SCHIEDEL

ISOKERN®

Pumice - *naturally* better

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DEALER STAMP

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JULY 2011

MONIER

Pumice - *naturally* better

Pumice is a natural insulator. This is the unique property that separates pumice from all other chimney materials.

The insulating properties of Pumice allow the flue gases in the chimney to quickly reach their optimum temperature enabling the heating appliance to reach its optimum performance shortly after lighting.

It also keeps the chimney warmer longer as the heat output of the appliance decreases - once again aiding performance and reducing the likelihood of condensation and soot build-up.

The *natural* properties of pumice -

- **Resistant to temperature change**
  Pumice has very little expansion and contraction with temperature change. This reduces the possibility of cracking and structural damage that can occur with other products.
- **High Insulation Properties**
  Pumice is a natural insulator, able to maintain the temperature of flue gases when other products have allowed the temperature to fall below the dew point.
- **Lightweight**
  Pumice is strong yet lightweight allowing one person to lift and build the chimney units.

Pumice is a natural material sourced from the Hekla Volcano in Iceland.

Pumice is an excellent insulator, keeping flue gases warm while not transmitting heat to the outside.

Energy efficiency and chimneys

In the drive for more efficient homes the latest revision of the building regulations mean that all new houses must comply with tighter rules, aimed at reducing energy consumption and carbon emissions from houses by a further 25%.

By choosing an appropriate heating appliance and an efficient chimney/flue system, you can help meet the Government's target without compromising on the cosy focal point that truly makes a house a home.

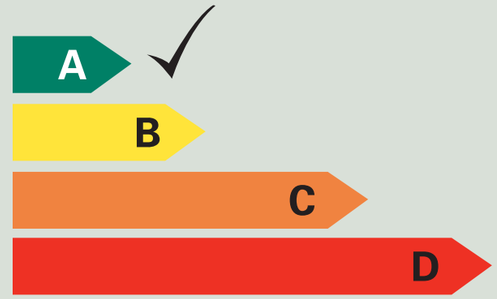
Chimney Specification
The chimney plays an important role in the overall performance of a heating system. An efficient heating appliance requires a well designed and consistently insulated chimney to perform at optimum efficiency. This is where the Schiedel Isokern chimney systems come in. The Isokern Pumice system provides continuous insulation along the entire length of the chimney ensuring that the chimney remains warm during the operation of the appliance.

Having spent time and money heating the air in a room the last thing you want is for that hot air to escape up the chimney. With an open fire it is calculated that 40 cubic meters of air will pass up the chimney each hour. The Schiedel Isokern range of firechests are fitted with a damper that can be closed when the fire is not lit. This halves the assumed air loss to in the SAP calculation to 20 cubic meters per hour. (SAP is the calculation method used to determine the amount of CO_2 produced by a house). Installing a stove and the chimney with a diameter of less than 200mm diameter will also have an air loss of only $20m^3$.

Improve Energy Efficiency & Reduce Carbon Emissions
The aim is to move away from less efficient heating appliances to ones with higher efficiencies and to use energy sources that produce less carbon. There is a common misunderstanding that the more efficient the appliance, the less carbon it uses. This is not the case. An electric fire is deemed to be 100% efficient but electricity is a high emitter of CO_2. Wood on the other hand is effectively carbon neutral and when used in an efficient appliance will significantly reduce the carbon output from a house.

Under the new regulations stoves can now be used as secondary or primary heating. A house can be fitted with two primary heating systems, for example a condensing gas or oil boiler and a linked stove system to maximise the carbon saving benefits of the wood burning stove.

Choosing your appliance at the planning stage is now crucial
Both primary and secondary heating MUST be specified at the design stage if the required carbon savings are to be realised. This is a big change in our thinking as the choice of appliance would usually have been left until building was complete or the house occupied. If the choice is not made before the build, the SAP programme will default to the worst case scenario.



- Greater energy efficiency
- Lower carbon emissions from burning wood
- Gain carbon credits to offset against other aspects of construction
- Meet the requirements of Document L and SAP

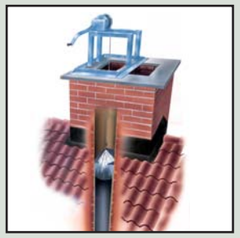
Product Range

Schiedel Isokern products can be used for new chimneys and for the refurbishment of existing chimneys. The Isokern chimney systems provide a lightweight, easily installed and versatile chimney which can be used internally or externally. The systems are suitable for use with burning appliances in new and refurbished projects. They are ideal for Masonry, Timber Frame and Steel Frame construction. Isokern chimneys have been installed in Europe for over 60 years.

