

**Specifying Interlam IDF/MDF Panel Products**  
**Art Diffusion / Elements by Interlam**  
Division 6 (6400 Architectural Millwork)

**Installation Methods:**

The following information is a compilation of published information pertaining to the use and application of carved MDF/IDF products. This publication is intended to serve as an informative tool and a “sharing of information” rather than a strict directive. Each application will have unique circumstances and varied site conditions resulting in an assortment of available techniques and practices to achieve the same result. MDF/IDF products have a possible linear expansion of +/- .33%. Wood is a hygroscopic material, and under normal use conditions all wood products contain some moisture. Wood readily exchanges this molecular moisture with the water vapor in the surrounding atmosphere according to the existing relative humidity. In high humidity, wood picks up moisture and swells; in low humidity wood releases moisture and shrinks. As normal minor fluctuations in humidity occur, the resulting dimensional response in properly designed construction will be insignificant. To avoid problems, it is recommended that the relative humidity be maintained within the range of 25-55%. Uncontrolled extremes – below 20% or above 80% relative humidity-can likely cause problems. Immediately upon receipt of your order, the panels should be placed in a climate-controlled environment and allowed three days to acclimate to the existing relative humidity (within the above stated ranges) This level of humidity should be the level that will be maintained after occupation of the space. It is very important to note that the panels must be stored flat and face up to reduce the bowing and warping. When MDF/IDF panels are carved, the face of the panel is removed and creates an “unbalanced panel effect”. The level of this effect varies depending upon pattern and board thickness. Plywood backers can be added to the panels to assist in reducing this effect and aid in the installation process. The natural “bow” or “warp” is common to all MDF products and not inherent specifically to our products. This condition can be compensated by proper installation techniques, some of which are discussed in this bulletin.

Our Carved MDF/IDF wood products are manufactured from 100% recycled/recovered wood chips dried to appropriate average moisture content of 4-6% and maintained at this condition up to time of shipping. Interlam cannot control the conditions the panels are exposed to during the storing and shipping process. Subsequent dimensional change in MDF/IDF is and always has been an inherent natural property of composite panels. These changes cannot be the responsibility of the manufacturer.

Specifically:

- Responsibility for dimensional change problems in IDF/MDF resulting from improper design rests with the designer/architect/specifier.
- Responsibility for dimensional change problems in IDF/MDF resulting from improper relative humidity exposure during site storage and installation rests with the General Contractor.
- Responsibility for dimensional change problems in MDF resulting from humidity extremes after occupancy rests with engineering and maintenance.

All orders finished “In House” will have a clear lacquer sanding sealer on the back of the panel and the specified finish in either a lacquer or latex finish on the face and all edges. All orders placed as “prime and sand” only will have a lacquer based primer applied as a standard unless otherwise noted at the time the deposit is received. Sealing the back is imperative to reduce the possibility of excessive bowing and warping. **All panels ordered as raw or unfinished, MUST BE SEALED OR BACK PRIMED prior to installation!! Failure to seal the back will allow moisture to be released and or absorbed from one side, resulting in excessive warping.**

Due to the manufacturing methods used, most panels will present “bow” or “warping”. This condition is considered normal and can be removed using the installation methods below. If a higher degree of flatness is

required, Baltic Birch Plywood can be bonded to back of panels prior to manufacture. This reduces but will not completely eliminate warping. The maximum size of Baltic Birch is 5' x 10'.

#### **Z-Clips:**

Z-Clips may only be used if there is sufficient material thickness to allow screw attachment of the clips to the panel. Ideally, the panels should be specified thick enough or with a thick enough backer to accommodate the screws that are to be used. Panels of minimum recommended thickness can be used for Z-Clip installation, but the installer must first glue wood screw cleats to the back of the panel. Z-Clips should run the full panel width to insure adequate support across the entire panel. A minimum of three (3) rows of z-clips are required per 8 foot high panel. Adding a fourth row may be required depending on the pattern and panel thickness specified. The rows should be situated at the extreme top and bottom of the panel with the remaining rows centered. The z-clips should run the full width of the panel. Plywood or solid wood "in-wall" blocking is required with metal stud construction and recommended with wood framing. Z-clips are available for purchase from Interlam. Estimate 4pcs (8 foot lengths) per 4 x8 Art Diffusion panel. The z-clip is shipped in 8' lengths without bored holes.

