

# invisible loudspeakers

# WOOD

## Installation application note



A high tack, doubled sided acrylic film adhesive applied to the Amina Evolution, AIWX, Lfi and iQ series of invisible loudspeakers to allow them to be installed behind thin sections of timber, MDF, wood veneers, high pressure laminates, acrylic, leathers and other similar material.

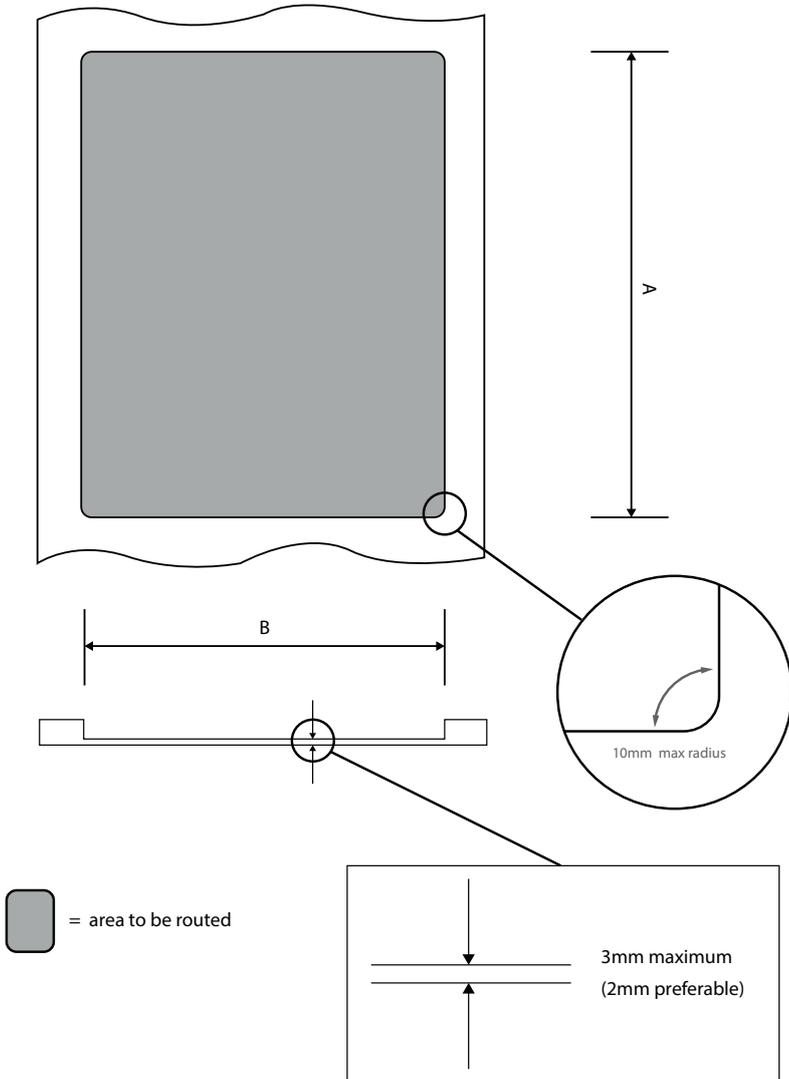
The Amina wood film adhesive allows the creation of high performance sound reproduction solutions within furniture and panelled structures.



### Installation Application Note: Wood

For this guide, installation into 18mm MDF will be used as an example - the installer will need to have a section routed out of the rear where the speaker is to be fixed. It is very important that an absolute maximum thickness of 3mm is remaining once routed. Any more will have a detrimental effect to the efficiency and sound quality of the loudspeaker. Ideally a 2mm thickness is preferable. See the illustration below;

When a fibrous material such as MDF is routed down, the area remaining will be "fluffy". Although the wood adhesive applied to the front of the loudspeaker is designed to adhere to fibrous surfaces, it is necessary to both sand and vacuum the area to give the best possible adhesion to the surface.



|                  | A     | B     |
|------------------|-------|-------|
| Evolution & AIWX | 456mm | 351mm |
| iQ/Lfi           | 406mm | 306mm |
| AIWE/S200        | 456mm | 206mm |

The carrier attached to the adhesive needs to be removed for the next step. This will expose the panel and adhesive layer to possible contamination so please ensure that the area you are working in is free from dirt and dust prior removing it.

