P85 PreCast Oven

P85 PRE-CAST OVEN KIT
Instruction Booklet
The PreCast Oven Kit is a great design; we’ve done all of the hard work - you get the fun of putting it together.
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Our PreCast oven is easy to assemble, fits into a small space and heats up quickly. Perfect for the spontaneous entertainer.
Firstly, our congratulations and gratitude for the purchase of your D105 PreCut Brick Oven Kit! We have spent years crafting and perfecting our PreCut Brick Oven Kits, taking suggestions from customers and mentors, to create a product that we are truly proud of. We’re very blessed to say that we now have thousands of happy customers around the world, enjoying time with family and friends over meals cooked in the most authentic way possible.

That is what it’s all about in the end - you’re not just building a Wood Fired Oven. You’re building something that’s going to bring your family and friends together in a shared cooking experience. You’re building something that you will spend quality time with the people that you love around, where you are forced to slow down and just enjoy what you’ve built. You’re building something that you can use to love and serve others; it’s rare to see someone fire up their oven just to cook for themselves alone. It’s always about community, it’s about loving and dare I say, spoiling the people closest to you.

If there’s a piece of outdoor equipment that draws people together more than an authentic Wood Fired Oven, I’m yet to find it. May your oven bring you, your family and friends nothing but joy (and the occasional burnt crust) for many years to come.
Before You Begin

COLD CLIMATES

If you’re building a Wood Fired Oven in a region that experiences ‘freeze-thaw’ conditions, where the frost is so severe that it penetrates deep into the ground, this is something that you need to be aware of when deciding on where and how to build your Wood Fired Oven.

The refractory bricks and insulation that make up our Wood Fired Oven Kits are very porous, so they will soak up rain or melted snow that falls on them. This is not a problem in itself - if you fire the oven up after the oven has absorbed some water, the heat will drive the water out and the oven will return to its original state. However, if your oven has gotten wet and experiences a deep frost, the water held in the fire bricks and insulation may freeze and expand, causing serious damage to the oven.

The sure way to prevent this is to build the oven into an enclosure that keeps it completely dry, so that when the cold weather comes, it will have no adverse effect on the oven at all. If this is not possible, an alternative is to fire the oven thoroughly before the end of Autumn, then remove the flue and protect the oven with a suitable weatherproof cover for the winter. The key is to keep the oven completely dry in deep cold conditions.

USING OUR INSTRUCTIONS

Building a Wood Fired Oven is a hugely enjoyable process, providing you take your time and pace yourself. The best way to prepare for the build is to first watch through the entire Instructional Video Series, from start to finish. Then, read through these instructions in full so that you have a clear understanding of the process.

When you actually start building, take 15 minutes and watch the video that covers the part of the build that you’re up to. These instructions are to help remind you of what you learned and give you more details where they are needed. Remember, there is information in these instructions that is not in the videos, and vice versa.

That being said, if you’ve watched the videos, read the instructions and still feel even a little bit confused about something, please call us right away. Part of what you’re paying for when you purchase one of our kits is quality customer service - we are here to make sure you succeed in your Wood Fired Oven Building adventure!
Updates

We are on a continuous search for ways to improve our products, so that we’re always giving our customers the very best product that we can. These changes are always small and incremental - tested by us before being rolled out to our customers. This is where we will make notes of these changes, where things have evolved since the instructional videos were recorded.

i. The Refractory Mortar used to lay the castings and bricks in the oven is now a two-part mix (in the videos it was shown as a one part dry mix). This is to increase the shelf-life of the mortar, by keeping the active ingredient separate in another bag. Close the tops of these bags after opening to help them keep.
Safety Warning

A MAJOR CAUSE OF UNINTENDED OVEN-RELATED FIRE IS FAILURE TO MAINTAIN REQUIRED CLEARANCES (AIR SPACES) TO NEARBY COMBUSTIBLE MATERIALS.

IT IS OF THE HIGHEST IMPORTANCE THAT THIS OVEN BE INSTALLED ONLY IN ACCORDANCE WITH THESE INSTRUCTIONS.

IF THIS OVEN IS NOT PROPERLY INSTALLED, A FIRE MAY RESULT. TO REDUCE THE RISK OF FIRE, FOLLOW THESE INSTALLATION INSTRUCTIONS.

PLEASE READ THE FULL SET OF INSTRUCTIONS AND WATCH THE INSTRUCTIONAL VIDEOS BEFORE INSTALLING AND USING YOUR OVEN.

FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN FIRE, CARBON MONOXIDE POISONING OR EXPLOSION LEADING TO PROPERTY DAMAGE, BODILY INJURY, OR EVEN DEATH.

If you have any questions at all regarding the safe installation of your oven, please don't hesitate to contact us, we will be very happy to assist you.
Clearances to Combustible Material

A major cause of oven-related property fire is failure to maintain the required clearances (air spaces) between the oven and combustible materials. When you’re planning the location for your oven, ensure that you maintain clearances to all combustible materials, including but not limited to nearby walls, posts, ceiling structures and vegetation.

If the oven is being built in close proximity to a structure (eg. beneath a pergola), the clearance from combustible materials to the flue can be reduced by using a twin or triple skin ventilated flue system.

If you’re planning to do this the flue must be specified and installed by a licensed plumber to ensure that the flue system is compliant with the relevant standards and local laws for your area.

*If in doubt, contact a qualified plumber or your local fire authority for more information.*

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**Minimal Clearances**

- 50mm clearance to combustibles from all sides of the insulated oven dome.
- 400mm clearance to combustibles above the insulated oven dome.
- 750mm clearance to combustibles from all sides of the uninsulated stainless steel flue.
- 700mm clearance to combustibles from all sides of the vent bricks and precast flue gallery.
- Complete clearance above the flue, maintaining the 750mm radius around it.
- Non-combustible floor material should extend 1200mm from the front of the oven, for the width of the oven dome, to protect against falling hot embers.
Safe Installation Instructions

DUST EXPOSURE – RESPIRABLE CRYSTALLINE SILICA

Inhalation of airborne dust may cause irritation to the mucous membrane and upper airways. Symptoms can include coughing, sneezing and breathing difficulties. Repeated exposure to respirable silica may result in pulmonary fibrosis (silicosis). Silicosis is a fibronodular lung disease caused by deposition in the lungs of fine respirable particles of crystalline silica. Principal symptoms of silicosis are coughing and breathlessness.

The following materials in your Wood Fired Oven Kit may contain respirable crystalline silica and a suitable dust mask should be worn while handling them;

- Hybrid Refractory Bedding Mortar (marked Airset Mortar)
- Refractory Mortar Part A
- Refractory Mortar Part B
- Refractory Castable
- Fire bricks (when cutting or shaping them with a grinder)
- Perlite
- Calcium Silicate Board

While the Ceramic Fibre Blanket does not contain respirable silica, the fibers are very irritating to the respiratory tract and can cause irritation in the nose and throat, and chest discomfort. A suitable dust mask should be worn when working with the ceramic fibre blanket, until the first layer of Perlite Render has been applied to seal the ceramic fibre blanket from the atmosphere.

EYE PROTECTION

This is a very hands-on project and you are advised to wear safety glasses when mixing any of the materials or cutting/grinding bricks. This also applies to applying the ceramic fibre blanket insulation, which is irritating to the eyes. If in doubt, wear safety glasses!