#### **Construction Mastic:**

A high quality construction mastic such as "Liquid Nails" or a "PL" Mastic such as "PL Premium Polyurethane" can be applied to the back of the panels and then pressed onto a structurally sound surface \* A structurally sound surface for the purposes of this installation would be a wall skinned in 12mm Baltic birch plywood. Interlam does not recommend using this method to apply directly to drywall or painted surfaces. (follow construction mastic manufacturer's application instructions). Panels must be mechanically held in place until mastic is completely set. The installer MUST insure the panels are completely flat and aligned prior to the mastic curing. Improper placement using this method will result in a permanent incorrect installation with bowing or cupping on all sides at joints. This method is not recommended for panels thicker than ¾".

#### **Direct Screw Attachment:**

Carved IDF/MDF panels may be attached to a supporting structure by screwing directly into the panel back. As is the case with Z -Clip installation, the panels should be specified thick enough or with a thick enough backer to accommodate the screws that are to be used. Construction mastic should also be used in conjunction with this technique. If attaching directly through the face of the panel into a substrate or batten preferably "in -wall blocking", the hole should be predrilled and countersunk and filled with a non-shrinking type of filler such as "Bondo" or similar auto-body filler. If this installation technique is used on prefinished panels, then it will need to be touched up in the field after installation. **If this technique is utilized, the back must be sealed/back primed prior to installation.** Bondo or similar auto-body fillers, wood putties or wood fills ARE NOT RECOMMENDED for the filling of seams between each panel. If the designer is attempting to achieve a monolithic appearance of the panels, a flexible seam fill or caulk should be applied in the seams prior to finishing. The selection and type of a particular seam fill should be compatible with the specified finish. The seam fill should only be applied in the seam taking care to prevent the seam fill from being applied to the face of the panel. Using blue painters tape on each side of the seam should aid in this step. Failure to follow this step will result in large visible striping that will become visible after the application of the final finish. Consult the specified finish manufacturer for compatible "Flexible seam fill options". Based on the inherent linear expansion properties of MDF/IDF products, flexible seam fillers must be utilized in the absence of a designed reveal or quirk line to allow for movement. With the proper technique, the seam will be less noticeable; however it will never be invisible.

