Technical Service Bulletin

April 2010 TSB402.01

Fiber Repair for HYDRAsub® -MBR

The following procedure describes the sealing of a single, damaged hollow fiber in a HYDRAsub® -MBR membrane element. Sealing of these fibers is required so that suspended solids and other contaminants do not enter the fiber lumen.

1. Remove the element from the module. Remove sludge and other debris from the element and store in an area free of sharp edges and debris. Take caution when handling the fibers as they may crack at the base near the potting compound if they are bent excessively.

2. Gently dry the damaged fiber with a clean paper towel. The remaining fibers should be kept wet to avoid drying of the membrane. Cut the damaged fiber down to no less than seven centimeters on each end of the element using a razor blade or very sharp scissors (refer to Figure 1). The fiber should be long enough to access without breaking it from the potting, but short enough so that it does not dislocate from the potting once returned to use due to agitation during aeration.

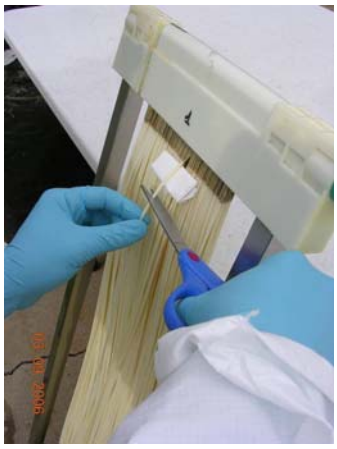

Figure 1. Cutting of the fiber

3. Dry the fiber with a separate piece of paper. Apply a water-resistant, two-part cold-setting epoxy resin adhesive (preferably with a practical curing time of less than 1 hour) to the tip of the fiber so that some epoxy penetrates the lumen as shown in Figure 2. An example of a suitable epoxy is Cemedine EP330, which can be found at http://www.cemedine.co.jp/e/product/epoxy.html.

Figure 2. Application of epoxy

4. Allow the adhesive to dry according to the manufacturers instructions (refer to Figure 3). The epoxy should be dry in about one hour. The element must then be immersed in water to keep the fibers wet. The element may be put into operation after the epoxy has cured per the manufacturer's instructions (preferably about 1 hour).

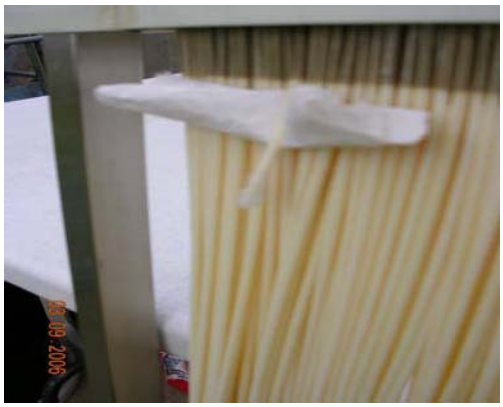

Figure 3. Drying of fiber

5. Repeat steps 1-4 for the other end of the same fiber.

Note: It is important to minimize the amount of time that the fibers are out of water. If the fibers dry out and lose their hydrophilic properties (ie. permeability of clean membranes in clean water does not return to approximately the same level as before the repairs)), please refer to TSB401.00 "Hydrophilic Treatment Procedure for HYDRAsub®-MBR."

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