



**DreamCast**  
design and production

## CONCRETE FIREPLACE SURROUNDS INSTALLATION GUIDE

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**CAUTION: FRAGILE!**

**HANDLE ALL PIECES WITH EXTREME CARE.**

**CONCRETE EDGES AND CORNERS WILL CHIP IF HARD OBJECTS OF METAL, STONE, OR OTHER CONCRETE PARTS COLLIDE.**

**CONCRETE IS NOT EASILY REPAIRED.**

## GENERAL PRECAUTIONS

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DreamCast Fireplaces are cast as GFRC which is a high performance concrete. Although the material has exceptional strength it has a fine finished surface which can be damaged if these and the other guidelines in this manual are not followed.

#### **Do not leave concrete wet**

If concrete should become wet for any reason (including wet cutting and/or grouting) dry surface water immediately, and ensure that pieces are placed so that finished surfaces can air dry.

#### **Do not leave tape on the surface**

Many masking tape adhesives are mildly acidic and should not be left stuck to concrete for more than an hour. Acids tend to have a bleaching/etching effect on the concrete colour.

#### **It's only as strong as what you adhere it to -**

Movement in unstable substrate may result in cracking. It is advisable to use flexible adhesives when adhering panels to such surfaces as new concrete or metal.

#### **Handle with Care**

Concrete is most scratching, chipping and staining during installation.

***When in doubt about how to treat the material do not hesitate to call us if you have any questions.***

## CONTENTS

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This installation guide is designed to cover all of our fireplace models in a wide variety of situations. Your fireplace will include one or more of the following components: hearth, surround, mantel, and infill panels. The guide is divided into sections that treat each component separately so you can use and ignore sections as is appropriate.

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- Pre- install

### 3. CUTTING CONCRETE

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- Floating

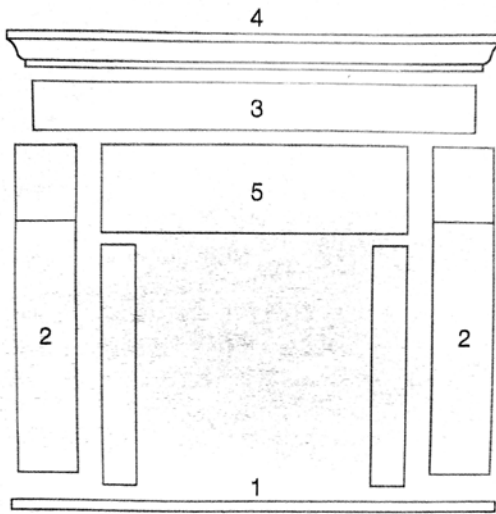
### 5. SURROUND

- Three piece Surrounds
- Five piece Surrounds

### 6. MANTEL

### 7. INFILL PANELS

### 8. CAULKING



## 1. YOUR FIREPLACE

Your Fireplace will be comprised of some or all of the following components. For the purposes of this manual we will refer to the components as follows:

1. Hearth
2. Legs
3. Header
4. Mantel
5. Infill Panels

## TOOLS AND MATERIALS

Drill

Level 2' minimum

Framers square

Hammer

Wood shims up to 1/4"

Caulking gun

Screw gun or screwdriver

Tape measure

Utility knife

Painters tape

Moving blankets or blocks of EPS foam

1 1/2" - 3" #8 or #10 wood screws (1/8")

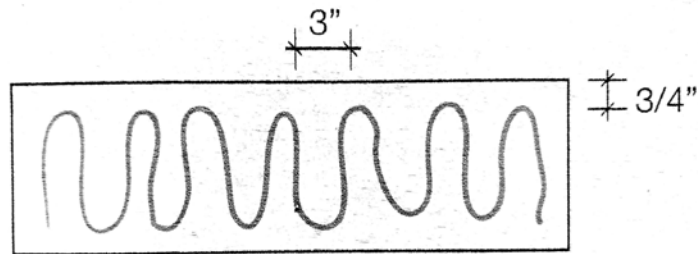
1/8" Masonary drill bit

## BASICS

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### Note on Adhesives

In this guide we recommend the use of PL Premium Construction Adhesive which is an extremely strong, flexible glue suitable for this application, Its advantages are: ease of use and ready availability. It also requires very little experience or knowledge to use effectively. Its disadvantages are slow drying time and its tendency to 'lubricate' surfaces to be adhered. We recommend applying adhesive within the following parameters:



### YOU MAY NEED

Mapei Kercaulk S Sanded Caulking  
PL Premium Construction Adhesive  
Saw horses

### BASICS

#### Properties of Concrete

Concrete is very strong but brittle on the edges and corners. The most common source of damage is pieces that are knocked into each other. Damaged concrete is difficult to repair!

Every fireplace or modern gas insert has different requirements for flammable material and minimum clearances. Furthermore, every region has different building codes with regards to flammability issues. Although concrete is non-flammable the substrate you will be installing to may be flammable. It your responsibility to familiarize yourself with these requirements and make the necessary adjustments to your particular installation

### **2. PREPARATORY WORK**

With all applications you should adhere to the following simple rules:

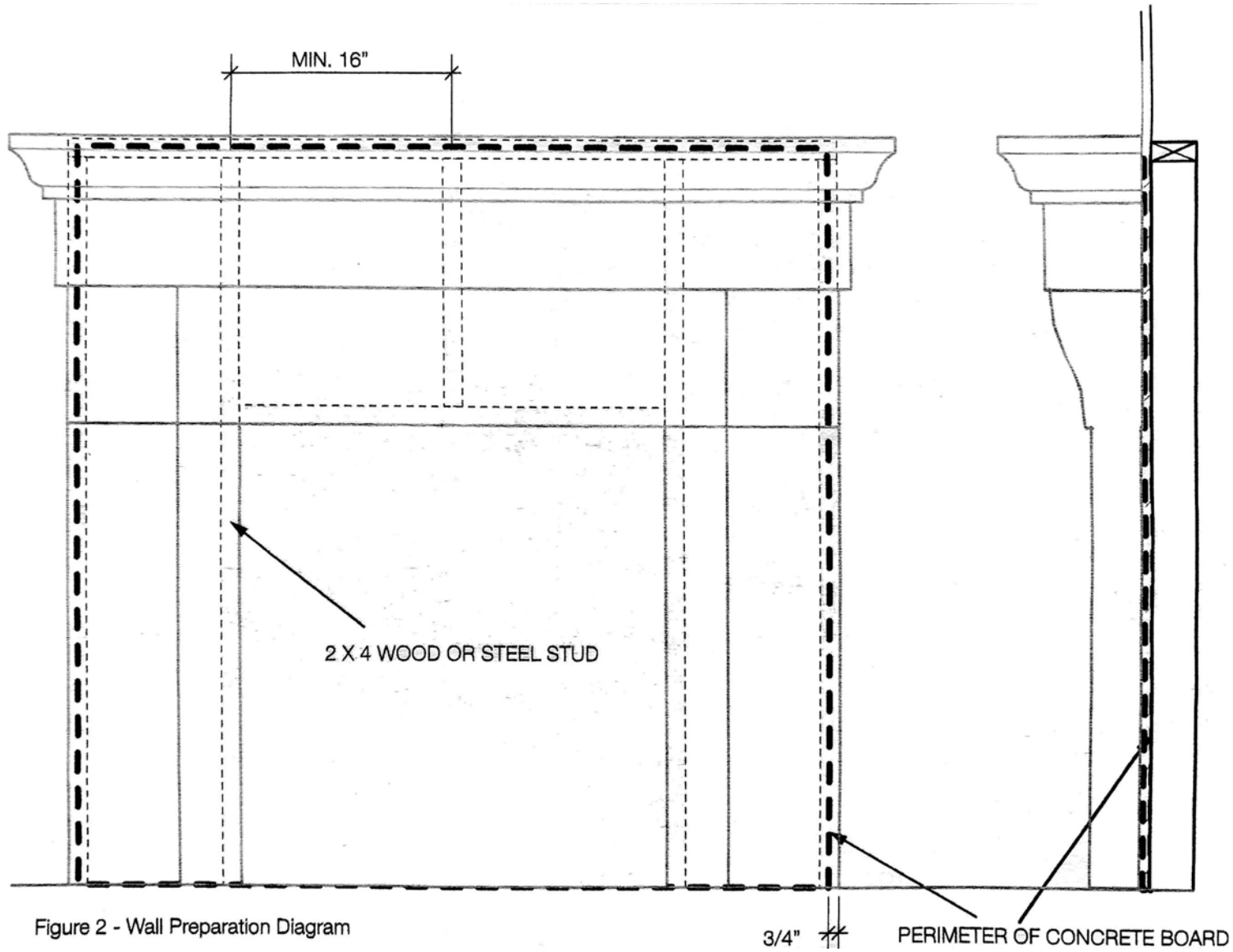
- Your substrate must be sound and should be solidly attached to your homes structure: concrete board, brick, concrete, plywood, and block are good; *drywall is not*.
- Modern adhesives are extremely strong, but should always be backed up with mechanical bonds, and are only as strong as the substrate they are af-fixed to.
- Your installation is only as strong as your weakest bond.
- When in doubt, overbuild and oversecure.
- Always double check dimensions, concrete cannot be repaired adequately, and it is very difficult to cut 1/4" or less off a piece if an error is made.