SKIN PROTECTION

The mortar mixture that you’ll use to lay the fire bricks in your Wood Fired Oven Kit is quite alkaline, and repeated exposure to your skin can result in chemical burns. The same goes for the Refractory Castable and Perlite Render mixes. This is compounded by having to handle wet bricks, which (if done without gloves) makes your skin softer and more vulnerable to being attacked by these materials. **IGNORE THIS AT YOUR OWN RISK! THE AUTHOR HAS PERMANENT SCARRING TO REMIND HIM OF THE IMPORTANCE OF WEARING GLOVES.**

To avoid this, wear rubber ‘washing up’ gloves underneath ordinary gardening gloves to protect your skin. Rubber gloves alone may not work well for long, as handling the fire bricks can wear straight through them very quickly. There are some heavy duty rubber gloves available at some supermarkets and hardware stores that work very well by themselves, as you will see in the instructional videos.

The key is to keep your hands dry, and if you notice a hole in the rubber gloves you would be well advised to replace them immediately. Avoid rubber gloves with an elastic cuff at the wrist – these can rub your skin and leave it exposed to attack from the alkaline material you’re handling. If your hands get wet inside the gloves, remove the gloves, dry your hands and put on a new pair of gloves, turning the others inside out to dry so they can be used later. For this reason it’s worth having two pairs of rubber gloves.

The Ceramic Fibre Blanket can be irritating to the skin, with some people experiencing rash symptoms, so we have provided you with two large plastic gloves that loop over your neck and cover the length of your arms. Wear these when handling the Ceramic Fibre Blanket.
Safe Usage Instructions

WARNING: PLEASE READ ALL OF THE INSTRUCTIONS BEFORE INSTALLING AND USING YOUR WOOD FIRED OVEN. FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN FIRE, CARBON MONOXIDE POISONING OR EXPLOSION LEADING TO PROPERTY DAMAGE, BODILY INJURY, OR EVEN DEATH. SAVE THESE INSTRUCTIONS.

If your oven is not installed properly, an unintended fire may result. To reduce the risk of such a fire, please follow our installation instructions carefully. It is critical to use only the materials specified and provided to construct the oven.

Contact your local Building Authority, or Fire Authority regarding local laws for installation of this oven in your area.

OVEN IS HOT WHILE IN OPERATION. KEEP CHILDREN, CLOTHING AND FURNITURE WELL CLEAR. CONTACT WITH UNINSULATED PARTS OF THE OVEN INCLUDING THE BRICKWORK AND CHIMNEY FLUE MAY CAUSE SKIN BURNS.

DO NOT BURN FLAMMABLE LIQUIDS OR WASTE MATERIALS IN THE OVEN.

DO NOT CONNECT THIS OVEN TO A FLUE ATTACHED TO ANOTHER WOOD BURNING APPLIANCE.

Keep children and pets away from the oven when it is hot, DO NOT leave children near the oven unsupervised.

Use good quality firewood for burning only. DO NOT USE charcoal, pressure treated timber, sappy timber, laminated timber or any material other than well dried firewood. This does not apply to kindling.

DO NOT USE liquid fuel (firelighter fluid, gasoline, lantern oil, kerosene or similar liquids) to start or maintain a fire.

BEWARE of very high temperatures in the oven and use long oven mitts or welding gloves rated above 400°C to handle pots, pans and uninsulated tools.

DO NOT put any unprotected part of your body inside the oven while it is hot. The oven can remain hot without a fire.

DO NOT close the oven door fully while a fire is burning in the oven. Closing the door fully will cut off oxygen to the fire, causing the fire to flare up violently if the door is then removed. This does not apply to hot coals.

Dispose of ashes using a metal shovel and place in a metal bin with a snug fitting lid. The container should be stored on a non-combustible surface, away from all combustible materials. It is not necessary to empty the ashes from the oven each time it is used, empty as required.

Ensure the ashes are completely cold before disposing of them in an appropriate manner.

VERY IMPORTANT - BEWARE of sparks and embers flying out from the oven opening, as firewood can crackle and pop, sending embers flying. Ensure no combustible materials are within range of the oven at any time.

DO NOT use water to extinguish the fire or cool down the oven.

DO NOT fill the clearance spaces around the oven with sand, insulation or any other material.

Follow the instructions for Curing the Oven with care. Failure to follow these instructions may cause damage to the oven, poses a safety risk to those nearby, and can void the warranty.

FOR YOUR SAFETY do not store or use gasoline or other flammable liquids or vapours in close proximity to the oven.

Ensure that an able bodied person of suitable age, who’s judgment is not impaired by alcohol, drugs or medication is present to monitor and control the fire from the time that it is lit to the time that it is extinguished.

Ensure that a suitable dry chemical or CO2 fire extinguisher is on hand when the oven is lit.

Inspect the flue regularly for any buildup of soot, and remove excess soot if it is found.

If the oven is being built indoors, check with your plumber to ensure that the building has adequate ventilation to feed the fire without lowering the quality of air in the room, or risking a buildup of carbon monoxide.
Limited Warranty

The Fire Brick Company, a manufacturer of wood fired ovens, warrants its ovens (henceforth referred to as the Oven) to be free from defects in materials and workmanship for a period of (1) one year from the date of purchase.

QUALIFICATIONS TO THE WARRANTY

The complete Product Warranty outlined above does not apply under the following circumstances:

1. The Oven was not installed in accordance with The Melbourne Fire Brick Company installation instructions and local building codes.
2. The Oven has been subjected to non-standard use, such as burning fuels with abnormal burning characteristics including but not limited to; driftwood, charcoal, plywood and wood Ovens using a binder that may burn at excessive temperatures and cause damage to the Oven.
3. This Warranty does not apply to normal wear and tear.
4. This Warranty does not apply to any cracking caused by over-firing or the failure to follow a proper curing schedule.
5. On parts that would be normally worn or replaced under normal conditions.
6. Normal cracking due to expansion and contraction stress relief in the dome, brickwork, precast flue gallery or floor tiles.

LIMITATION ON LIABILITY

It is expressly agreed and understood that The Melbourne Fire Brick Company's sole obligation and purchaser's exclusive remedy under this Warranty, under any other warranty, expressed or implied, otherwise, shall be limited to replacement, repair, or refund, as specified above, and such liability shall not include, and purchaser specifically renounces any rights to recover, special, incidental, consequential or other damages of any kind whatsoever, including, but not limited to, injuries to persons or damage to property, loss of profits or anticipated profits, or loss of use of the Oven.

In no event shall The Melbourne Fire Brick Company be responsible for any incidental or consequential damages caused by defects in its Ovens, whether such damage occurs or is discovered before or after replacement or repair, and whether or not such damage is caused by The Melbourne Fire Brick Company's negligence. Some regions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. The duration of any implied warranty with respect to this Oven is limited to the duration of the foregoing warranty. Some regions do not allow limitations on how long an implied warranty lasts, so the above may not apply to you.

INVESTIGATION OF CLAIMS AGAINST WARRANTY

The Melbourne Fire Brick Company reserves the right to investigate any and all claims against this Warranty and to decide upon method of settlement.