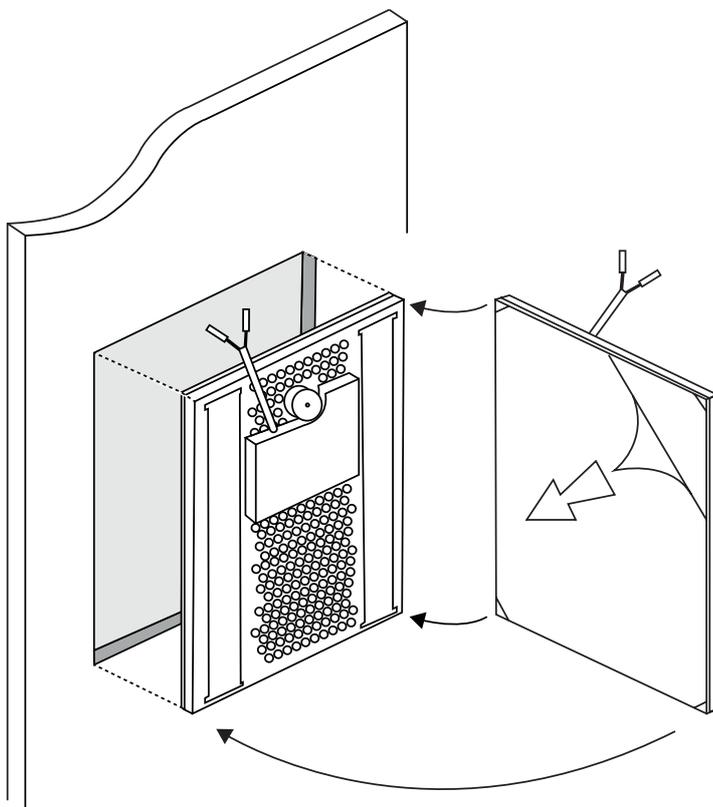
**Do not remove protective carrier layer until ready to install.**



Once the protective carrier layer has been removed from the front panel, position the loudspeaker into the routed area. It is vital that the entire surface area of the speaker's active panel bonds to the routed out area of the board.