### **A COMMON INSTALLATION SCENARIO**

The following describes one common situation in general terms and how it can be made to fulfill prep requirements.

A gas fireplace is installed in a stud wall with the intention of having a dry-wall facing around the surround. The best preparation for a DreamCast Concrete Surround is to install 1/2" cement board (Wonder Board or Durock) over the entire 'footprint' of the future surround keeping back 1/2" or 3/4" from the edges. The face of the concrete board should be flush with the face of the surrounding drywall and it should be anchored according to the manufacturer's specifications. Framing should be no more than 16" on center (12" is recommended) in this area and should overlap the drywall/concrete board joints. See following diagram.

PREPARATORY WORK



## PREPARATORY WORK

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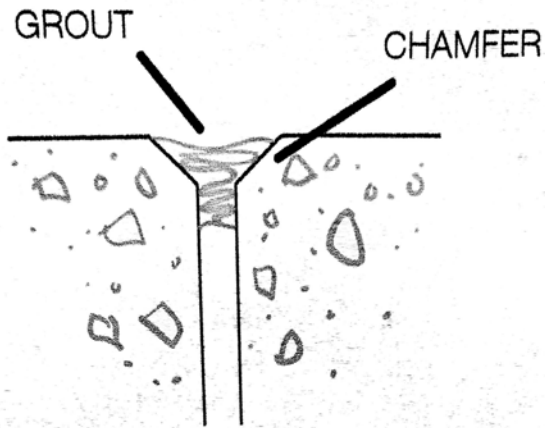
CAUTION:  
DAMAGE MOST COMMONLY OCCURS  
DURING UNPACKING. BE CAREFUL TO NOT HIT THE  
PIECES INTO ONE ANOTHER.

### **PRE-INSTALL**

Mark out (in pencil or painter's tape) the perimeter of your future surround on the wall in its correct location. Ensure that the substrate in this area is sound and ready.

Find an open indoor space, free from traffic, where all the fireplace pieces can be laid out. Carefully unpack crate and lay pieces out on a soft surface such as a moving blanket or EPS foam (this will ensure the pieces do not chip or damage flooring). Arrange pieces roughly in the order that they will be installed and familiarize yourself with all the components of your fireplace surround. Double check dimensions with those marked on your wall.





### 3. CUTTING CONCRETE

It may be necessary to cut components of your fireplace.

When you cut concrete, you will expose the interior of the concrete: the sand and aggregate. It will appear much more gray and non-uniform. You must plan your cuts so that they are hidden in the grout joints.

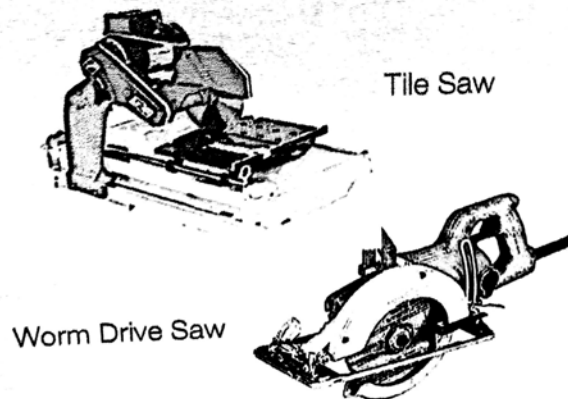
Further, when you cut, you will create a hard 90 degree edge that will be extremely brittle. We highly recommend putting a small (1/8" or less ) chamfer into the cut edge with a sanding disk. This will protect the freshly cut edge from chipping, hide any spalling that took place during cutting, and create an attractive chamfer that will hold grout.

#### Methods for Cutting

The preferred and easiest method for cutting fireplace components is done with a stone panel-cutting saw, tile or brick saw equipped with a diamond blade of adequate size for your particular needs.

Cuts can also be made successfully using a circular saw with a wet or dry-cut diamond blade. If this is the method you choose, we recommend applying a protective layer of tape to the saw guide where it will contact the concrete. Support the entire length of the piece with a sheet of EPS foam, and clamp a straight-edge to the guide of the saw. CAUTION: Thin panels may not be perfectly flat. Do not apply downward pressure on the piece, simply allow the saw to glide along the surface. Use particular care as you saw blade exits the piece as there is a tendency for the piece to crack or chip at the exit point.

Please follow manufacturer instructions and appropriate safety gear for your power tools.