HOW TO REGISTER A CLAIM AGAINST WARRANTY

In order for any claim under this Warranty to be valid, The Melbourne Fire Brick Company must be notified of the claimed defect in writing or by telephone to The Melbourne Fire Brick Company, Factory 11/167 Princes Hwy Hallam, VIC 3803. Claims against this Warranty in writing should include the date of installation, and a description of the defect.
P85 Layout Drawing
Our Precast Oven Kit is the result of years of design and development and is something that we at The Fire Brick Company are immensely proud of.
What’s Inside the Kit

CALCIUM SILICATE BOARD
3 x Calcium Silicate Boards 1000x500x50mm
This is the 50mm thick insulation board layer that you will install underneath your oven; it comes with printed paper templates & drawing pins so that you can pin the templates onto the CalSil board and cut out the pieces you need, following the lines shown on the paper templates.

PRECAST SECTIONS - OVEN DOME
The dome of the oven is made up of four PreCast sections, which lock together using custom designed ‘tongue & groove’ joints. The first section is the entry arch, made to fit the golden ‘63 percent’ rule, with the height of the opening set at 63% of the internal dome height. The dome itself is comprised of three shell pieces, made in a special elliptical shape for optimal heat distribution, with a wall thickness of 65mm. This wall thickness gives you the perfect balance of quick heat up time, with long heat retention for roasting, bread baking and slow cooking. The PreCast sections are made from a high grade refractory castable, reinforced with stainless steel fibres for strength and durability. Our PreCast sections are all rated to over 1350°C.

FIRE BRICKS - FLOOR TILES
All the Floor Tiles are cut to size and ready to lay. The fire bricks used in the oven floor are 38% Alumina, rated to 1350°C with an exceptionally hard wearing surface, and are 50mm thick.

FIRE BRICKS - VENT ARCHES
The bricks for the Vent area that form the mouth of your oven are all cut precisely to size from fire bricks rated to 1350°C, ready to lay. The Vent Arch Bricks are designed to ‘key’ into the PreCast Entry Arch for strength and stability. You’ll find a long, narrow cardboard box which contains the small bricks that make up the actual arch, with the bricks numbered 1-8. Discard the brick marked ‘X’.

FORMWORK - VENT ARCH
We provide CNC machined timber formwork to build the Vent Arch around, to ensure that your brickwork is exactly as per our design. The Formwork is clearly marked to allow you to position the bricks accurately, and shows the height and thickness of each mortar joint.

FIBREGLASS DOME FORMWORK
To pour the keystone that locks the PreCast Sections together we provide you with a custom made fibreglass dome form that follows the same curve as the PreCast Sections for a neat finish.
What's Inside the Kit

REFRACTORY CASTABLE
Novaref Refractory Castable: 1 x 6kg bag
Refractory Castable is premixed high temperature concrete, which you will use for pouring the dome keystone.

HYBRID REFRACTORY BEDDING MORTAR
Dry Airset Refractory Mortar: 1 x 10kg bag
This is the mortar you will use to lay the fire brick tiles that make up the oven floor. Please be aware that you will need to mix the Airset mortar with General Purpose Cement, Lime and Washed Sand* in the ratio shown on the bag. This makes a smooth hybrid mortar mix perfectly suited to bedding down fire bricks for oven floors.

REFRACTORY MORTAR (TWO PART MIXTURE)
Refractory Mortar Part A: 1 x 25kg bag
Refractory Mortar Part B: 1 x 9kg bag
This is the mortar you’ll use to lay the bricks for the Vent Arch, to seal the external joints between the PreCast Dome Sections, and to install the PreCast Flue Gallery.

PRECAST FLUE GALLERY
The PreCast Flue Gallery is the molded section that fits over the brick arches at the front of the oven. Made from refractory castable and reinforced with stainless steel fibres, it’s fitted with 6” Stainless Steel Flue sleeve, ready to attach the flue section onto. A brushed stainless steel ring covers the flue expansion joint.

CERAMIC FIBRE BLANKET
Two 3.6m rolls of 25mm thick Ceramic Fibre Blanket are provided, giving you two full layers over your oven dome for 50mm coverage, ensuring your oven retains plenty of heat for whatever style of cooking you’re doing.

PERLITE RENDER
LiteFill Perlite: 2 x 100L bags
This is the material you will use to cover the Ceramic Fibre Blanket layer, which you will be mixing with GP Cement, Lime and Washed Sand* to make a high-build Render mixture. There is enough Perlite in the kit to build up a 50mm shell of render over the oven dome, with plenty left in reserve if some is wasted on accident.

* Sand, Lime and GP Cement are available at hardware stores and need to be purchased in addition to the kit.

STAINLESS STEEL FLUE & HAT
1 x 6” Stainless Steel Flue - 900mm Length
1 x 6” Stainless Steel Cowling
What’s Inside the Kit

ACRYLIC ROLL-ON BASECOAT RENDER
1 x 5L MAC ‘Rustic Roll-On’ Acrylic Render (White Basecoat)
This is the membrane coating that you will apply over the outer dome, once the oven has been completely cured and all moisture has been driven out. It gives the dome a good waterproof basecoat which can be rolled over with more roll-on render, or other similar exterior acrylic coating. It can be tinted at most paint stores.

OVEN DOOR
The final part of your kit is our Stainless Steel oven door, coated in a satin black finish. The handles are beautiful oiled hardwood, with solid stainless steel rings top and bottom. The door comes with a vacuum sealed temperature gauge accurate to 550°C (packed inside the bag of extras within the door box).

EXTRA ITEMS PROVIDED
• Roll of Chicken Wire
• 12 x Long Nails
• Plastic Strips to support the Timber Formwork
• 25 x Long Phillips Head Screws
• Roll of Galvanised Tie Wire
• 2 x Long Sleeve ‘Vet Examination’ Gloves

OPTIONAL EXTRAS

WATERPROOFING SYSTEM
Roll of 150mm wide Aluminium Flashing and 1 x Cartridge of Sikasil High Temperature Silicone
To prevent rain being drawn into the oven from beneath the outer dome (the perlite render layer), install our waterproofing system around the oven perimeter prior to rendering. Only needed for outdoor installations.

HIGH TEMP SPRAY PAINT FOR PRECAST FLUE GALLERY
Spray can of PPG Temptec 328 in Satin Black. Great for painting the Flue Gallery to make it look sharp.

OVEN WALL TEMPERATURE PROBE WITH THERMOWELL
250mm Temperature Gauge with Stainless Steel Thermowell that can be mounted through the oven wall.

POLISHED GRANITE LANDING
Polished Granite sections cut to fit around the Vent area, giving you somewhere to pull out heavy roasting trays to check on your cooking. Also an important surface to allow you to use your Oven Door as a Draft Door.

STAINLESS STEEL WRAP
2mm thick, brushed Stainless Steel Wrap to cover exposed floor sections around the Vent area.
Additional Material Required

**ADDITIONAL MATERIALS REQUIRED**

- 2 x 20kg Bags GP (General Purpose) Cement
- 1 x 20kg Bag Lime
- 2 x 20kg Bags Washed Sand
- Household aluminium foil
- Masking Tape
- Cling wrap

We don’t include these for several reasons – they add a lot of weight which would increase shipping costs, they’re available at all good hardware stores, and many of our customers already have these on hand.