#### **Seams:**

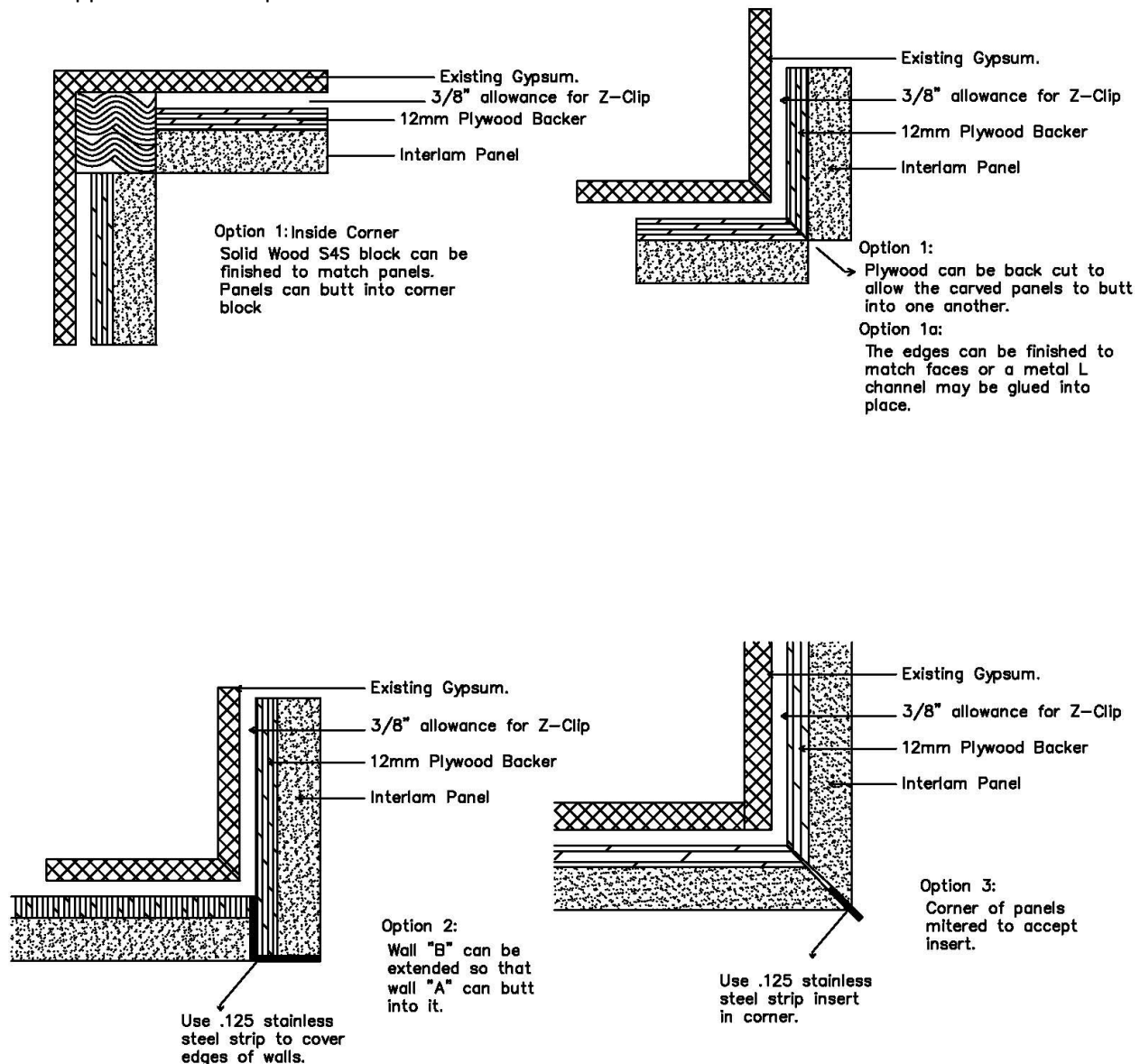
Prefinished panels will have noticeable seams due to the finish buildup on the edge of each panel. The pattern will continue perfectly from one to another, however depending upon the pattern and pattern direction relative to the seam location, the severity of the seam visibility will vary. Some patterns allow the seam to be less noticeable within the patterns, while others may require the seam to be placed against the direction of the

pattern and be more noticeable. It is recommended that the designer contact Interlam Corp. prior to specifying a pattern or specific installation technique to achieve the highest level of design intent. During this contact, the specifier should provide the following information:

- Complete layout in AutoCAD of the specified area only, including plan, elevation and section
- A selection of patterns being considered with *desired pattern direction*
- Desired finish
- Installation technique being considered
- Site conditions
- Specific core requirements I.E. fire rating, LEED's, CARB etc....
- Corner conditions- Sample illustrations are shown

NOTE: This written document overrides any verbal communication directly with Interlam or any Interlam Distributor or Representative.

Although techniques exist to greatly mitigate the visibility of panel seams, too many varying factors exist for Interlam to guarantee a specified outcome. Site conditions, in wall blocking, uncontrolled relative humidity and the experience of the installation team, the specified installation method, etc.... all play a role in the final installed appearance of the product seams.



Consideration of all the aforementioned elements will allow Interlam to determine a suggestion for optimal placement of material seams and methods of installation.

The installation of our panel products requires more than a basic knowledge of rough carpentry and should only be performed by a certified AWI millwork company. Special conditions such as miter corner conditions, radius applications, custom shapes etc... should be addressed during the initial design phase.

FURTHER QUESTIONS SHOULD BE DIRECTED TO: [kevin@interlam-design.com](mailto:kevin@interlam-design.com)