# HEARTH

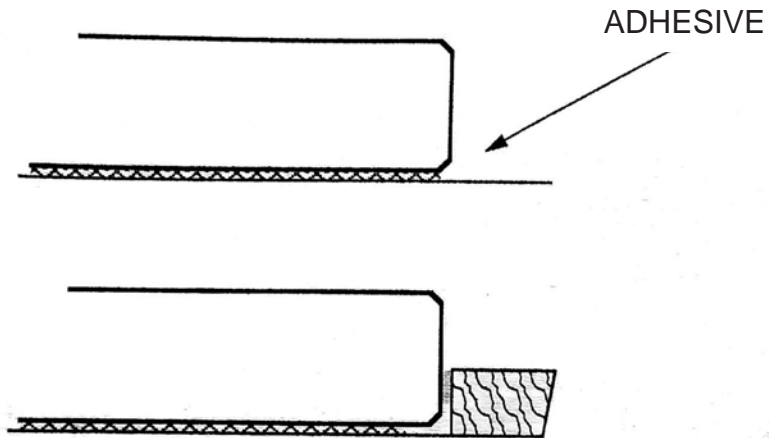


Figure 4A - Slab or Sitting Hearths set above or into typical flooring

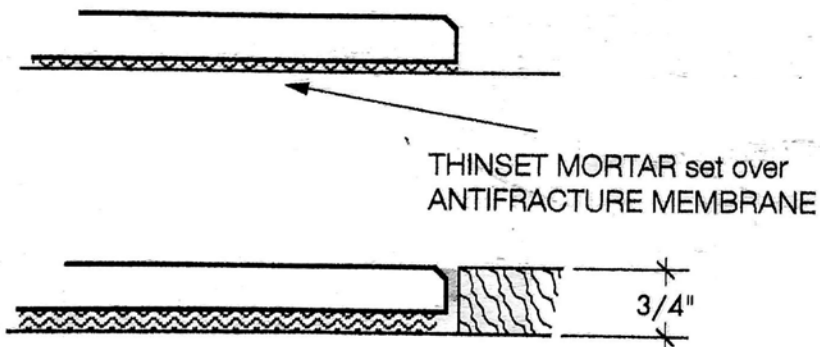


Figure 4B - Tile Hearth set above or into typical flooring

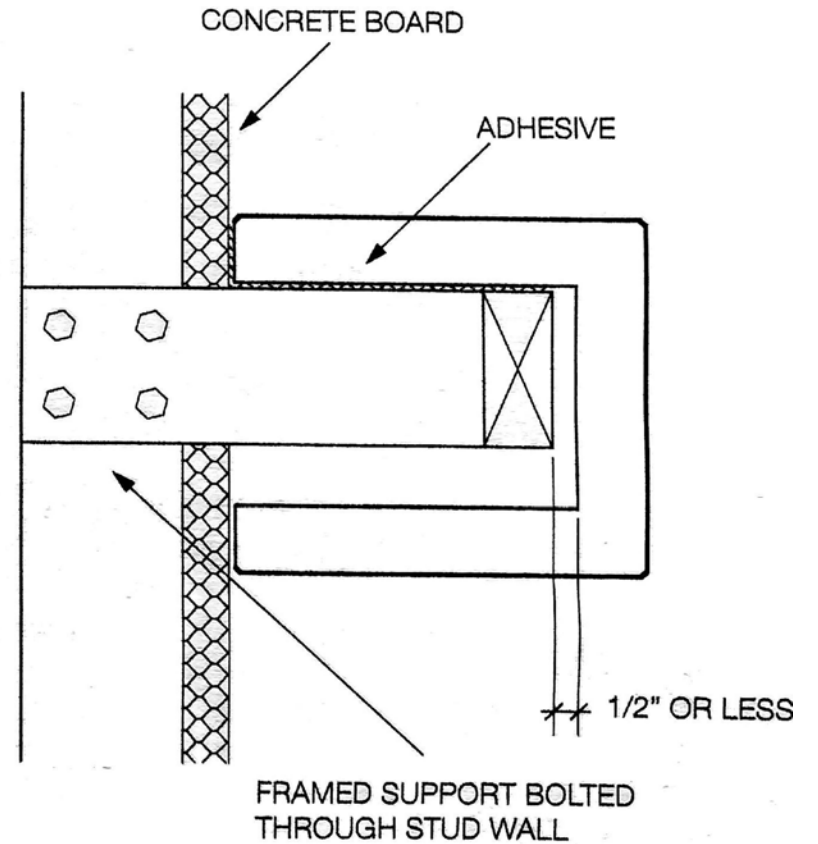


Figure 4C - Floating Hearth Installation

## TYPICAL HEARTH APPLICATIONS

### 3. HEARTH

#### Slab or Sitting Hearth

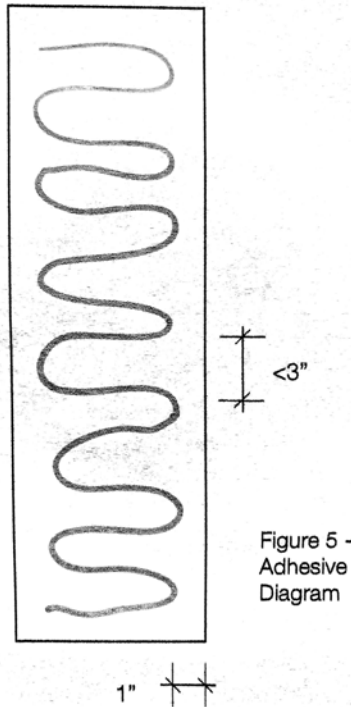
These hearths may be set onto finished flooring or subfloor.

Your slab hearth is cast to size and should need no cutting. Measure out hearth and mark out its location on the floor. Check floor level and note if leveling or shimming is necessary. If the floor slopes heavily, it may not be possible to level the hearth completely and you may opt to set the hearth slightly out of level for aesthetic reasons (ie. if the room is out of level). In any case the left-right level is more important aesthetically than the front-back.

Apply adhesive in the 1/4" - 3/8" bead at no more than 3" spacing on floor, being sure to keep back 1 1/2" from the edges. Gently lift hearth slab into place and position. At this point, there will be some play in the slab and you can shim or wiggle the hearth to your desired position.

In order to guarantee that the hearth remains true, it should be allowed to dry overnight. It is possible to proceed directly with the legs, if proper care is taken to not disturb the hearth position.

For 'Sitting Hearth' follow the same guidelines as for 'Slab'. Sitting hearths will usually be cast hollow, creating a more limited adhesion surface.



**NOTE:**

PL Premium Adhesive can be cleaned up when wet with mineral spirits. It is extremely difficult to remove when it is fully cured.

### TILE HEARTHS

These hearths may be set onto finished flooring or subfloor.

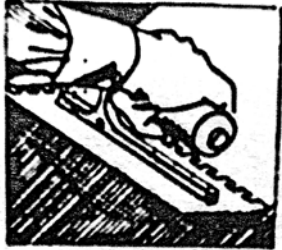
Tile hearths are comprised of standard tile sizes at 1/2" thickness. Depending on your application, it may be necessary to cut tiles to fit. Refer to the 'Cutting Concrete' section of this guide.

Tiled hearths must be set using thinset mortar. We recommend only high-quality polymer modified thinset in conjunction with an antifracture membrane. Follow the product directions.