**TOOLS REQUIRED**

- Trowel
- Small Plastic ‘Flexi’ Tub for mixing Mortar & Castable
- Large Plastic ‘Flexi’ Tub OR a Wheelbarrow for mixing Perlite render
- Jigsaw with wood cutting blade
- Drill/driver for putting in screws
- Level
- Stanley knife/scissors
- Car Jack
- Sponges, scourers & rags, old towel
- Angle grinder with masonry grinding disk

**SAFETY GEAR REQUIRED**

- Safety Glasses
- Ear Muffs
- Heavy duty rubber ‘washing up’ gloves (*two pairs recommended, so that you always have a dry pair*)
- P2 or equivalent rated Dust Mask
- Suitable clothing
- Safe access to climb onto your oven stand & fall prevention if working at height
1. Subfloor Insulation

The first step in building your oven is to prevent the heat in the oven floor from being conducted into your concrete slab, and from there into the surrounding air to be lost forever. We use Calcium Silicate (CalSil) board to do this, as it has excellent insulating properties, great compressive strength and is easy to work with.

1A: MARK CENTER LINE

Draw a line down the center of your top slab, this is used to make sure your CalSil board and ultimately your whole oven is positioned correctly, in the center of your stand.

1B: CUT OUT CALSIL BOARD USING TEMPLATES

Using the provided paper templates, cut out your CalSil board pieces using a jigsaw. We have provided you with thumbtacks to hold the templates to the CalSil surface.

1C: LAY CALSIL BOARD PIECES ON THE SLAB

Using the center line on your slab and the corresponding line on the templates, position your CalSil board pieces on your slab. There is no need to ‘glue’ these pieces down as the weight of the finished oven will hold them in place.

If your slab is uneven use a thin layer of dry sand to bed the board down, to ensure the Calsil is evenly supported.

1D: COVER CALSIL WITH FOIL

Cover the top surface of the CalSil board with aluminium foil, using the drawing pins provided. Cover the joints with paper masking tape, this makes the foil surface stronger and less likely to tear.

Transfer the centerlines that you had previously marked onto your oven stand onto the foil layer.
Fire bricks are very porous and will absorb a significant amount of water, so if you apply wet mortar to a dry fire brick this mortar will dry out and will not develop a good bond. To overcome this, soak your fire bricks in water for at least 10 minutes before you lay them. Take the bricks out of the water shortly before you need them, then when you grab a brick to lay, give it a dry on a towel or rag to remove any excess surface moisture.

You’ll be using the Hybrid Refractory Bedding Mortar mix shown below to bed the tiles down and get them flat.

Remember - WEAR RUBBER GLOVES. This mortar is alkaline and can cause chemical burns!

**HYBRID REFRACTORY BEDDING MORTAR MIXTURE**

- 2 PARTS AIRSET REFRACTORY MORTAR
- 2 PARTS WASHED SAND
- 1 PART GP (GENERAL PURPOSE) CEMENT
- 1 PART LIME

These measurements are by volume (i.e. 2 cups Airset, 2 cups sand, 1 cup lime, 1 cup cement). Mix well while dry, before adding enough water to make a smooth, thick mixture. Take a small trowel of the mortar and hold it upside down, it should stick to the trowel. The pot life of this mix is around 20 minutes.

Get all of your floor tiles soaking in water, and mix up some mortar. Only prepare one small area at a time, enough to lay a single tile. If you try to mortar a large area it will dry out before you have a chance to lay the tiles. Spread a layer approximately 10mm thick on the top of the heat bank. Use your fingers to notch this mortar mixture, to bed your tile into.

We designed the layout of the CalSil board to be 10-20mm larger than the floor tiles all the way around the perimeter of the oven floor, so that there is some tolerance on the positioning of your floor tiles. The extra area extending around the dome of the oven will be covered by the insulating blanket and render layers, while the sections protruding under the front and sides of the oven floor can either be cut back using a saw if you’re installing a stainless wrap to the exposed edges, or left in place and covered when a landing is installed.
2. Laying the Floor Tiles

2A: LAY THE FRONT CENTER TILE

Lay the front-center tile, making sure it’s level with your stand so that the other tiles can be laid flush and level with it.

Spread a layer approximately 10mm thick on the top of the foil layer. Use your fingers to notch this mortar mixture, to bed your tile into. Lay the large triangular tile for the very front first, lining up the point of the triangle with the centerline marked on the foil. The base of the triangle should line up with the front edge of the CalSil board.

If you get your first tile positioned correctly, the rest will follow suit. Make sure you take your time getting this right, so that your oven sits straight on your stand.

2B - CONTINUE LAYING FLOOR TILES

Continue the process and bed each tile down into the Hybrid Bedding Mortar mixture, ensuring that each is level and the edges are flush with each other (as close as you can).

Keep the joints between the tiles as tight as possible, remembering that gaps of up to 2mm are normal and once they’re all laid, you can fill in the joints with the same mortar mix if you want (it’s not necessary).

2C - GRIND HIGH SPOTS IF NECESSARY

Allow the tiles to set in place for 12 hours or more, to give the mortar sufficient time to set. If you proceed to the next step before the mortar sets you may find the tiles move when you place the PreCast sections.

If there are any raised edges at joints between the tiles, these can be ground back using an angle grinder with a masonry grinding disc or sanding disc. Do this before you build the dome, while you have easy access. Don’t grind the tiles unless you absolutely have to! Only grind the high spots that you might catch your oven tools on. Refer to the video instructions for more detail.
The dome of the oven is made up of four PreCast sections, which lock together using ‘tongue & groove’ joints.

In your kit you will find the Entry Arch and three Shell Sections, with a number painted onto the back of each shell section, to ensure the castings are placed in order. Each Shell Section is unique, and needs to be installed in the correct location to give you the best possible fit in the tongue & groove joints.
3. Building the Dome

The PreCast sections are somewhat porous, and just like the fire bricks will absorb a significant amount of water, so if you apply mortar to the dry PreCast sections this mortar will dry and harden very quickly. To overcome this, soak the base of the PreCast sections in water before you lay them. The same problem applies to the floor tiles that you laid earlier, which may have dried out. To wet these bricks before you lay them a thorough soaking from a wet sponge works well, or a light spray from a hose.

The PreCast sections are quite heavy and will require at least two people to lift them into place. This is a big project, so take your time and be careful. Give yourself good access to your stand, you may want to make steps or use trestles when you’re placing the cast sections.

The Refractory Mortar that you’ll use from this point onwards is a two-part mixture, included in the kit.

REFRACTORY MORTAR MIXTURE

• 3 PARTS ‘REFRACTORY MORTAR PART A’
• 1 PART ‘REFRACTORY MORTAR PART B’

These measurements are by volume (i.e. 3 cups of Part A to 1 cup of Part B). Mix well while dry, before adding enough water to make a smooth, thick mixture, like porridge. Take a trowel full of the mortar and hold it upside down, it should stick to the trowel. The pot life of this mix is around 30 minutes depending on the ambient temperature. Only mix what you can use in that time! Start with small batches until you get the hang of it.

This mix is ‘thixotropic’, meaning it will become more fluid (runny) when it is stirred, and very thick when it remains still. If your mortar becomes stiff in the bucket, stir it again with your trowel or mixing drill and it will become workable. Do not add more water. This would greatly reduce the final strength of the cured mortar.

