

# TECHNICAL BULLETIN #2: CRACKS IN REFRACTORY

**MAJESTIC**  
**VERMONT**  
*Castings*

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## THE NATURE OF CRACKS

With the heating and cooling of refractory on both masonry and factory-built fireplaces, you can expect some minor cracks to occur. Small hairline cracks in the refractory will almost always be present after repeated firings. When these fine cracks occur, you can rest assured that the homeowner can enjoy the fireplace with absolutely no danger. In fact, there is metal behind the refractory on a factory-built fireplace; therefore, even if the cracks get larger, the fireplace will still operate safely.

## REFRACTORY PRODUCTION

Vermont Castings, Majestic Products takes great pride in producing refractory to the highest possible standards. To further ensure the safety of the product, each fireplace with refractory installed is tested and certified as a system by Underwriters Laboratories. Refractory is a highly engineered product. Special raw materials are mixed at the Huntington refractory plant and poured into forms. The product is then cured for a stipulated time in a computer controlled environment. The finished product must then pass Vermont Castings, Majestic Products quality assurance standards before being installed in a fireplace.

## WHEN TO REPLACE REFRACTORY

One should consider replacing the refractory when large cracks occur. If the crack is larger than 1/16 inch the refractory should be changed. Also, if the refractory starts to crumble and fall apart in chunks, you should replace it.

Refractory replacement on a factory-built fireplace is a relatively simple task, which is executed by simply unscrewing a bracket, removing the original refractory and installing the new panel. Repairs are much more difficult on a masonry fireplace because experienced brick masons must use special materials to patch the cracks...and it's much more expensive.

## PREVENTION

To prevent the problem from happening in the first place, the homeowner should "condition" the refractory in a new fireplace by building relatively small fires for the first few burns and then gradually working up to larger fires.

When adding wood to the fire, one should use caution not to throw logs into the firebox, which may hit and damage the back refractory. In almost all cases, the back refractory shows the most signs of wear and tear because it takes the most abuse from heat and log impact. Very rarely do side refractory panels need to be replaced.

## CONCLUSION

As stated previously, factory built fireplace refractory is a highly engineered product, which if treated with care, will give the homeowner many years of problem free service. Small cracks are to be expected and if fine cracks appear, it's not a safety issue. Consider replacing the refractory when large cracks are present, pieces of refractory start to break off or if you wish to change refractory for aesthetic reasons.