DM (Double Module)
The Schiedel Isokern Double Module block system is a quality chimney system, used extensively in Scandinavia and other parts of Europe. The double wall system maintains flue gas temperatures while preventing heat transference to the outer casing. The separation of the inner and outer components also allows for thermal movement, reducing the risk of cracking and subsequent leaking or staining. It is simple and quick to build. The Double Module is available in 3 outer casing sizes - DM36, DM44 & DM54.

Flue liners
The Schiedel Isokern flue liner range consists of over 17 different sizes. They can be used for newbuild, extensions and relining existing chimneys.

Firechests
The Schiedel Isokern range of firechests are supplied as flat packs. They can be easily and quickly constructed to produce a neat and pre-formed fire opening ready for finishing. The Magnum Firechest provides the opportunity to create fire openings up to 1.2m wide.



Isokoat Flue sealing system
The Schiedel Isokoat system is an efficient and cost effective method of re-sealing a defective chimney shaft. The Isokoat material is applied to the chimney under pressure and forced into the cracks sealing them, re-pointing the joints and strengthening the walls. For further details see the separate Isokoat leaflet.

Our web site **www.schiedel.co.uk/isokern** contains full details of all our applications including installation instructions and downloadable drawings to suit most applications. A **CAD CD** with drawings and brochures is also available on request.

DM Double Module Chimney System

When the ease of construction and maximum insulation matter then the Double Module System comes into its own. The system is designed to be quick and easy to install.

The lightweight blocks are easy to handle. The outer and inner blocks are laid at the same time but with staggered joints for safety and stability. The double layer of pumice blocks separated by an air gap maximises the chimney insulation.

The Pumice Systems are suitable for wood - logs, pellets and chips, solid fuel, oil and gas.

There are 3 systems in different internal diameters to meet the requirements of different appliances and uses:




- **DM 36, 150mm internal diameter for smaller output inserts, stoves, pellet boilers and cookers**
- **DM 44, 180mm, 200mm and 225mm internal diameters for inserts, stoves and open fires**
- **DM 54, 300mm and 345mm internal diameters for Manor firechests and larger appliances - inserts and open fires**

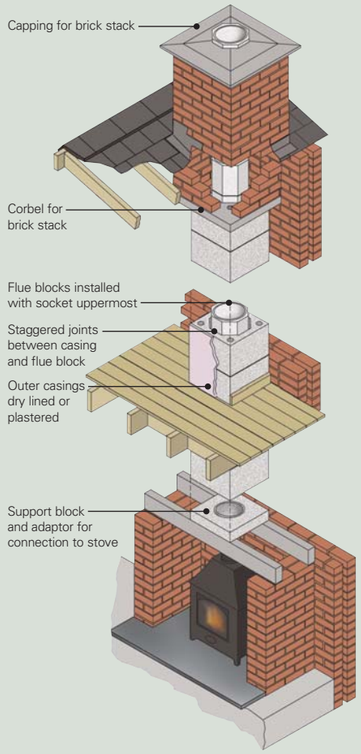
The diameter of the appliance outlet determines the diameter of the chimney required.



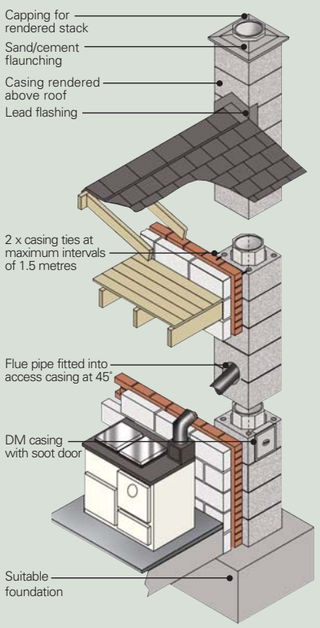

Unique features of the Isokern DM chimney system:

- Quick and easy to assemble
- Lightweight materials, easy to handle
- Highly insulating pumice for better draw and minimum heat loss
- Staggered joints for maximum safety and stability
- Air gaps between outer casing and flue prevents surface staining
- Good resistance to temperature variations gives the maximum performance for your appliance
- CE certified to EN1858 with the designation T450, NI, D, 3, G(00).
- Irish Board of Agrément approval

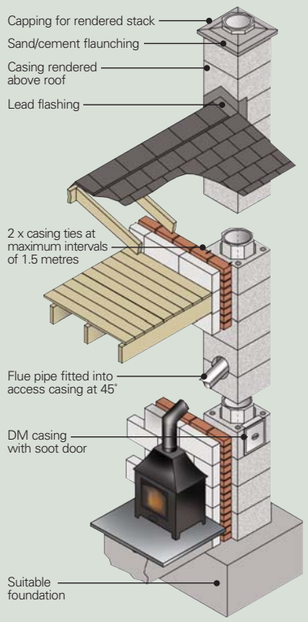
DM 36 - for smaller output inserts, stoves, pellet boilers and cookers



Free standing stove in an alcove. System includes stove adaptor for ease of connection between the above and chimney.



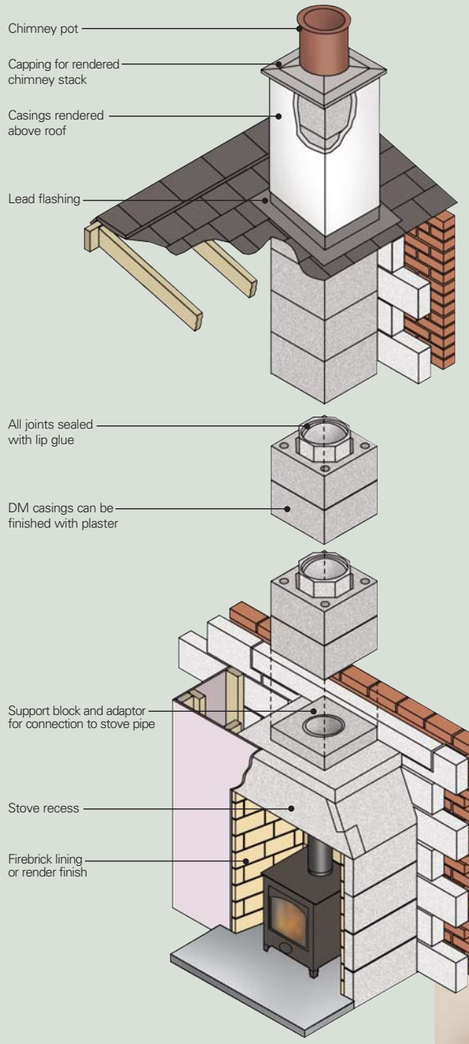
Range with external chimney



Free standing stove with external chimney with preformed stove entry kit