After use, close the tops of these bags to stop the contents deteriorating and store them in a cool, dry place.

3A - DRAW GUIDE LINE

Measure 205mm back from the front edge of the floor tiles and draw a line across from left to right.

You will be lining up the front edge of the Entry Arch cast section with this line, which will in turn set the position of the remaining cast sections.

We have cut the floor tiles such that they are 30mm wider than the Entry Arch on the left and right, so make a mark 30mm inwards from the edge of the tiles on the left and right to guide the position of the Entry Arch casting.
3B: INSTALLING THE ENTRY ARCH

As discussed on the previous page, soak the brick tiles on the left and right-hand side where the Entry Arch section is going to land. Ensure the base of the PreCast Entry Arch Section is also thoroughly soaked in water.

Mix a small batch of mortar & spread a layer 5 to 10mm thick on either side behind the line you marked earlier.

With the assistance of at least one other person, carefully place the Entry Arch cast section onto the wet mortar and bed it down, making sure that the front face of the casting is at 90 degrees to the floor tile surface. Use a car jack to support the back of the Entry Arch casting, due to its shape it will tend to tilt backwards.

With the Entry Arch in place, clean up any of the excess mortar that was squeezed out from beneath the casting. Remove the excess with a trowel, then use a wet sponge followed by a dry cloth to wipe up the residue.

There's no need to wait for the mortar to set, in fact it is best to lay the remaining cast sections as soon as possible after laying the Entry Arch.
3. Building the Dome

3C: INSTALL DOME SECTION 1

Soak the base of all of the PreCast Shell sections in water, and apply 5-10mm of mortar to the area on the floor that PreCast Section 1 is going to land on, then place the section (you need someone to assist with the lifting).

*Do not use any mortar inside the tongue and groove joint, this will make it very difficult to fit the pieces together as they are designed as a dry interlocking joint. You will be sealing this joint from the outside later on.*

Use a rubber or dead-blow mallet against the outside of the shell base to move it into position – remember that there should be a gap of approximately 10mm from the outside edge of the Shell section to the outside edge of the floor tiles. Tap the shell section firmly until the gap between the Shell and the Entry arch is as tight as possible (the gap should be 3-5mm on the inside).

Once in position move on to laying the next section immediately (it will be necessary to make further adjustments once the other two pieces are placed, and you want the mortar bed to still be wet when you’re doing this). The tongue and groove joint will hold each section in position so you don’t have to worry about them falling over.
3D: INSTALL DOME SECTION 2

Repeat the process with PreCast Section 2, ensuring the floor tiles are wet before you put down the mortar bed. Place the section and move into place using a rubber mallet or dead-blow hammer around the base of the section, until the joint with PreCast Section 1 is fairly close (don’t try to get it perfectly into position yet as you will need to ‘open out’ this Section to get Section 3 installed.

3E: INSTALL DOME SECTION 3

As with PreCast Sections 1 & 2 ensure the floor tiles are wet before you put down the mortar bed. The placement of PreCast Section 3 is a little bit tricky as it is interlocking with Section 2 and the Entry Arch. As with the other PreCast Sections you will definitely need someone to help lift this piece into place. Move the piece into place and get the tongue and groove joints interlocking on both sides. This might require you to shift Section 2 outward slightly to get the tongue and groove joints to interlock. Once the joints are loosely interlocked, use a ratchet strap and a rubber mallet or dead-blow hammer to knock the sections together, striking the base of the Shell Sections.
3. Building the Dome

3F: BRING THE DOME SECTIONS TOGETHER

Note in the image below that on placing Section 3 you will have a large gap between the sections. As mentioned on the previous page you now need to shift the sections using a rubber mallet or dead-blow hammer to bring the sections together as tightly as you can. Rather than just using a mallet to knock the sections in towards each other, use a small ratchet strap around the base of the sections to help ‘pull’ the sections together.

We have included some photos below; between mallet blows give the ratchet a few clicks to pull the sections together. Don’t put too much tension on this strap, as you could damage the Entry Arch PreCast Section.

Tap the outside of each section around the base, keeping tension on the ratchet strap until the joints close up to 3-5mm width on the inside. If the joints between your sections are wider than you would like, there’s no need to worry. The tongue and groove joint system is very strong, and you’ll be applying a thick bandage of Refractory Mortar over each joint. If the sections are pulled in as tight as you can get them, they’ll be completely stable.

Release the ratchet strap and take the opportunity to clean up any excess mortar that has been squeezed out and to wipe up any residue left behind (it will be difficult to reach into the back of the oven after this point).
3G: INSTALL FIBERGLASS FORM

Take the fiberglass dome that is included in your kit and use a car jack to push it firmly against the keystone hole at the top of the oven dome. Prior to inserting the dome, wipe the surface with vegetable oil to help it release from the castable that will be poured on top.

The keystone of the dome will be poured using Refractory Castable, which can be thought of as high temperature concrete - the same material that the Dome castings are made from. Your kit includes a 6kg bag of Refractory Castable, which is significantly more than you need to pour the keystone. Don't mix it all at once! Leave some dry Castable aside, in case you make your mix too runny. Then you can use the dry Castable to get it right.

If the temperature is less than 20°C you must add a very small amount of lime to the castable to accelerate the setting time, otherwise the castable can take a very long time to set. A pinch will be plenty for the 6kg. If the temperature is above 20°C you will not need to add any lime at all, just add water and mix thoroughly.

Clean and wet down the inside surfaces of the keystone, so that the castable will bond well with them.
3. Building the Dome

3H: POUR THE KEYSTONE

Mix around two thirds of the bag of castable with water to a very thick porridge consistency. You want it to be wet through, but as thick and ‘stodgy’ as you can make it, so add water slowly and mix thoroughly.

Fill the keystone void with the wet castable mixture immediately after mixing it. Use your trowel to vibrate the keystone castable, to remove as many air bubbles as possible.

3I: SEAL DOME JOINTS

First, clean the area around the dome joints and wet the area thoroughly to ensure a good bond. Mix some Refractory Mortar and trowel it over the joints, about 150mm wide and 10-20mm thick. Once each joint is covered with a thick layer of Mortar, use cling wrap to cover the wet mixture and smooth it out. This allows the Mortar to cure properly, and makes it much easier to get it neat and tidy. Leave to set for 12 hours before applying the Ceramic Fibre Blanket (but feel free to move on to the next step).
4A: POSITION FORMWORK

Position the timber formwork at the front of the oven, laying flat as shown, lined up with the Entry Arch.

Mark the edges of the formwork onto your fire brick floor with a pencil. Dry fit the first two Vent Column bricks, lining them up with the front edge of the floor. Soak your bricks in water for at least 10 minutes.

4B: LAY FIRST VENT COLUMN BRICKS

Mix up a small batch of the Refractory Mortar and wet down both the floor tiles and the angled rebate in the Entry Arch. Lay one Vent Column brick on either side, aiming for a uniform mortar bed of 3mm. Use a rubber mallet and a level to position the bricks, lining them up with the front edge of the floor tiles.