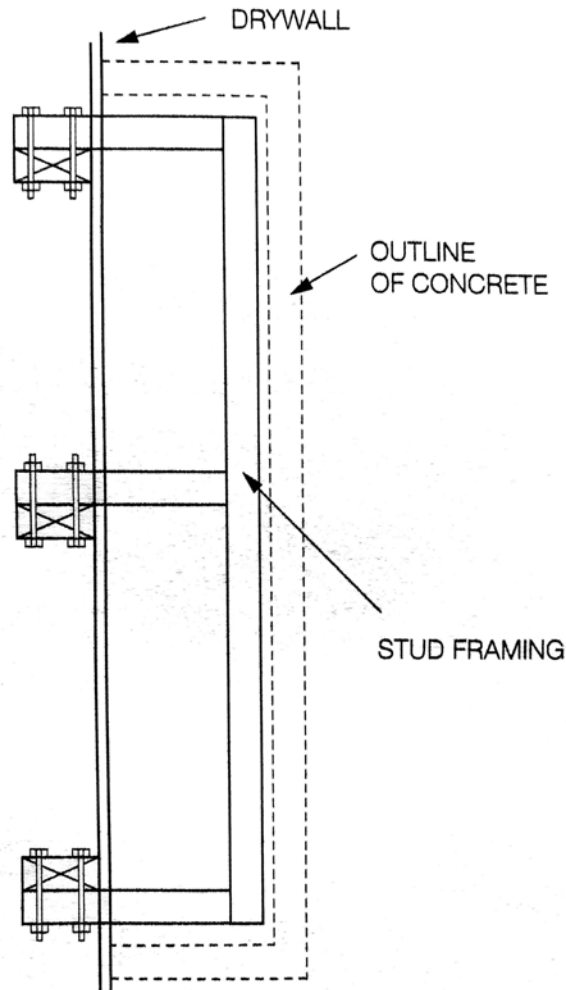
Check the level of the floor prior to installing tile and note areas that may require more or less thinset.

We recommend using a 3/8" - 1/2" notched trowel to apply thinset and 'backbuttering' (applying thinset to both surfaces). Tiles should be set, correctly placed and levelled immediately.

Thinset should be allowed to cure as per manufacturer's specifications before installing the rest of the surround.



Using a notched trowel. Angle the trowel at a 45 degree angle to ensure that a full ridge is made with the notches.



Floating hearth installation.  
Top view.

### FLOATING HEARTHES

Floating hearths are mounted on the wall above the floor and must support much of the weight of the fireplace surround. The concrete itself will not attach structurally to the wall so a framed supporting box must be constructed, The hearth will then 'cap' this box.

Each floating hearth is cast with a cavity in the back. The exact size of the cavity will depend on the size of the floating hearth that you choose.

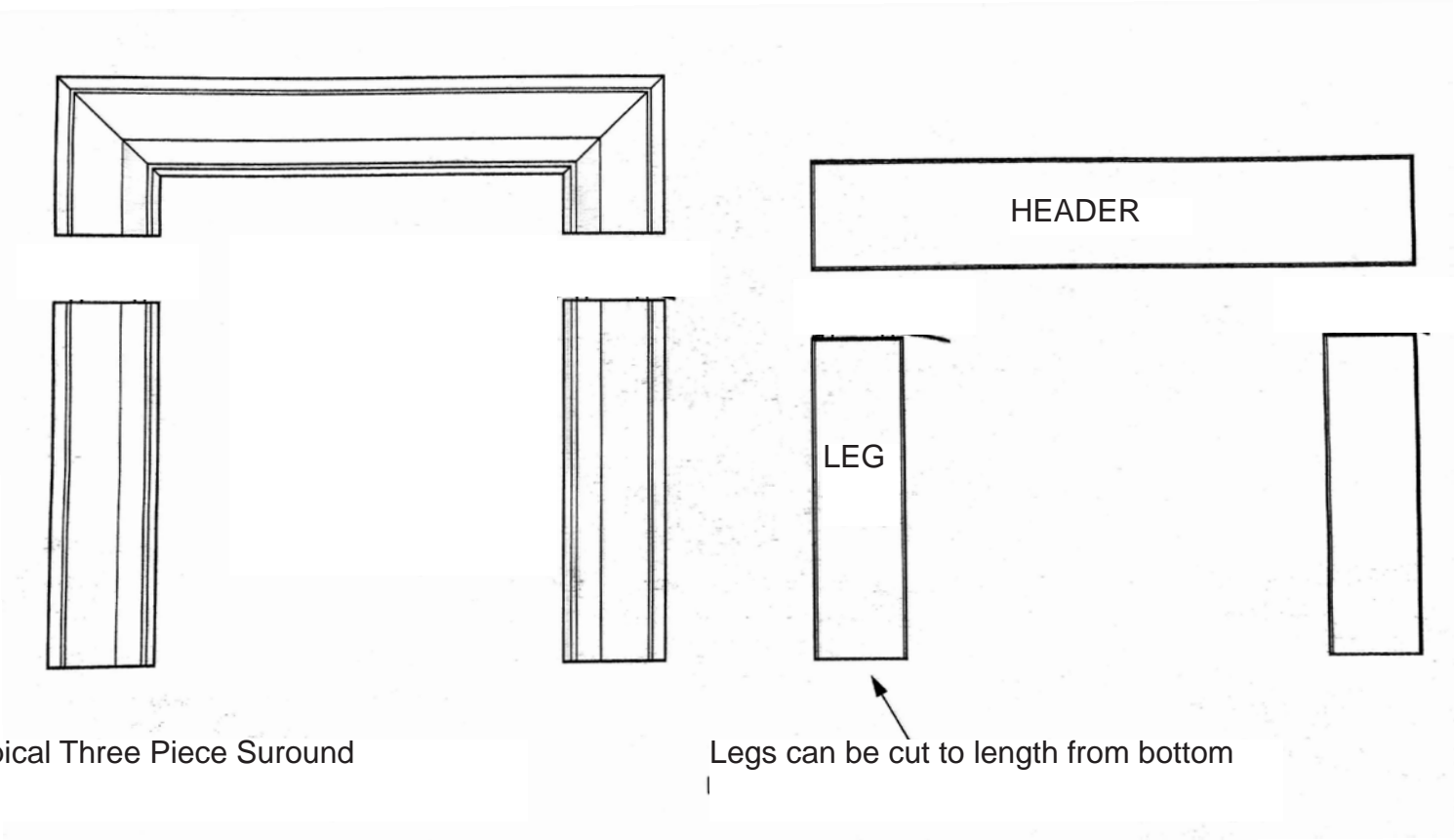
We recommend framing horizontally from wall studs to within 1/2" of the inside of the cavity. The frame should be bolted to wall studs and should be able to support the weight of two adults with no deflection.

If you are using steel stud, double up studs and use heavy gauge steel stud.

Construction adhesive can then be used to attach the hearth to the frame.

SURROUND

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Typical Three Piece Surround

Legs can be cut to length from bottom

## 4. SURROUND Three - Piece Surrounds

Three-piece surrounds are designed at fixed widths. The one-piece header provides for an easy installation and a seamless look.

### Installing legs

Place 1/6" spacers between pieces to prevent chipping. CAREFULLY lift legs into position on the hearth (when concrete is placed on concrete, the risk of chipping is at its highest). Level legs front-back and left-right and square them to each other and to the hearth. The wall may not be straight, so squaring to it is not recommended. Shim under the legs if necessary (avoid hammering shims in if at all possible - there is the risk of chipping). Double-check the dimensions between the outside of the legs with your header piece (these dimensions must match exactly!)