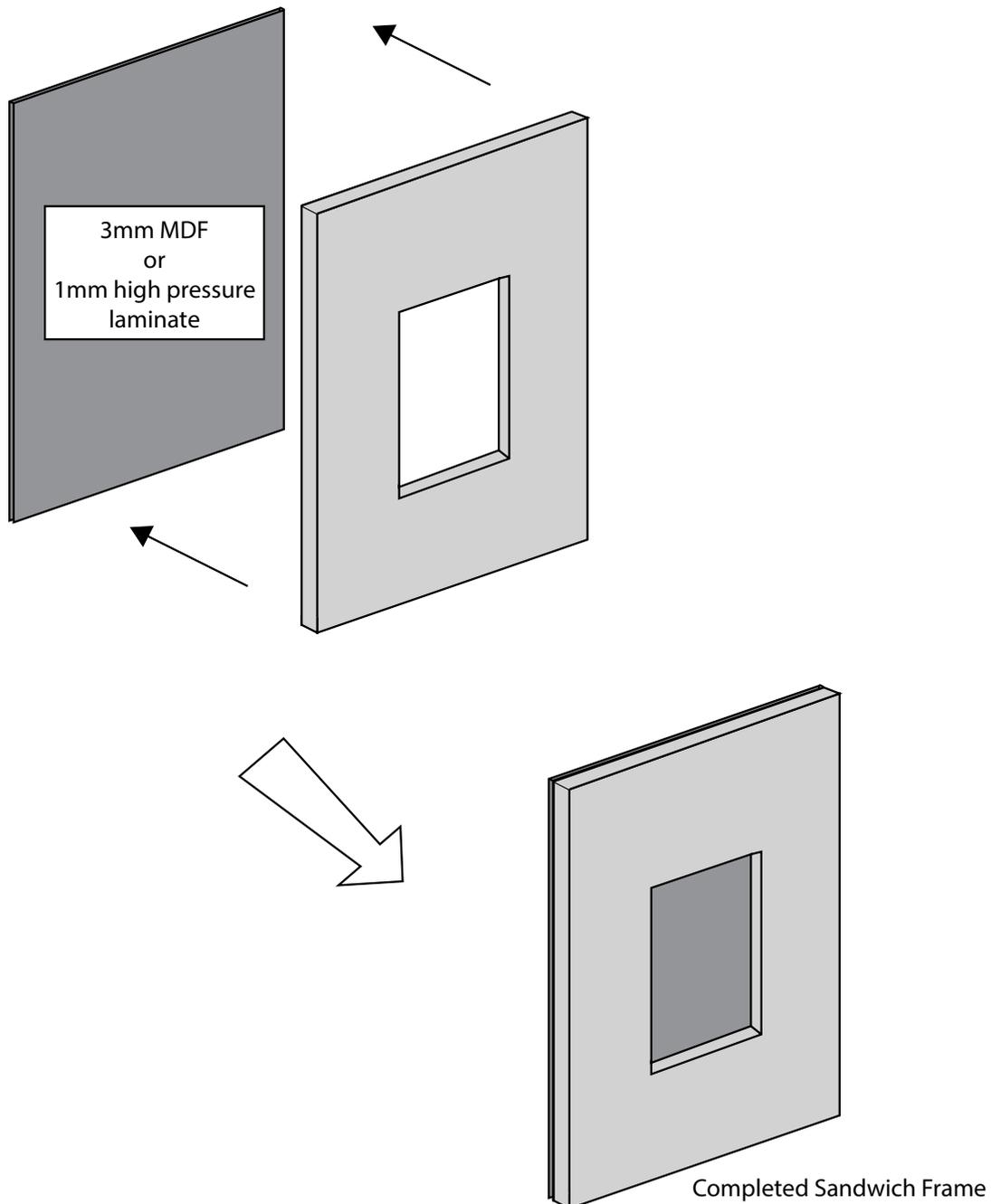
Apply pressure to the front surface of the board and to the rear of the speaker frame by hand simultaneously. Do the same for all accessible areas of the active surface. Finally, apply very moderate pressure to the "exciter" units - these are the silver objects on the back.

If done correctly, this will make a strong bond between the adhesive and the routed area of the board.



## Other Methods of Installation

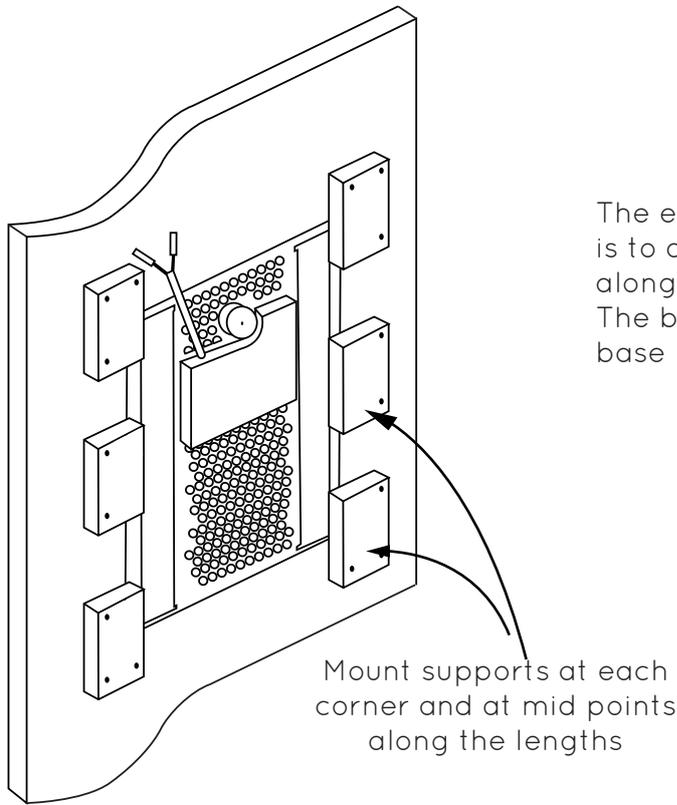
Depending on the installation, it may be possible to avoid routing altogether and instead build the “routed” area. This can be achieved by sandwiching two materials together - one with a maximum 3mm thickness to another which has had an aperture cut through it to the dimensions shown on page 2.