Downloadable drawings available from our web site **www.schiedel.co.uk/isokern**

DM 36 - for smaller output inserts, stoves, pellet boilers and cookers

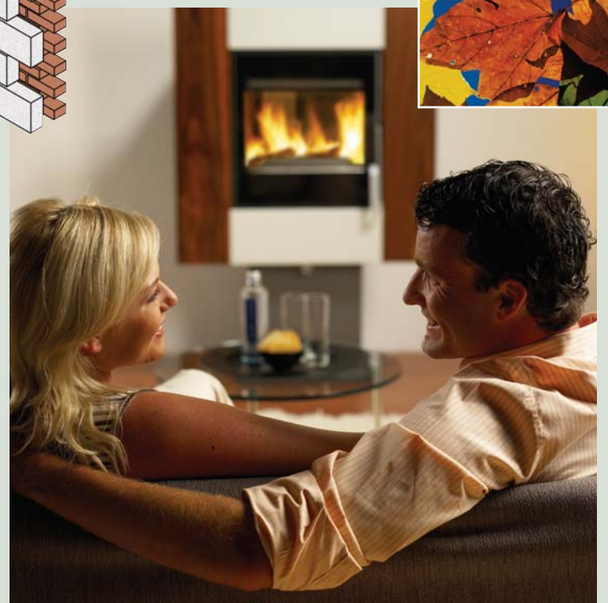


Stove in prefabricated recess to simplify creation of alcove

Standard DM Components

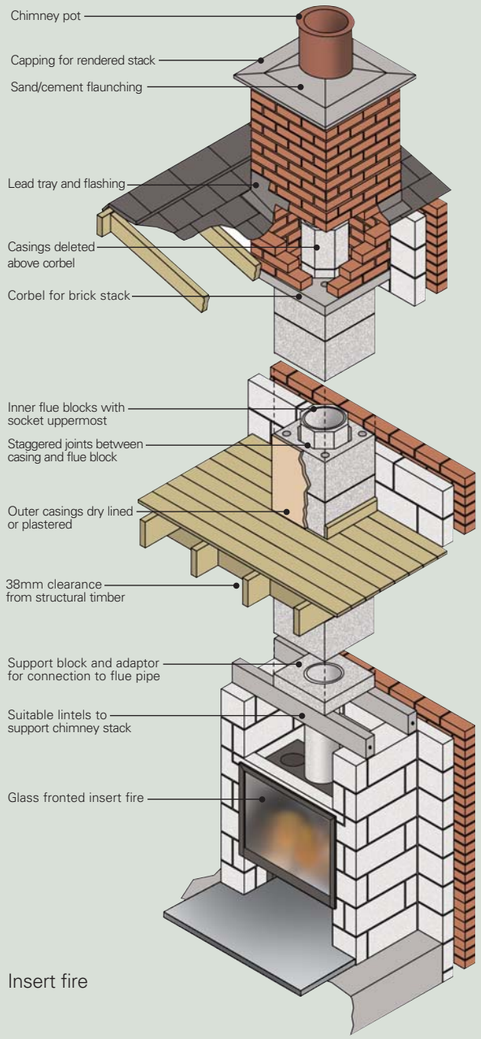
Description
Square Outer Casing
Access Casing with access hole
Casing and Soot Door
45˚ Flue Entry Kit (four parts)
Flue Block
Stove Access Flue Block
Square Corbel for brickwork
Capping for brickwork and render
Offset Block (86mm, 30° offset)
Support Block
Stainless Steel Adaptors and Decreasers
Lip Glue Adhesive (5kg)

See web and our price book for full range of components.

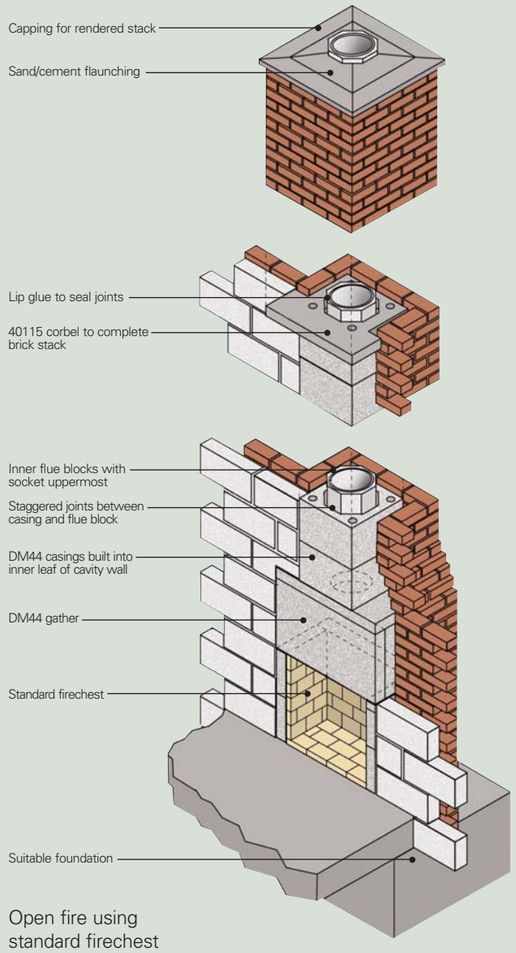


DM 44 - for inserts, stoves and small open fires

Available in 3 internal diameters 180mm, 200mm, 225mm. All inner blocks fit into the same external block.