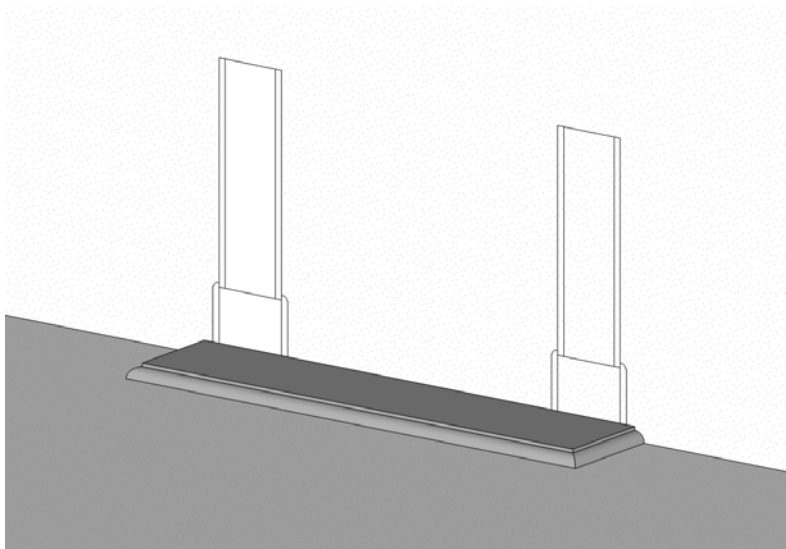
When you are sure that the legs are located correctly, mark out the bases of the legs on the hearth or floor with tape, and scribe the inside line of the legs on the wall. It is also a good idea to secure shims in place with tape. Then remove legs.

Install 2x4 pieces with screws and adhesive inside marked lines.

Apply adhesive to the wall in leg location, carefully place legs in position and drill hole in side of leg 3/4" from edge and screw into 2x4 piece. DO NOT OVER-TIGHTEN SCREW!

It is important to proceed directly to the header before the adhesive dries, so that any adjustments that need to be made can be done while there is still play in the legs.

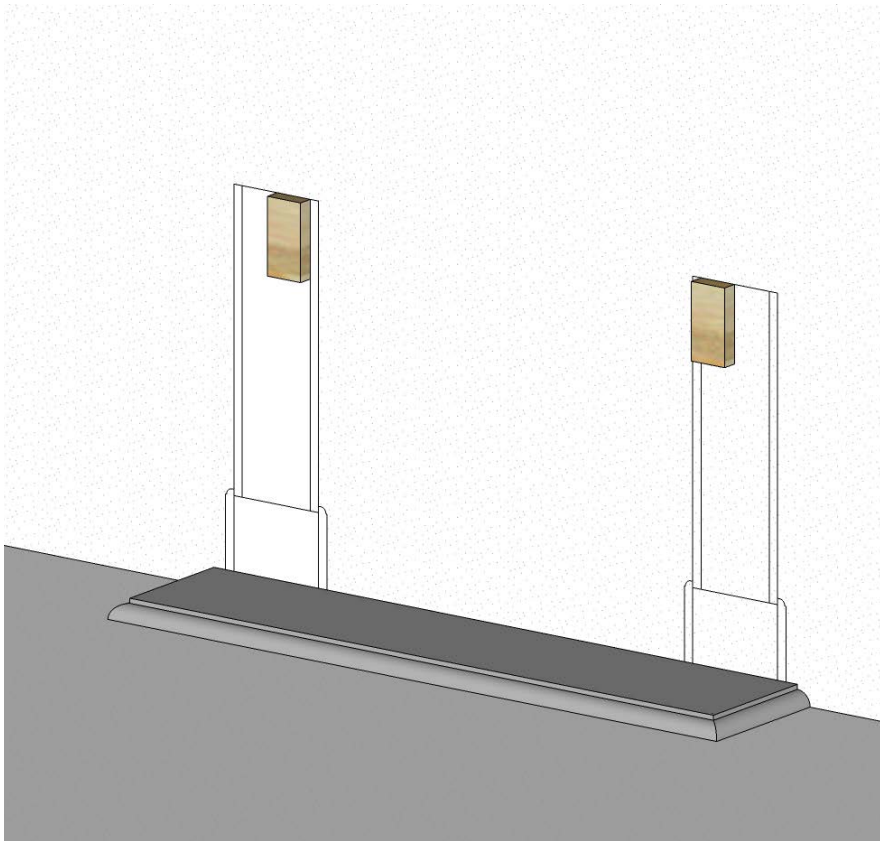
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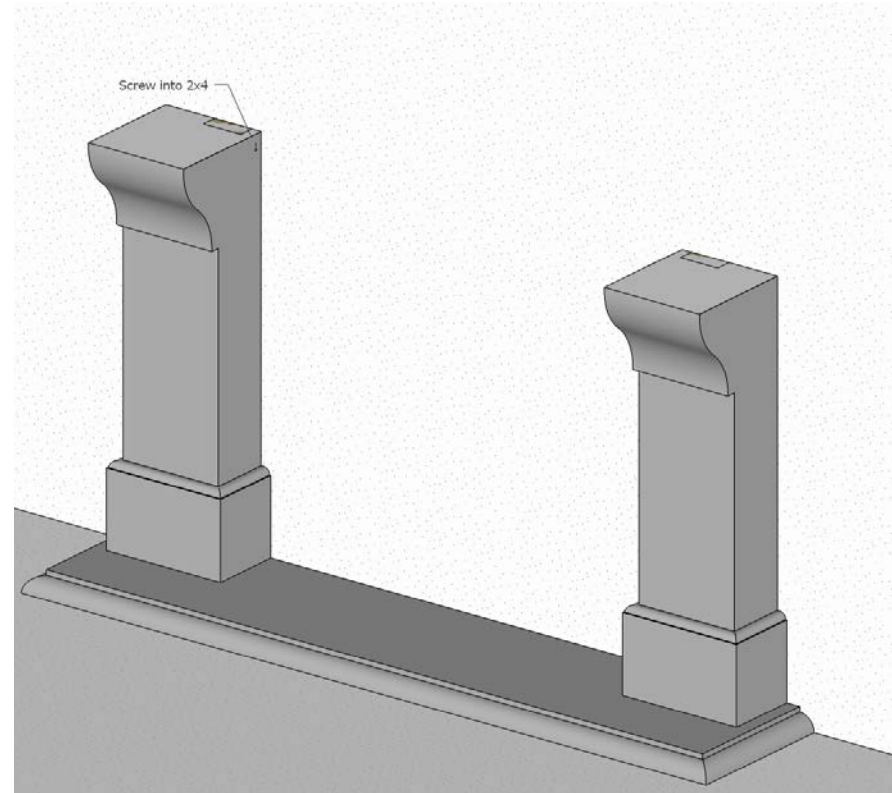
Mark out the legs

## SURROUND

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Install 2x4 pieces inside marked lines



**CAUTION:** Never allow installed legs to dry overnight before placing the header. You may risk setting the legs out of alignment.



### **Dry fitting and installing Header**

Your one-piece header, or assembled three-piece header may be installed in the following fashion:

Carefully lift and place the header on top of the legs, lowering gently. Using an intermediary stage, like a couple of saw horses, can be helpful here. Once the header's weight is supported by the legs, gently slide it into position and firmly against the wall. Align the legs, one-at-a time, and ensure that all pieces come into proper alignment. If they don't align, you may have to remove the header and reposition on or both the legs.

After all pieces are perfectly aligned, scribe the underside and top of the header on the wall in pencil. Then, carefully lift the header off and place it back on the floor or saw horses. Install 2x4 pieces inside marked lines. Apply adhesive to the wall and tops of legs, again, keeping 1" away from the edges. Lift and place the header and position correctly. It may be necessary to shim under the front of the header where it meets the legs.