4C: PLACE FORM WORK IN UPRIGHT POSITION

With the first layer of the Vent Arch columns in place you need to move the Formwork into its upright position, with the yellow strips underneath it on either side. These are very important, once the brick arch is laid and set, you’ll pull these strips out which allows the formwork to drop slightly, making it easy to remove.

4D: FINISH LAYING THE VENT COLUMN BRICKS

Lay the remaining Vent Column bricks. To keep the columns vertical, look at your mortar joints, using a wet sponge to clean the bricks and show the joint thickness as you lay them. You’ll be able to see if the bricks are on an angle, so this will help you lay the bricks flat and level. The Vent Arch Formwork has marks on either side showing you where to locate each joint and how thick to make them, do your best to keep the joints 3mm thick as per the design.
4. Building the Vent Arch

Please note that if you make these joints too thick you will have to grind the Vent Spring Bricks slightly to make them fit into the angled rebate in the Entry Arch PreCast Section. You may also need to raise the formwork slightly when you lay the Vent Arch, if you find that the Vent Arch bricks seem too tight when you dry-fit them, this is because the formwork is sitting too low. Use thin, hard packers to lift the formwork a couple of millimeters and try the dry-fit again. Repeat this ‘dry-run’ process until you’re satisfied with the fit of the Vent Arch bricks.

4E: LAY THE VENT SPRING BRICKS

Lay the Vent Spring Bricks, these should fit snugly into the rebate in the PreCast Entry Arch. Put mortar into the pocket left between the PreCast Entry Arch (inside and outside) and trowel to a smooth finish.

4F: DRY FIT THE VENT ARCH BRICKS

Dry fit the Vent Arch bricks to check what size your mortar gaps should be. They are numbered from 1 to 8. Lay them with the numbers facing towards you. If the bricks don’t fit you will need to raise the timber formwork slightly using thin, hard packers and repeat the process to make sure the Vent Arch bricks fit well.

4G: MORTAR THE VENT ARCH BRICKS

Soak and lay the Vent Arch bricks using the Refractory Mortar, keeping the joints nice and tight.

Leave the Vent Arch bricks to set in place for at least 12 hours, to avoid dislodging the bricks when the PreCast Flue Gallery is installed.

Leave this formwork in place until you have the PreCast Flue Gallery mortared in position.
5. Installing the Flue Gallery

5A: ADD PACKERS & DRY FIT THE FLUE GALLERY

Place packers 3mm to 10mm thick on top of your Vent Springer bricks, you could use the plastic spacers that come with the kit as temporary packers that you remove once the PreCast Flue Gallery is set in place.

With help, carefully sit the Flue Gallery on top of the packers, and check the joint thickness and level that the Flue Gallery will be on.

5B: SOAK THE FLUE GALLERY & VENT ARCH

Wet the upper surfaces of the Vent Arch bricks and the top of the Entry Arch casting where the Flue Gallery is going to land. Soak the underside of the PreCast Flue Gallery so that the mortar will bond properly to it.

5C: APPLY MORTAR

Trowel mortar around the packers and across the top of the Vent Arch bricks. Aim for just a little more mortar than you need to fill the gap, but not a lot more. You don’t want to ‘squeeze’ too much out when the Flue Gallery is landed.

Leave the gap at the back between the PreCast Entry Arch and the PreCast Flue Gallery for later.

5D: PLACE FLUE GALLERY

Quickly, while the mortar is still wet, lower the flue gallery onto the mortar and ‘wriggle’ it into place until it lands on the packers. It will have a tendency to tilt backwards, toward the dome - keep this in mind.

You’ll have about a minute or so to adjust the position of the Flue Gallery, after that the mortar will take its initial set and no further movement will be possible.
5. Installing the Flue Gallery

5E: REMOVE THE VENT ARCH FORMWORK

Fill in any gaps on the front and sides of the joint between the Flue Gallery and the Vent Arch Bricks.

Hold the base of the formwork in place while pulling out the plastic strips. The formwork should drop slightly so that you can carefully remove it.

If the formwork gets stuck, don’t panic! Just undo the screws that hold it together and gently tap the pieces until they loosen up and come out.

5F: CLEAN UP EXCESS MORTAR

Clean up any excess mortar that has squeezed through inside the Vent area and wash down the Vent Arch bricks with clean water and a scourer, drying off the brickwork afterwards.

5G: FILL THE GAPS

Fill the gap between the PreCast Flue Gallery and the Entry Arch with Refractory Mortar, smoothing off the inside face. Cover the back face of this large mortar joint with cling wrap, to help the mortar cure rather than dry out. No need for cling wrap on the inside, as this area is well protected from the elements.

Remove the plastic packers and fill in the resulting voids with mortar. Check your brickwork and fill in any little voids - this is the last time you’ll need the mortar so you might as well use up what you have mixed.
6. Insulating the Dome

You’ll now wrap the Oven Dome in Ceramic Fibre Blanket, which is the insulation material to prevent heat escaping from your brick dome. We provide you with green ‘Vet Exam’ gloves to protect your arms from the itchy fibres, also remember to wear the appropriate safety equipment. See the instructional videos for more details on the easiest way to install the Ceramic Fibre Blanket.

6A: CERAMIC FIBRE BLANKET LAYER 1

There is enough blanket in your kit to cover the dome with two layers (a total of 50mm). Take a roll of Ceramic Fibre Blanket and wrap it around the base of the dome, bringing it down to the top of your stand.

You'll need to cut ‘V’ sections out of the top of the blanket as shown so that the blanket can wrap tightly against the dome surface.

6B: CERAMIC FIBRE BLANKET LAYER 1

Now run a section of blanket from the back of the PreCast Flue Gallery to the back of the dome, then trim pieces to fill in the gaps. Providing it's not too windy, the blanket should remain in place. Remember to wear a good quality dust mask and goggles when working with the Ceramic Fibre Blanket.

6C: CERAMIC FIBRE BLANKET LAYER 2

Once you’ve placed the first layer, repeat the same process for the second layer, trying to avoid overlapping your cuts if possible (don’t stress too much on this point though).

OPTIONAL WATER BARRIER SYSTEM

If your oven will never get rained on, you can skip to step 6D. If not, we recommend that you install our water barrier system. This minimises water soaking into the oven from beneath the render. When rainwater runs down the oven dome, it pools on the stand surface and can be drawn in by capillary action if the render isn’t well sealed against the stand, which is difficult to do as the render dome expands and contracts under use.

Run the aluminium flashing around the oven perimeter, including the front, and attach it using the 100mm screws, pre-drilling holes in the flashing. Don't over-tighten the screws going through the blanket. Fold down the high sections around the floor tiles. Once you’ve completed 6E, clean the stand surface with a solvent like methylated spirits, then seal between the flashing and the stand surface with the high temp silicone. Silicone around the screw and nail holes as best you can, as well as the overlapping joint at the end of the flashing.
**6. Insulating the Dome**

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**6D: TIE WIRE**

Use the 125mm nails, hammering them into the CalSil board around the perimeter, 25mm above the base at roughly 300mm spacing. Leave about 20mm hanging out, as a fixing point for your tie wire.

Use the heads of the nails as tie points to lash the blanket down against your dome using the tie wire provided. Pay extra attention to the sections to either side of the vent arch brickwork.

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**6E: CHICKEN WIRE**

Run the chicken wire from one side of the dome across the top, to the other side, securing it at the base using the nails that you installed earlier.