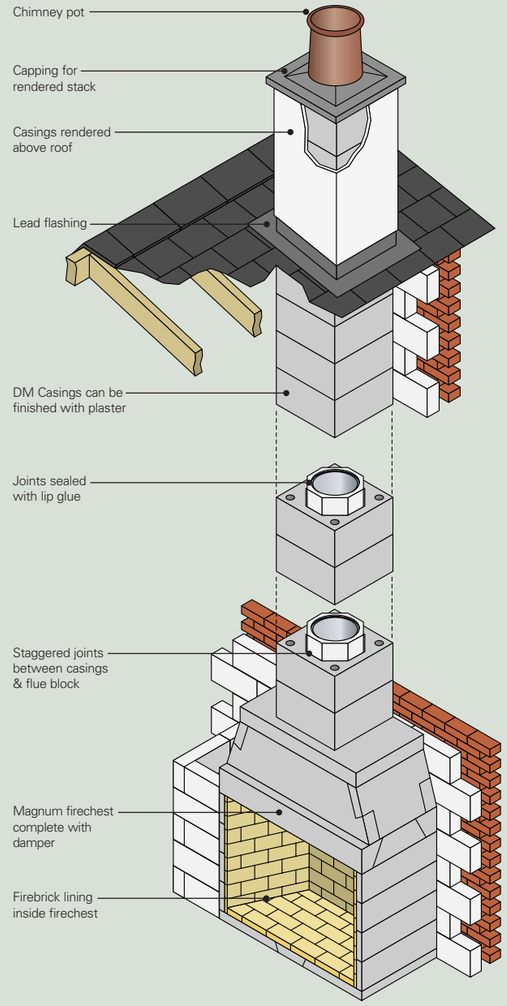


Insert fire



Open fire using standard firechest

DM 54 - for larger open fires and appliances



Large fire opening created with Magnum firechest

Downloadable drawings available from our web site **www.schiedel.co.uk/isokern**

DM Double Module - Technical Specifications

Structural Timber Clearances
Where a chimney is required to pass through a structural floor, a sliding joint must be made using mineral wool or similar non-combustible material. A minimum 38mm clearance must be maintained between the outer face of the chimney and any structural timber or loose combustible material. Floor boards, skirting boards and other non-structural components may, however, be in contact with the chimney.

Offsets
Bends can be achieved using purpose-made offset blocks. These blocks do not have a separate flue block. To maintain the correct matching of the joints the last flue block immediately below the first offset block should be trimmed to bring it to the same height as the top of the outer casing. Above the last offset block a starter flue block must be used. All offset blocks must be fully supported.

Fixings
An external chimney must be tied to the structure at maximum intervals of 1.5m and at the point where it departs from the roof line. Ties should be Isokern stainless-steel ties and bolts for use between the casings; or suitable galvanised-steel straps and bolts around the casings.

Lead Flashings/External Finish
There are two alternative methods to fix a flashing to the outer casings of a rendered stack:

Fold the flashing in over the edge of the casing protruding through the roof by approximately 10mm and fix accordingly. Scorch the protruding casings with a disc cutter or block saw to achieve a 10mm deep channel parallel with the roof. Fold the edge of the lead flashing into the channel and fix accordingly.

If the chimney is brick clad above the roof then traditional stepped flashing should be used. Proceed to normal building practice using a lead tray.

The lead tray should be turned up on the outside of the flue blocks by approximately 50mm.

Weep holes should be provided below the chimney capping to allow for any water vapour to escape between the inner flue blocks and outer casings. Finally traditional flaunching is used to seal around the protruding flue block or chimney pot.

Outer Surface
Casings should be dry lined or plastered internally. Externally they should be finished with waterproof render or brick cladding.

Heights Above Roof/Reinforcement
DM Chimneys can be installed without reinforcement up to 1.4m above the roof line. All casing and flue block joints to be sealed with lip glue. Above 1.4m, or if wind exceeds 44ms, please consult Schiedel Isokern Chimney Systems.

DM outer casings include holes for reinforcement rods, these rods should be grouted with 3:1 sand: cement mix. In some cases, as with free-standing chimneys, it may be necessary to secure the reinforcement into the chimney foundation. In this way chimneys can be constructed up to 9m free-standing.

If the DM system is constructed inside a masonry chimney stack, (built from foundations not off a corbel unit) which is constructed so that the height of the chimney stack does not exceed 4.5 times its overall horizontal dimension in accordance with BS6461 Part 1 1984, reinforcement is not required. The DM casings should be tied to brickwork using wall ties.