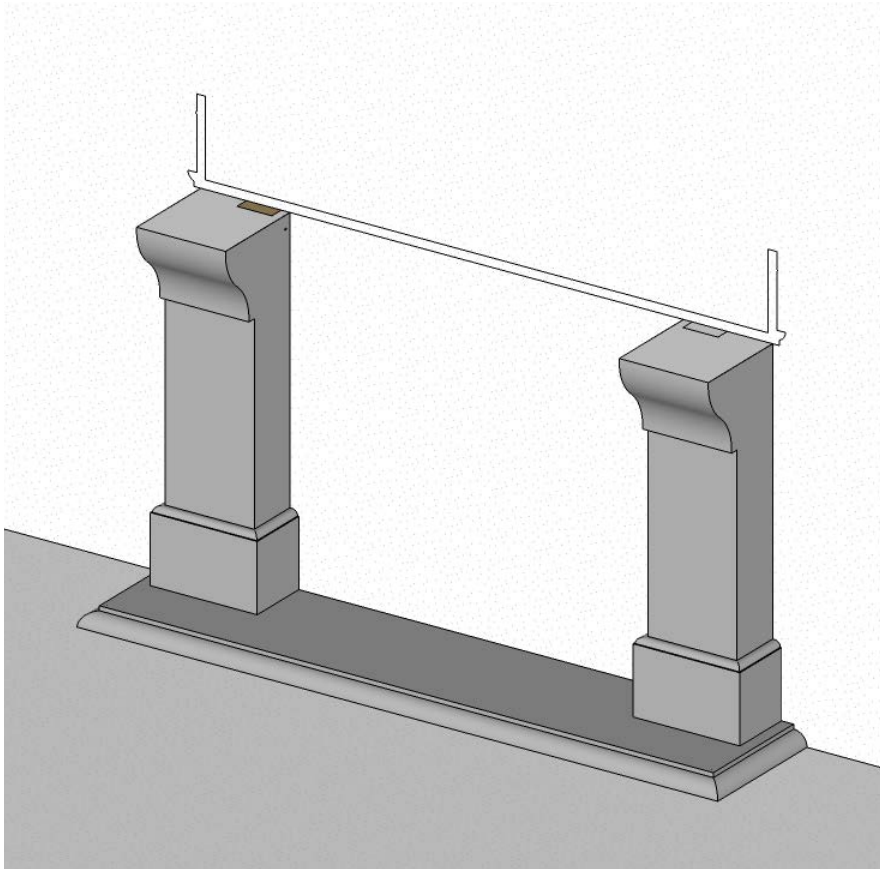
Drill holes and screw header into 2x4 pieces.

**TIP:**

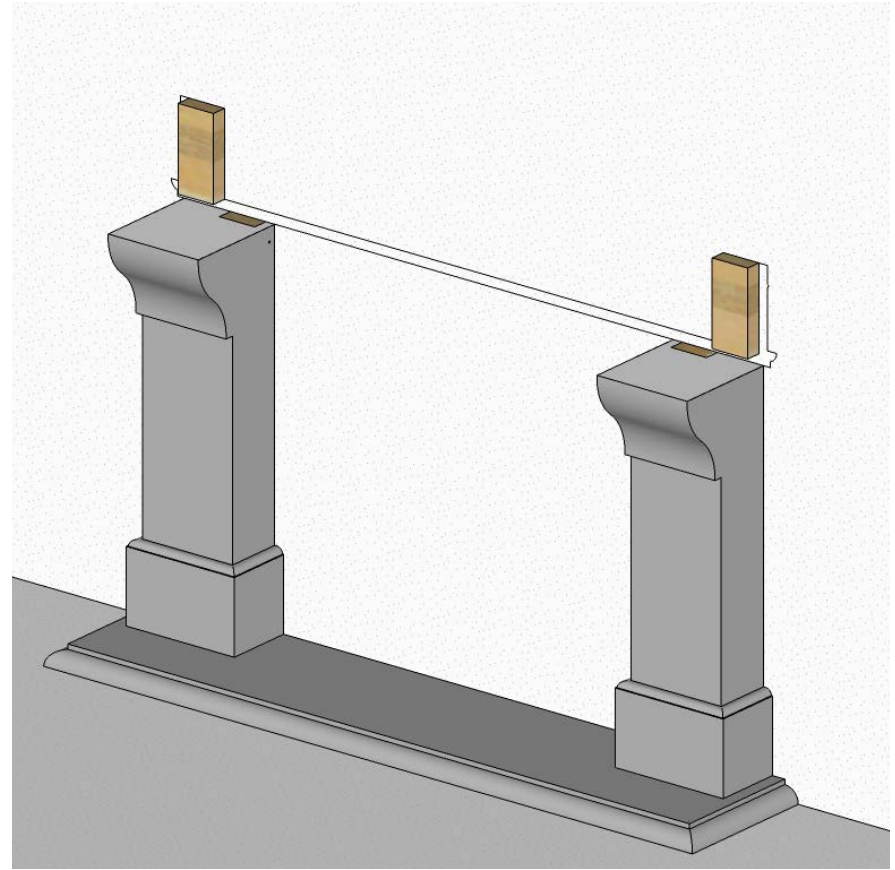
We recommend that you place you 1/16" to 1/8" shims on top of the legs prior to placing the header. This will help to protect the pieces from chipping and allow for your final grout joints.

## SURROUND

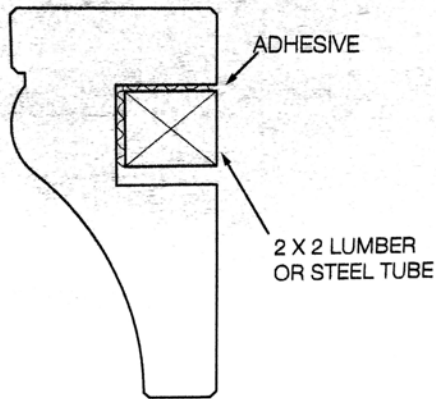
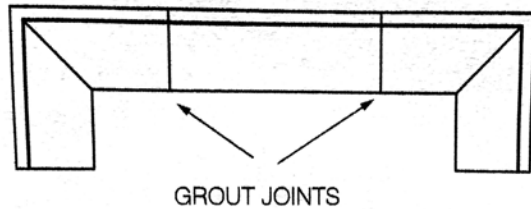
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Mark out header



Install 2x4 pieces inside marked lines



Three piece header assembly

### Five-piece Surrounds

Five-piece surrounds are distinguished by their three-piece header. This allows for maximum dimensions versatility.

