



FILMTEC Membranes

Troubleshooting: Membrane Element Evaluation

Autopsy

After other tests have been performed, the ultimate method to determine the cause(s) of a performance loss is the destructive analysis (autopsy) of the FILMTEC™ element. The Dow Quality Department must be involved if destructive analysis is required in warranty cases.

The element is cut lengthwise to allow the membrane to be unrolled. Two to four cuts must be made, on opposite sides, just deep enough to penetrate the element casing. The element should be unrolled carefully so as to not damage the membrane surface. The structural integrity of the leaves is inspected. The membrane is fully examined and samples of the membrane and/or of the foulant are taken for analysis or plate and frame tests.

Pressure Dye Test: To determine the cause(s) and the location of a salt passage, the element is operated with a pressurized dye solution prior to the autopsy. Rhodamine B can be used as a dye. A pink permeate would indicate a damaged membrane. The dyed element is autopsied and examined for the location of dye passage. Damaged areas of the membrane will attain a pink color. This evaluation allows to distinguish between chemical (e.g. oxidative) membrane damages and mechanical damages, e.g. from permeate backpressure.

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For more information about FILMTEC membranes, call the Dow Liquid Separations business:

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