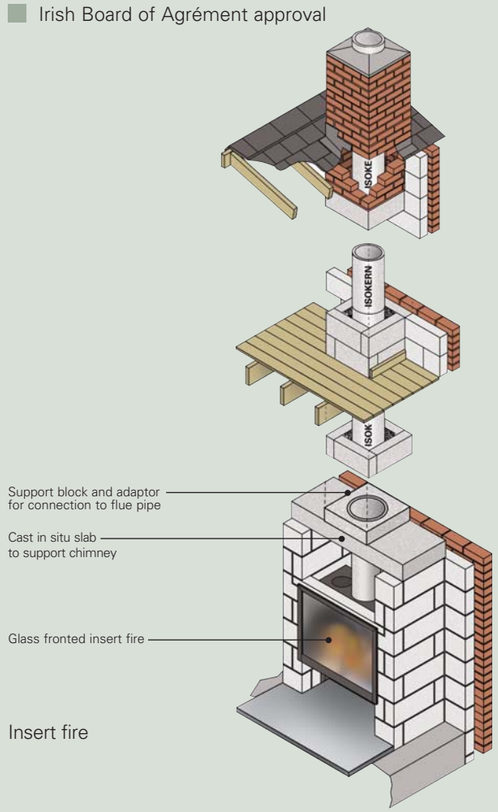
Liner System - for new and existing chimneys

The pumice liner system comes in a range of 18 diameters from 130mm to 1000mm with T Liners, Liner Support Blocks, and Access Blocks for ease of connection to the appliance.

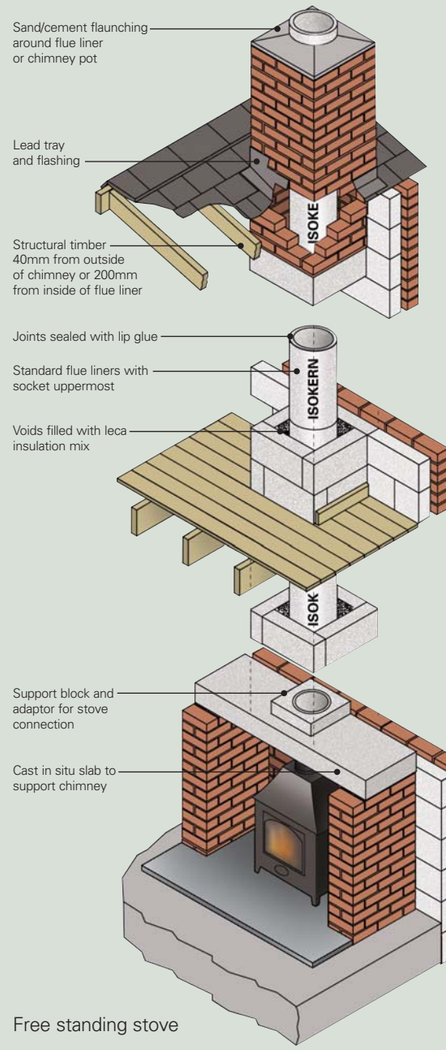
The insulated flue liner for traditional build

Suitable for use with inserts, stoves, pellet stoves (outlet temperature minimum 150˚C), cookers, open fires and Manor firechests

- Lightweight materials, easy to handle and cut
- Highly insulating pumice for better draw and minimum heat loss
- 600mm and 1000mm lengths mean fewer joints and fast to install
- 18 flue sizes available
- Good resistance to temperature variations gives the maximum performance for your appliance
- CE certified to EN1857 with the designation T450, N2, D, 3, G.
- Irish Board of Agrément approval



