction over the deck. Mechanically fasten the base sheet and insulation to the deck as follows: Lay the base sheet over the insulation and lap it two (2") inches on side laps and four (4") inches on end laps.
- B. ***Interply Membrane:*** Heat weld one ply of interply membrane over the base sheet and install perpendicular to it. Lap membrane three (3") inches on side laps and six (6") inches on end laps.
- C. ***Brai Membrane:*** Heat weld one ply of Brai Membrane over the interply membrane and install perpendicular to it. Lap membranes three (3") inches on side laps and six (6") inches on end laps.

U.S. INTEC - PRODUCTS

Membrane System Materials:

- A. Material requirements per 100 square feet.
 - Base Sheet.....1 ply
 - Interply Membrane.....1 ply
 - Brai Membrane.....1 ply
 - Surfacing (if applicable)

- B. Base Sheet- Acceptable types: Intec Base, or other U.S. Intec approved based sheets.
- C. Interply Membrane- Acceptable types: Flex Cap App 4S, Brai SP-4, Brai/ Weld or other U.S. Intec approved interply membranes.
- D. Brai Membrane- Acceptable Types: Brai SP-4, Brai GBSP-4, Brai GBSP-4, Flex Cap APP 4S, Brai/ Weld, Brai/ Weld G.

Insulation: U.S. Intec insulation of the appropriate size and thickness to meet project specifications. (R-Value Available in ranges from 6-32)

Fasteners: Drill- Tec fasteners of the appropriate type, size and quantity to meet project specifications.

Flashing: Brai Membrane, Mini- Brai and Quick Flash (for use in Brai/ Weld Systems) are acceptable flashing materials. Special conditions may require custom fabrication.

Accessories: M-vent, M-pan, M-drain, M-scupper, Brai- Walkboard and USI Term Bar are to be used where applicable to meet project specifications.