You will find that the chicken wire tends to bulge out, away from the dome. You can ‘scrunch’ these sections down, which will pull the chicken wire back in against the blanket.

Run the next layer of chicken wire around the perimeter of the dome, hooking it onto the screws around the base, and fold/scrunch down the areas that are bulging away from the dome. Continue until you have covered the entire dome with chicken wire, running right up against the back of the flue gallery, and in behind the Vent Arch columns. Then, use more tie wire to lash the chicken wire down against the blanket.

Check the dome for loose wires that are poking out more than 25mm and fold them down; they may interfere with applying the Perlite Render.
Before you render the dome, finish the top of your concrete slab with tiles or stone, and seal off the exposed CalSil board at the sides and front of the Vent area using either our Stainless Steel Wrap, or an Oven Landing. If you do this now, it will be much easier to cut the tiles to fit as they don’t have to be cut very accurately.

If your stand isn’t deep enough for a landing, we have an 2mm thick Stainless Steel Wrap to cover the front and sides of the Vent area available as an optional extra. To install the Stainless Steel Wrap, tuck the lip on the base of the wrap underneath your CalSil board, and tap the wrap into place using a rubber mallet, or hammer using a piece of timber to spread the blow. Use a long nail on the left and right through the holes in the S/S Wrap to secure the sides to the CalSil board. If you have installed the Water Barrier System you’ll need to cut through the silicone along the front edge of the Calif in order to get the lip to slide underneath the CalSil board.

**If you have the space, we highly recommend fitting an Oven Landing.** Landings have two key benefits; it’s a very useful area to pull large dishes onto to check how they’re cooking, and it’s also a platform to rest the Oven Door on so that it can be used as a ‘Draft Door’ (see our instructional videos on firing your oven for more details).

Polished granite is one of the best materials to use; it resists high temperatures, it’s easy to keep clean and will last practically forever. If you want to keep the landing area and tiles around your oven looking neat, use non-porous materials that won’t be easily stained by the oils from all the delicious food you’ll be cooking.

To install a landing, you’ll build an ‘upstand’ to bring up the stand height around the vent area. We use 20mm thick polished granite for the oven landing, so we build the upstand to a height approximately 25mm below the oven floor height (allowing 20mm for granite and 5mm for tile adhesive). Normal building bricks work well for this, you can lay them using mortar or good quality tile adhesive. We recommend using tile adhesive to glue the granite landing in place. There will be a small gap to fill on the left and right between the floor tiles and the granite landing, which you can fill with tiling grout or Refractory Mortar.
8. Perlite Render

To render over the Ceramic Fibre Blanket you’ll be using LiteFill Perlite – this is a lightweight aggregate that you’ll use to make an insulating render mixture. The Perlite render layer serves two purposes – it forms a thick, hard shell over the insulation blanket, and it provides additional insulation to your oven dome.

If you’re installing the optional Thermowell and Temperature Gauge, this is the time to install it. Drill a hole through the wall of the oven, approximately halfway up the dome, then slide the Thermowell rod into the hole. Use masking tape to cover the internal threaded section of the Thermowell to keep the Perlite Render out. Leave the Thermowell sitting well off the insulation blanket, then once you have some wet render around it, you can gently push it into the render, nestling it in until you’re happy with its position.

**PERLITE RENDER MIXTURE**

- **5 PARTS LITEFILL PERLITE**
- **1 PART GP CEMENT**
- **1 PART LIME**
- **1 PART WASHED SAND**

Mix up a wheelbarrow (or large tub) of render, combining the Perlite, cement, lime and sand while dry, then add water. Mix thoroughly, adding water as you go until you’ve achieved a thick, stodgy consistency. You should be able to make a ball with this mixture, throw it up and catch it without it running through your fingers.

The Perlite Render should be put on one layer at a time; for the first layer you’ll work the wet mixture into the chicken wire using your hands. Start around the base, then cover over the top. This layer will only be around 15 to 20mm thick. Leave to set for 12hrs, covered in wet sheets or plastic to minimise drying shrinkage cracking.

Before applying the next layer, wet the surface of the existing render so the new mix will bond to it. You may need to cover the existing render with old towels and soak them with a hose in order to get enough moisture into the existing render layer, particularly if it’s been drying more than 24 hours. Trowel the next layer on, using the curved polystyrene float to help shape it. You’re aiming to build up around 15 to 20mm in each coat.

Again, let this layer cure under covers for at least 12 hours before applying the final layer. Repeat the step above, using the float to shape the surface of the Perlite Render and to show you where the high and low spots are. Stand back and look at the curve of the dome to see how symmetrical it is. We recommend that you bring the perlite render in behind the vent arch columns, then your render layer remains thick and strong.

*Pro Tip - If you’re very familiar with using render, and have a mixing drill available, it’s possible to build up the full 50mm of Perlite Render in one hit. It’s critical that the render be mixed very thick and sticky to achieve this. Please don’t try this unless you’re 100% confident.*
9. Installing the Standard Flue

If you’ve built your oven outdoors and the flue will be well clear of any combustible materials as per the diagram on page 9, you can install the standard flue for the oven following the steps detailed below.

**9A: INSTALL THE FLUE**

Place the flue cowling (hat) on the plain end of the flue pipe, this is meant to be a snug, tight fit.

Now, fit the crimped end of the flue pipe section into the stainless steel sleeve protruding from the flue Gallery. Remove the plastic film from the stainless steel ring that covers the flue expansion joint.

**9B: SECURE PIPE FOR WINDY AREAS**

The flue is quite stable with only one length but if you live in a particularly windy area you may want to secure your flue using stainless steel screws or pop rivets (screws if you intend to remove the flue in future). With either method you will have to pre-drill the holes.

If you use three screws/rivets at equal spacing around the flue, this will be sufficient to hold it level.

If your installation involves anything more complex than the basic setup that we provide in the kit, you must engage a suitably qualified plumber to supply and install the flue for you. Your local fireplace store will have several professionals they can recommend. Your oven can reach extreme temperatures, to the point where the flue glows orange.

This is important, if you go down the path of installing your own flue system and somehow, your oven causes a catastrophic fire, your home insurance may be null and void. Put this in the same category as working with high voltage electricity - the risks massively outweigh the rewards. Don’t risk it, use a licensed plumber.

You may want to change the colour of the flue - let’s say you wanted it black, for example. Don’t try to paint the stainless steel flue - there is no paint available that can withstand the full range of temperature that this flue can reach. Rather, get a ‘twin-skin’ flue system, and have the external flue pipe (the second ‘skin’) painted in a high temp coating. This will also require you to purchase a ‘twin-skin’ cowling to lock the two flue pipes together at the top. These flue systems and other, more complex flues are available at good plumbing supply stores, and most wood heater retailers. Your plumber will source these components for you.

The flue should be installed whenever the oven is fired. Without the flue, most of the smoke will come out of the oven mouth and cover your brickwork with soot. Leave the flue installed unless the oven is being covered for a long period of time (eg. to protect the oven from freeze-thaw during winter in a very cold climate).
Flue Installation Tips

EXTENDING THE FLUE
It's very common to need to make your flue higher, and there's no problem with that, in fact it will make the flue draw even better!