Insert fire



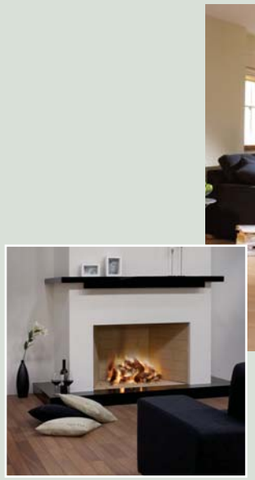
Free standing stove

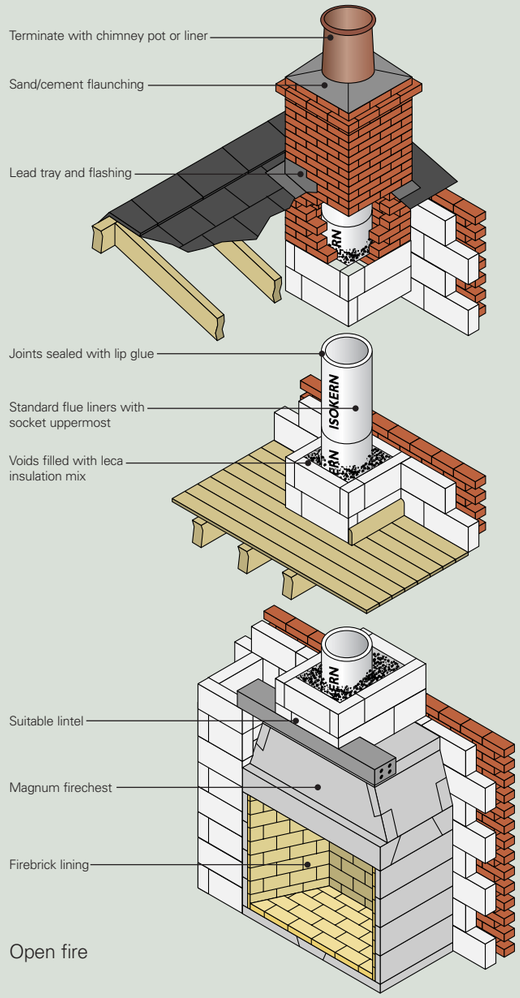
Liner System - for new and existing chimneys

Standard Components

Description
Liners
Bends
Support Blocks
Access Blocks
T Liners
Stainless Steel Adaptors and Decreasers

See web and our price book for full range of components.





Open fire

Accessories for all systems

Standard Accessories

Description
Chimney Topguards
Chimney Pots
Firebrick Slips
Firebrick Mortar
450mm Clay Fireback
50 Litre Bag of Leca Insulation (0.05m³)
Lip Glue Adhesive (5kg)

See web and our price book for full range of components.

Liner System - Technical Specification

Structural Timber Clearances
A minimum of 38mm clearance must be maintained between the structural timber and the outer surface of the brick/block chimney or 200mm from the outer surface of the flue liner. Floor boards, skirting boards, and other non-structural components may be in contact with the chimney.

Insulation Backfill
All liners and bends must be surrounded with a minimum of 15mm of leca insulation mixed 20:1 with cement. A small amount of water should be added for the mix to harden.

Offsets
Offsets can be achieved by using our pre-formed bends in 15, 30 or 45 degree angles. Lip glue must be used on all joints. An additional steel collar should be used to wrap around any cut joints between bends. All offsets must be fully supported by masonry and back filled with leca mix.

Flashing and Trays
Stepped flashing and trays should be fitted as per normal building practice. Lead trays should be turned up on the outside of the flue liners by approximately 50mm.

Heights above Roof
Chimneys should generally terminate at least 600mm above the ridge or 1000mm above the highest point of intersection with the roof. Masonry chimney stacks should not exceed 4.5 times their narrowest horizontal dimension above the roof.

Relining
Isokern pumice liners are ideal for relining an existing masonry chimney.

The first liner has notches on its base to allow a rope to be secured under it. This enables the liners to be lowered down the chimney. Liners are joined together using steel collars and lip glue. The rope controls the rate of descent until the first liner reaches its position on the gather or support block, then the knot will be loosened and the rope removed. A leca mix is poured down the chimney to surround the liners giving them support and insulation.

A separate instruction leaflet on relining is available.

Firechests

The ideal solution for creating open fires. The finished appearance is down to individual taste using one of the many fireplace surrounds on the market.

The Schiedel Isokern firechest complements the Isokern chimney systems which are designed to create a complete system, avoiding many of the variable factors that lead to draught problems and smoky fireplaces.

The Isokern firechest range is cast using lightweight, highly insulating pumice. The components interlock like pieces of a three dimensional jigsaw to form a sturdy, robust fireplace recess and gather. The joints are sealed using lip glue jointing compound. Starting from a suitable foundation and constructional hearth, assembly of the complete firechest and gather could take less than one hour.