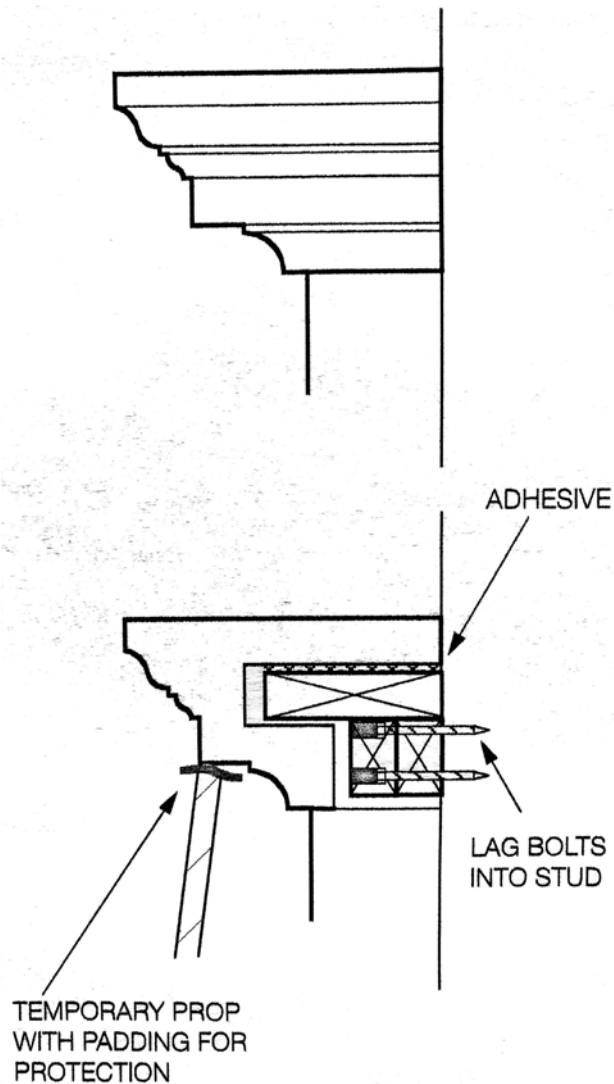
If you have chosen a surround with a three piece header, it is likely that you will need to cut the centre section to length. If this is the case, measure and cut as described in the 'Concrete Cutting' section.

NOTE It is important when measuring to allow for grout lines if desired. We recommend a minimum of 1/8" to allow for adequate grout adhesion. It is possible, however, to fit the pieces tight.

Our recommended method for installation for the header is to preassemble and glue the three pieces together prior to installation. This is done by placing the three pieces upside-down on a flat surface and applying glue between the pieces.

To ensure a good glue bond, roughen or score the contact surfaces. Additionally a 2x2 piece of lumber or tubular steel should be glued into the channel on the back of the pieces. The pieces should be aligned, double checked for dimensions and squareness, and then left to dry overnight.

When fully cured, the header can be installed like the Three-Piece Surround



Mantel Installation

## 6. MANTEL

### Special Consideration for Mantels

Mantels tend to be front-heavy and therefore require adequate adhesion and support. In addition to the usual adhesive bond, you must provide an adhesive bond perpendicular to the tipping angle. This can be achieved by fashioning a lintel out of dimensional lumber that will fit inside the mantel. The larger the horizontal shelf that is created by this lintel, the more secure the mantel will be.

### Dry-fitting and Installing Mantel

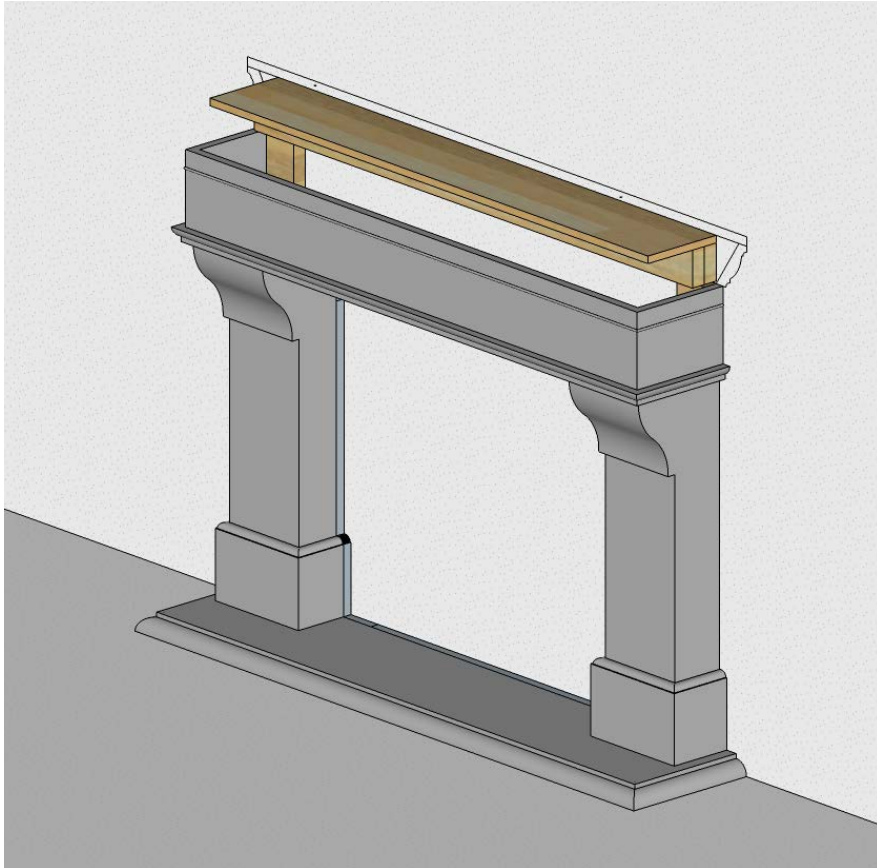
Repeat dry-fitting and placing procedure from the header section. Again, use shims or cardboard on top of the legs or header to protect from chipping. When proper placement has been achieved, remove mantel.

Install the mantel, applying generous adhesive on the wall, lintel shelf and tops of legs or header. It may be necessary to use 2x3's as temporary props under the nose of the mantel. (Be careful to protect mantel and hearth or floor with cardboard or foam, where the props meet the concrete)

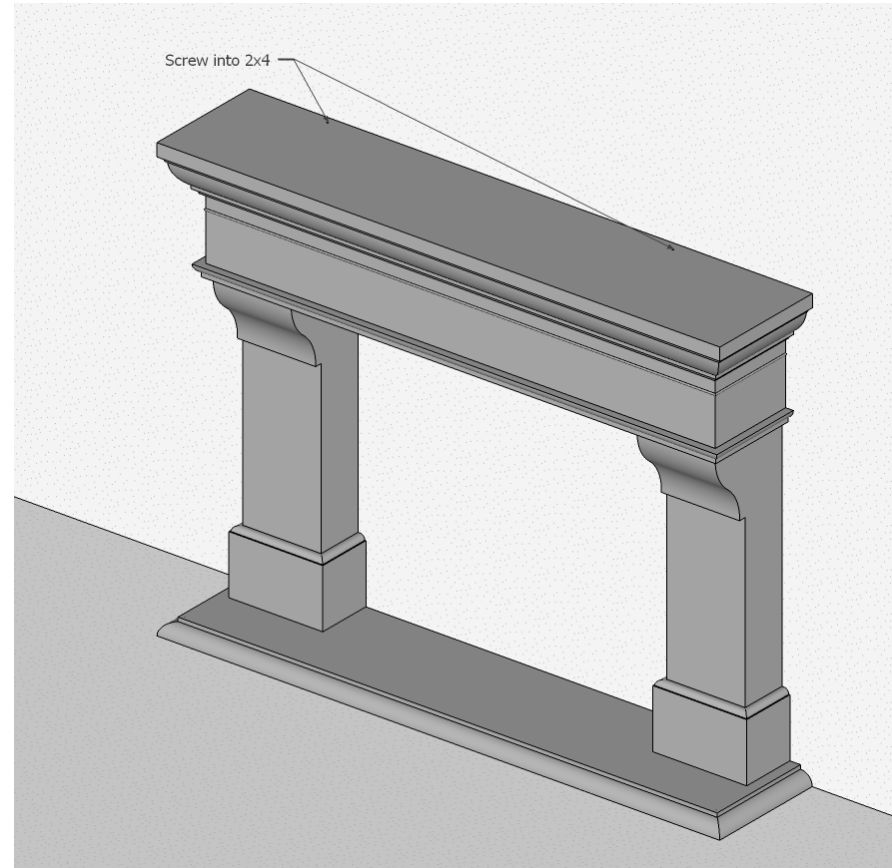
Drill holes in top of the mantel and install 1/8" finishing screws to secure to 2x4 lintel. These holes can be filled in with grouting at a later stage.

