

Ceramic Stove Glass

The Glass in your Stove

The glass in a wood or multifuel stove is a glass-ceramic panel that can tolerate exceptionally high temperatures and maintains a high thermal shock resistance. It is designed to withstand the temperatures within a stove under normal operation and it is a mechanically strong material and can sustain repeated and quick temperature changes. However, it is not totally unbreakable and it is still a brittle material, as both glass and ceramics are, it can be broken.

To help protect the glass they are fitted to the stoves door using a glass seal set. This firstly stops air leaking in around the glass but also allows for the differing expansion coefficients of the various door components. The metal door frame, most often a cast iron frame, the glass itself and the glass retaining clips, most often made of stainless steel.

The glass seals can be cut ceramic pads or lengths of ceramic rope seal. The rope seals often have a self-adhesive strip on them to aid in fitting them to the door frame.

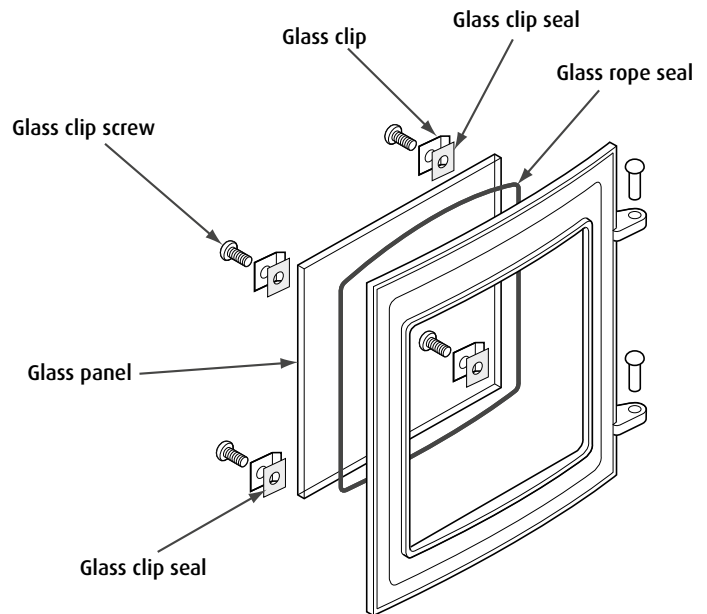
Care should be taken when tightening the glass clip screws so that they are not over tight. The clips and seals should hold the glass firmly but not clamped tight down onto the frame. If they are too tight then the glass could crack from this point across the glass or if all four corner screws are too tight then the glass can crack across the middle either horizontally or vertically.

We always recommend replacing the glass seals when ever the glass panel is replaced on a stove or when if is visibly frayed or damaged in any way.

If the glass cracks for what looks like no reason

Generally there has been some impact or sustained force placed on the glass such as closing the door onto a log or coal. This may not be enough to crack the glass at the time but is enough to produce a minor stress fracture in the glass, a weakness, which over time can lead to the glass cracking as it expands and contracts. A good example of this is a chip on a windscreen which suddenly cracks the screen in the in the cold weather.

If there was a fault in the glass during the manufacturing process then it will crack on the first few firings not, as some people think, a few months or ever years after it has been fitted.



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If the glass turns milky white and will not clean

Generally there has been direct impingement of an intense flame onto one area of the glass causing it to be superheated above its normal tolerances so changing the molecular structure of the glass.

This can often be seen where the primary air, under grate air, has been left open when burning wood or left too wide open when burning smokeless coal or anthracite forcing a flame directly onto the glass through the log guard. It could also be caused by an ash pan door seal having failed and needing to be replaced.

This milky white area cannot be cleaned away and will gradually get worse.



If the glass has fine crazing lines

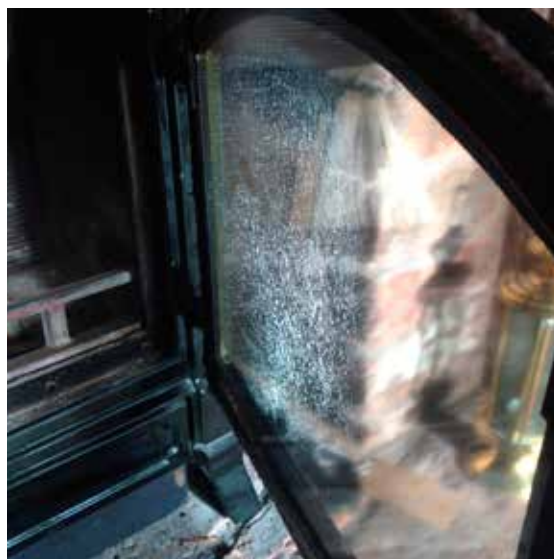
This is caused by sudden thermal shock on the face of the glass panel. It mainly occurs when the door or glass seal starts to leak in air. The seal may look good however they may not be forming a strong airtight seal. As the flue and stove heat up so does the surface of the glass, the flue draught increases and suddenly the seal allows cold air in across the face of the glass causing a sudden and damaging change in temperature.

Ensure that the seals in the door are well maintained to keep a good airtight seal to avoid the air leakage.

If the glass has become pitted and crazed

Burning house coal or smokeless coal with a high petroleum content can damage the glass by eating into it. They contain high levels of sulphur and when sulphur burns, it turns into sulphur dioxide. If this gas mixes with moisture, such as if the coal is damp or is burned with wood, the result is sulphuric acid, a highly corrosive acid as found in car batteries. The higher the sulphur content in coal, the more sulphur dioxide is produced and in turn the more potent this boiling hot acid becomes.

The excess heat produced by smokeless coal with high levels of petroleum coke, a by-product of the petrochemical industry, can also be so hot that it melts the surface of the glass causing it to bubble and pit.



We strongly recommend that you take advice from your smokeless coal supplier or seek advice from the Solid Fuel Association before using an unknown brand of smokeless coal. It may be cheap to buy but the repair bills to the stove may be a lot higher.