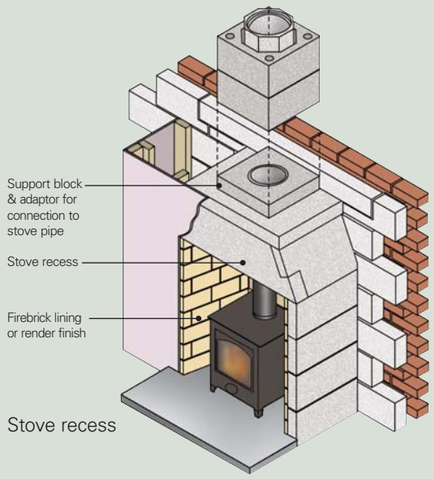
The range includes firechests with fire openings from 500 to 1250mm and a recess designed specifically for stoves. Each firechest is packed on a pallet with detailed assembly instructions. The firechest is load bearing and will carry up to 2600kg of chimney above, although you may exceed this weight with the use of additional lintels.

The NEW Magnum Firechest Range

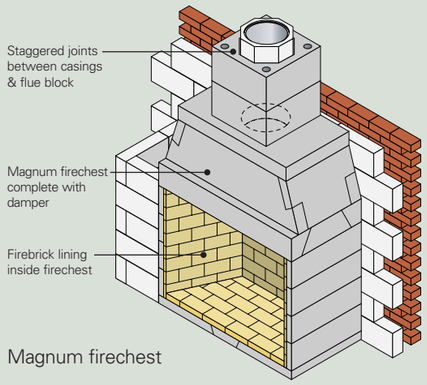
The new Magnum Firechest range has been designed to maximise the burning efficiency of wood in an open fire. The specially shaped fire chamber facilitates the efficient burning of wood logs to give efficiencies from 41% to 45%, depending on the model chosen. The firechests are tested to EN13229.

Damper

A flue damper is available in the Magnum range of firechests. In wood burning installations the flue damper can be used to control the draft in the flue and avoid excessive heat loss when the fireplace is not being used. This is reflected in the SAP calculation for Document L. The inclusion of the damper will halve the chimney ventilation rate in the SAP calculation. It must not be installed with gas fires.



Stove recess



Magnum firechest

Firechests and Gathers

Magnum Firechests

Code	Model	Efficiency	Opening Width	Opening Height	External Width	External Height	External Depth	Flue Size
80120	500	41%	510mm	540mm	685mm	1540mm	440mm	225mm
82036	950	45%	990mm	960mm	1090mm	1761mm	710mm	350mm
82042	1100	44%	1130mm	960mm	1230mm	1761mm	710mm	350mm
82048	1200	45%	1246mm	960mm	1346mm	1761mm	710mm	350mm

Manor Gathers

Code	Internal Width	External Width	External Height	External Depth	Flue Size
85036	940mm	1090mm	910mm	640mm	300mm
85042	1080mm	1230mm	1110mm	640mm	350mm
85048	1200mm	1350mm	910mm	640mm	350mm

Stove Recess

Code	Opening Width	Opening Height	External Width	External Height	External Depth
88036	940mm	1080mm	1090mm	1585mm	640mm

Standard Firechest

Code	Internal Width	External Width	Height	External Depth	Flue Size
85022	690mm	850mm	660mm	450mm	225mm

Standard Liner Gather

Code	Internal Width	External Width	Height	External Depth	Flue Size
85020	690mm	850mm	600mm	450mm	225mm

DM44 Gather

Code	Internal Width	External Width	Height	External Depth	Flue Size
85021	690mm	850mm	600mm	450mm	225mm

Concrete Gathers

Code	Internal Width	External Width	Height	External Depth	Flue Size
C15	600mm	800mm	225mm	450mm	200mm
C16	600mm	800mm	225mm	450mm	225mm
C17	800mm	1000mm	300mm	550mm	250mm
C18	800mm	1000mm	300mm	550mm	300mm

Flue Sizing

Each firechest has been tested to establish the optimum flue size required to give best possible performance. The recommended flue sizes are shown in the range table. The minimum flue height required is 4.5m above the fireplace opening.

Regulations and Requirements

Current building regulations require 100mm of solid non-combustible masonry to be built around the sides and back of the firechest. An adequate combustion air supply must be provided in accordance with our instructions or document J of the building regulations. The inside of the firechest should be lined with firebrick slips. Schiedel Isokern supply buff coloured firebricks. The finished fireplace opening size will be reduced when the bricks are installed.