

# Leaking Bulkhead Fittings

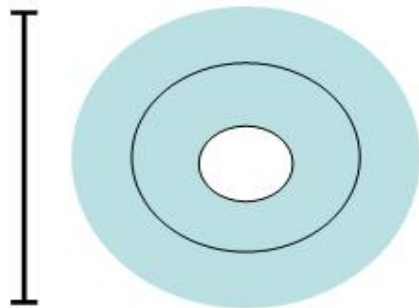
## Problem

This is a new problem because this summer it was determined that John Guest, which is the company that produces the bulkhead fittings that are used at the plants, makes a bulkhead fitting that is made out of non-reactive polypropylene and not the potentially reactive acetal copolymer fittings that were previously used.



Unfortunately even though the polypropylene fittings look the same, they are assembled differently than the acetal fittings. As can be seen in the picture below the old acetal fittings consisted of one solid main body. The new polypropylene fittings consist of a two piece body.

### Old Acetal Fitting

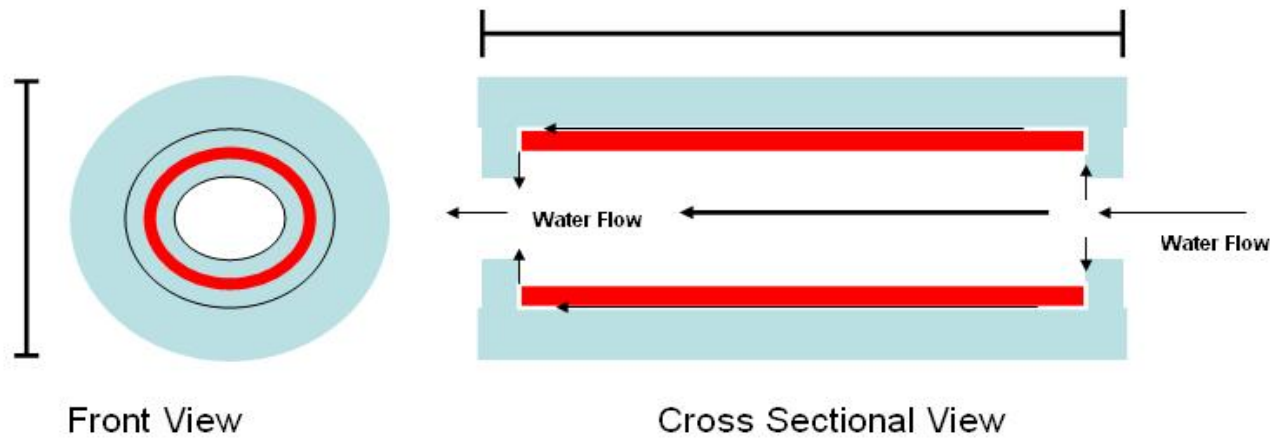


Front View



Cross Sectional View

### New Polypropylene Fitting

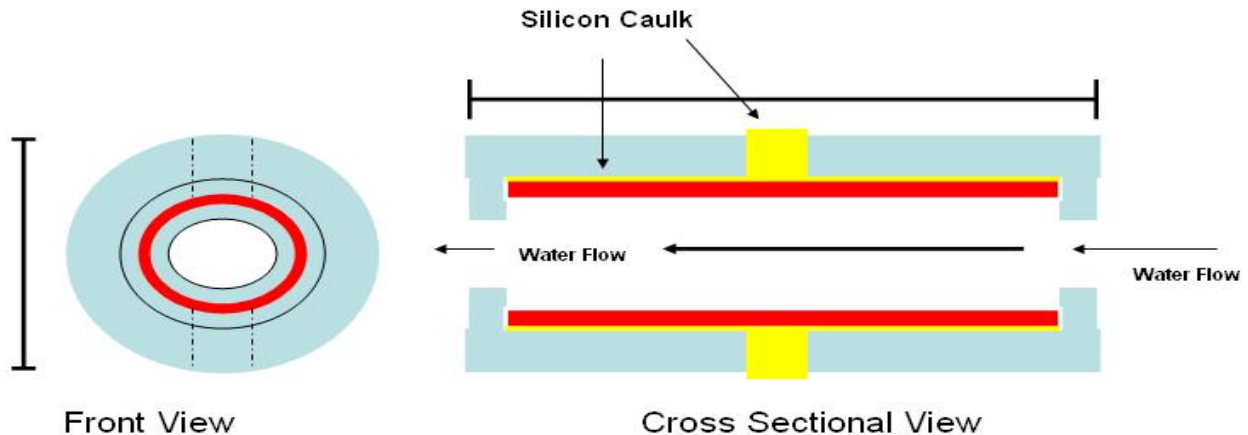


We currently submerge one side of the polypropylene fittings in water, and intern, water has been flowing between the body pieces which is not sealed or reinforced with an o-ring.

### Proposed Solution

Drill two holes, one on each side of the fitting. Each hole should only go as deep as the first piece of the body i.e. drill until you feel the end of the drill bit hit the second or inside piece of the body. Now you have one hole on each side of the body, each that only goes as deep as the outside of the second piece of the body. Next, acquire a tube of silicon caulk and cut the end of the insertion tube to the same diameter as the above holes that you have drilled into the body. Now, insert(squeeze) the silicone into the body through one hole in the body until you see it leak out the other hole. This will result in silicone filling the void between the two body parts and obstructing the flow of liquid through this path.

### Polypropylene Fitting with Silicon



### Further Investigation

A study of what epoxy or caulk would be non-reactive to the chlorine solution.