Something to consider is how you will support the extra lengths. They will need to be riveted together, but even then two or more lengths of flue will not be stable, and need to be secured with struts or cables.

BENDING THE FLUE
You may have installed your oven with the mouth under the pergola and the dome outside, so that you can cook in any weather. This might mean you'll need to ‘bend’ the flue back, to get the necessary clearance from the roof.

Having a bend is fine, but don't angle it more than 45° as this will prevent the flue from drawing properly.

CLEARANCE ABOVE THE FLUE
You must have nothing whatsoever above your flue, just clear sky. It's possible to build a fire so big that your flue glows orange, and flames roar from the top. You would never do this of course (we're sure you're very responsible), but maybe someone slightly less responsible is left in charge of the oven for a while...

Never position your flue such that it terminates beneath something, even if it's several meters below it. Remember, nothing but clear sky.

CLEARANCE AROUND THE FLUE
Referring to the diagram on page 9, you'll see you need at least 750mm clearance to combustibles from the flue. If you need to reduce the clearance, that's easy! A ‘twin-skin’ flue reduces the clearance by a lot, and a ‘triple-skin’ flue brings it down to almost no clearance at all.

This of course, is the realm of the professional. A qualified plumber can assess your installation and advise you on the flue system you need.
9. Curing the Oven

CURING THE OVEN

Regardless of the weather conditions during your build, when you are finished your oven will still be holding water. Each brick was soaked before being laid, so your oven will be holding water in the walls, floor and CalSil board. If you lit a large fire in the oven now, this water will vaporise and cause significant damage! You need to slowly dry the oven out, or ‘cure’ it before you start lighting serious fires. Before you start your curing fires, you need to wait long enough to allow all of the refractory materials to set properly before getting heat into them.

THE SEVEN AND TWO RULE

Your Refractory Mortar needs to set for at least 7 days before you light the first curing fire.
Your Perlite Render needs to set for at least 2 days before you light the first curing fire.

**EXAMPLE 1:**
You’re an oven building machine, and you complete the dome bricks, insulation and render all on the same day. You would then wait for 7 days, giving the mortar and the render both enough time to set.

**EXAMPLE 2:**
You build the oven at a more enjoyable pace; you completed the brickwork two weeks ago, and just today you’ve put your final coat of Perlite render on. You would now only have to wait for 2 days, as the mortar has already had plenty of time to set good and hard, you just need to allow the render time to set.

Before you light your first curing fire, clean the stainless steel flue to remove any marks or fingerprints left on it from installation. Use a solvent such as methylated spirits, thinners, acetone or rubbing alcohol to wipe the surface down, then wash with soapy water before drying with a soft cloth.

**It is critical that you watch the instructional video that we’ve made for Curing your Oven. While it’s not rocket surgery, it’s something that is much more easily communicated by video than in these written instructions. Head to our website or YouTube channel to find this video, which takes you through the process.**

CRACKING

Please note that it is completely normal to see some hairline cracking in your oven, in fact we can guarantee that you will! This is because you’re heating up a rigid, ceramic structure to extremely high temperatures, which creates thermal stress in the brickwork. To relieve this stress, the oven will develop several small cracks, usually around 1mm in width. It’s common to see a crack starting at the base of the dome that runs all the way up to the keystone, as well as some fine cracks in the mortar joints of the Vent Arch, and around the Flue Gallery. You’ll also see some cracks in the Perlite Render radiating from the junction with the Flue Gallery.

Don’t let these cracks concern you at all. You should be expecting them. This cracking is normal and there’s nothing that you can do to prevent it. Cracking is and always has been a part of owning a Wood Fired Oven. What’s important to know is that they won’t get worse over time, they’re just there as thermal stress relief.

If you get a large crack in your mortar (over 2mm width) then we have repair materials that can be sent out to you, however this is rare, and is usually due to the oven being over-fired early in the curing stages. Any cracking in the Perlite render will be covered by the roll-on acrylic coating that you’ll apply once the oven is fully cured.
10. Painting

PAINTING THE FLUE GALLERY

The PreCast Flue Gallery comes in the kit in a plain cast finish, which is a light grey colour. You can leave it in this finish if you want a more natural look, or coat it with high temp paint which sets it off against the bricks. Make sure the oven is fully cured before you paint the flue gallery, to avoid blistering when the oven is fired.

There are a range of high temperature paints available, however there are very few colours to choose from. We have tested almost all the available high temp paints and the best performing paint we found was PPG Temptec 328, which we have available as an optional extra in spray cans coloured satin black.

Mask off the edges of the brick work with masking tape and paper. Ensure the surface is clean and free from dust, wipe the surfaces down with a solvent such as mineral turps or paint thinners to remove any traces of oil and allow to sit for one hour before painting. Apply the paint in several light coats leaving at least 30 minutes between coats and allow to dry for at least 12 hours prior to firing the oven again. Please note that while you can spray paint the flue gallery before you install it and touch it up later, we recommend that you wait until it’s installed and cured with the oven, to minimise the chances of blistering in your coating. There is plenty of paint in the can, keep the remainder - if you get any small blisters these can be sanded back and resprayed.

ACRYLIC ROLL-ON RENDER

Once you have cured your oven, you need to apply at least two coats of Acrylic ‘Roll-On’ Render over your Perlite layer, as the perlite render is very porous and will absorb almost all of the rain that falls on it.

Acrylic Roll-On Render is essentially a thick, elastomeric paint with a fine aggregate similar to sand mixed through it for texture. This creates a stretchy water resistant membrane over the dome of the oven. There is a 5L tub of this render included in your kit in pure white. You could have this tinted to a different colour at your local paint store, or coat the dome in white and use another roll-on render coating over the top.

Wait until the oven is completely cured and dry before you put it on, or you will get bubbles forming in the acrylic layer from escaping steam. This means doing the full 7 days of curing and at least four major firings. Wait for a day of good weather with no chance of rain to apply the first coat, nice and thick, allowing at least 12 hours for it to set before applying the second coat. The key is to make sure that the roll-on render doesn’t get even slightly wet for a minimum 48 hours after the last coat is applied. Any rain or dew on the roll-on in the first 48 hours can cause serious issues. Use a normal paint roller or brush to apply the roll-on render.

You’re not limited to just leaving the oven in a rendered finish – you could cover the dome with tiles, slate, river pebbles or even another layer of bricks. What you do from here is up to you! Once you’ve driven all the water out of your oven, the render will only get mildly warm from being fired, so there are a wide range of materials you could cover the dome with. Get creative!
Examples
Examples
Summary

Time to get cooking!!

We hope that you have enjoyed the process of putting your oven together as much as we’ve enjoyed developing the kits to the stage they’re at today. The time you have put into building your Wood Fired Oven is going to pay for itself many times over in the years to come, as you sit around the oven spending relaxed, quality time with your family and friends, enjoying food that’s been cooked by a real wood fire.

From the whole team at The Fire Brick Company, thank you for choosing us. You’re not only a customer, you’re now a part of The Fire Brick Co. family and we’re here to support your wood fired endeavours in whatever way we can. We have a number of videos and other resources to help you with using your oven, now that you have it built, and will be adding to them on a regular basis. If you have any questions at all about using your oven, don’t hesitate to reach out to us, we would love to hear from you.

Ben Guilford

Director
Contact

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