# MANTEL

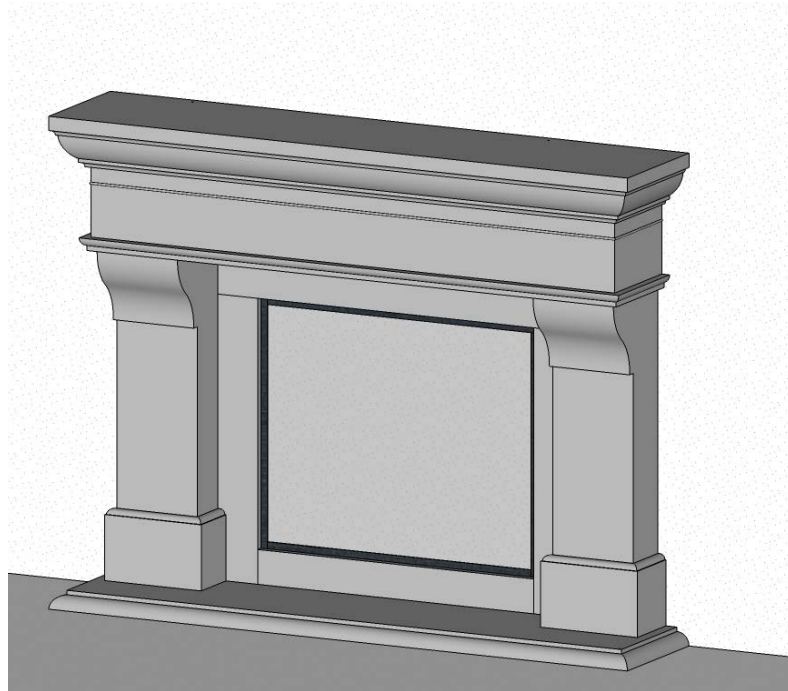
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Install Lintel



Secure with 1/8" finishing screws to lintel



Typical Infill Panel Configuration

**TIP:** Hide cut edges in grout lines!

**NOTE:**

Though dimensioning and squaring is important, ultimately it is 'how it looks' that matter the most. Adjusting pieces slightly, splitting differences and 'fudging' for aesthetic reasons are perfectly sensible practices.

### 7. INFILL PANELS

Optional trim panels are available to provide maximum fitting flexibility to your fireplace surround. They consist of 1" panels of standard dimensions that may be trimmed to suit your application.

#### Sizing and Cutting Infill Panels

Determine the desired final opening size of your fireplace.

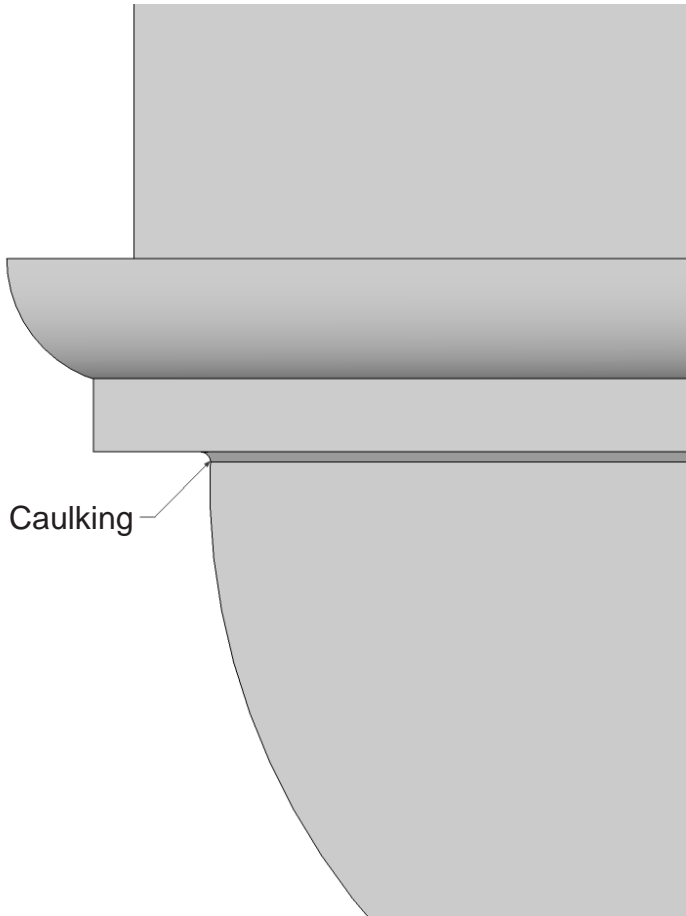
The location of the fireplace insert or firebox opening will determine whether you require 1,2,3 or 4 panels.

Measure the spaces between the surround and the opening. We recommend allowing 1/8" tolerance which will become your grout line.

Cut pieces to fit (refer to Concrete Cutting section). Remember that you will need to hide the cut edges in the grout joints.

Dry-fit each piece in its appropriate position being careful not to chip corners. When you are satisfied that all the pieces will fit, apply adhesive to the pieces and place them, starting at the bottom. **IN CASE OF A GAS UNIT - DO NOT APPLY ADHESIVE TO THE METAL HOUSING - IT MAY CAUSE TOXIC FUMES.** If the metal housing is the only substrate available then apply a thinset mortar to this area following product directions.

You can insert a wooden screw into each joint to hold each piece until the adhesive is dry.



### 8. Caulking

We recommend using sanded caulking rather than grout on the fireplace joints as it reduces cracking and shrinkage over time. However, the area around the gas unit with the infill panels should be grouted or left clear. **Do not use caulk between the infill panels and the opening of the fire box or gas unit.**

#### Step by Step Caulking Directions

Apply Caulking to joints roughly 2" - 24" at a time.

Press caulking into joint using your finger.

Using a damp sponge lightly wipe over caulking until smooth and consistent.

Rinse sponge.

Wipe caulking residue from concrete surface using a clean cloth.

Repeat for the entire fireplace.

DO NOT ALLOW WATER TO DROP OR POOL ON CONCRETE SURFACE

DO NOT ALLOW CAULKING RESIDUE TO DRY ON CONCRETE SURFACE

Allow caulking to dry overnight - there may have been shrinkage. Inspect and repeat the above process where necessary.