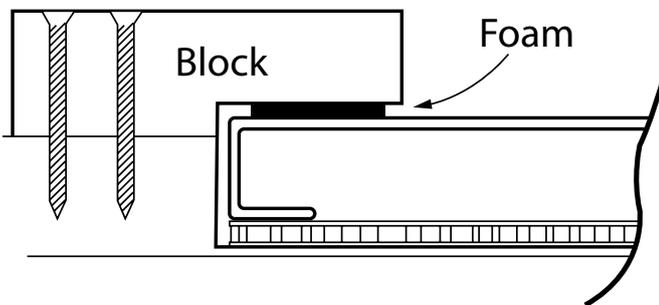
Construction by this method will allow the wood adhesive to bond to the un-routed, smooth surface of MDF or high pressure laminate. The 3mm MDF requires no other preparation. Other materials that you might consider for use as a front panel range from Melamine (clean areas) to applying a wood veneer to MDF (board rooms or commercial shopping areas.)

It is sometimes not practical to use a 2-3mm material - Melamine for example has a thickness of 1mm. There is no audible disadvantage to having a thinner layer but, in fact you may create a louder, brighter sound, but depending on the material that is being used, you are reducing the physical protection gained from the front skin.

To ensure long term reliability, some form of mechanical fixing should be created to hold the loudspeaker in place on the rear of the panel/furniture structure. Amina do not supply fixings due to the wide variety of potential wood/ board thickness and applications that the loudspeakers may be installed into.



The easiest method of adding extra support is to apply blocks to the corners and midpoint along the larger lengths of the speakers. The blocks need to be securely fastened to the base material surrounding the speaker.



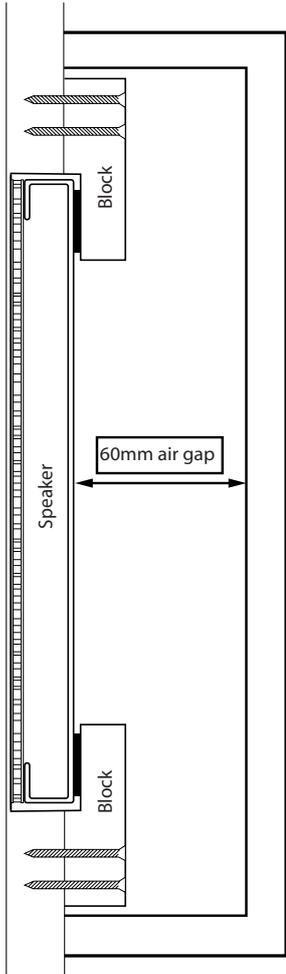
Using lengths of foam under the blocks allows for any inconsistencies in installation or material thickness, and will prevent contact rattles by providing damped isolation between frame and block.

When designing the blocks, allow a 2mm gap from the back of the speaker to the block. The foam will compress and apply the required pressure to the frame.

The loudspeaker and structure it is mounted within should be tested for buzzes or rattles prior to permanent installation into the building or furniture assembly. The front board can be finished as normal with varnish, lacquer, paint, etc. Be sure to use light layers of the finish to the board. Tiles or similarly heavy and dense materials should not be fixed to the front of the speaker as this will impair the sensitivity of the speaker and likely reduce sound quality.

If, during surface preparation, the front of the panel needs to be sanded after the speaker is fitted, take precaution to ensure dust does not enter the exciter structure on the rear of the speaker.

Ensure that once assembled and located in final position, cables and other items are not touching the rear of the active panel surface. Ensure no hard loose objects are touching the surrounding structure as this could create a rattle.



For best audio reproductivity allow at least a 60mm air gap between the rear of the speaker and the enclosure rear surface or wall.

If the rear enclosure has vents to the room, it may be possible to establish a 'tuned' structure that may produce excessive bass output. This may require electronic equalisation to reduce excessive bass frequencies.

**European Union WEEE regulations:**

The product is fully RoHS compliant, eliminating to a minimum the use of hazardous materials within its manufacture. At the end of its useful life it should be returned to the manufacturer for recycling according the European Union's WEEE directive.

All products are subject to change without notification. E&OE

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