Inspection Criteria for Ceramic Water Filters

1. 5% of the filter shipment will be inspected for flow rate, 10% will be visually inspected for Distortion and Cracks.
2. **Flow Rate** – 1.5 to 4.5 liters per hour. (Variations of up to .2 liters per hour will be accepted.)
3. **Distortion**
   1. Flatness - Rim of the filter must sit flat on receptacle within ***1 centimeter,*** or, when using Popular Plastic receptacles:
      1. If the filter rim does not fit onto the receptacle rim, the filter must be round enough so that it seals off any gaps between the filter and the receptacle so that no contamination can get in to the clean water.
      2. The filter must fit into the receptacle so that there is no more than ½ an inch between the top of the receptacle and the bottom of the filter’s rim.
   2. Circularity – Filter must be round enough to fit completely within the receptacle and must be able to be positioned so as to allow for no gaps between the outside rim of the filter and inside diameter of bucket.
4. **Cracks**
   1. There should be no cracks along the rim more than one centimeter long.
   2. Filters with visible cracks in the filtering area will be pressure tested to insure that the cracks do not pass all the way through the filter (Pressure testing consists of immersing the filters in water upside down, trapping air in the filter chamber, and checking to be sure there are no air bubbles coming from the cracks).
   3. Filters with visible cracks in the filtering area will also be visually inspected. If the cracks are obviously more than 25% of the filter thickness, the filter will be rejected.
   4. Auditory inspection (ringing the filters) will also be included. (Filters with through cracks have a dull/flat sound whereas filters with no cracks have a crisp ring to them)
5. **Firing inspection**
   1. 1% of the filters ordered will be broken so that we can inspect for thorough firing. Black lines within the filter must be no more than .25 cm in thickness. For each filter inspected that has a greater than .25 cm black line, another one will be randomly selected and inspected. If it is determined that there is a likelihood of more than 2% under-firing, the entire batch will be rejected.
   2. Or…….. 1% of the filter order will be randomly selected and broken open – if more than 15% show a carbon line of more than .25cm the entire batch will be rejected. They may be re-fired and resubmitted for inspection, if the shipment fails twice the serial numbers will be recorded and blacklisted. If all the filters pass the inspection the supplier will be paid for the broken filters, if the batch is rejected then there will be no compensation.
6. Filters will not be rejected based on aesthetics such as coloring on the outside, wrinkles left from the plastic bags used in pressing, nor small chips on the outside of the rim that would not affect the filter’s strength.

Proper Firing Procedure for Ceramic Water Filters

1. Fire slowly in the beginning, allowing the temperature to rise at a no more than 100° C per hour.
2. Continue at this rate until 400°C is reached.
3. You can then continue to fire at a rate of 150°C - 200°C per hour up until the number 09 cone falls. At this time, record the temperature on the digital pyrometer (it will probably be less than 900).
4. Hold this temperature for one hour, temperature can vary plus or minus 25 degrees.
5. If you follow this technique and you still find that you have a black line in your filters then you may have to fire to a higher temperature or maintain the 875°C and 925°C for even longer.
6. No matter what, we must not have any black line in the filters.