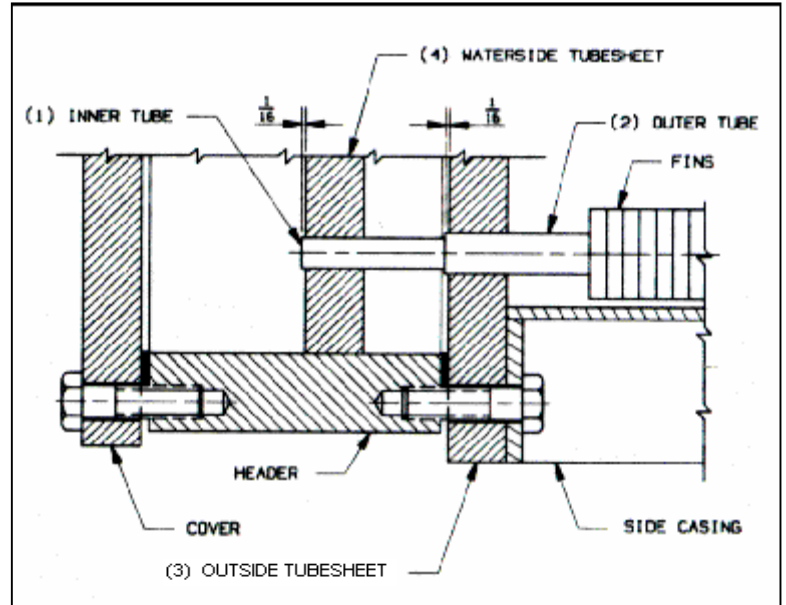


**UNIFIN LEAK DETECTOR SYSTEM**

A Leak Detector Cooler consists of three tubes; an inner liner tube (1), an outer leak detector tube (2) and the outer finned tube. All tubes are mechanically bonded together to ensure heat transfer. The inside of the leak detector tube has longitudinal grooves along the complete length. These grooves allow the drainage of water in the event of a leak in the inner tube. At the end, each of the liner tube and the outer leak detector tube are expanded into a tubesheet (items (3) and (4)). The gap between the two tubesheets forms the sealed "leak detector" chamber.

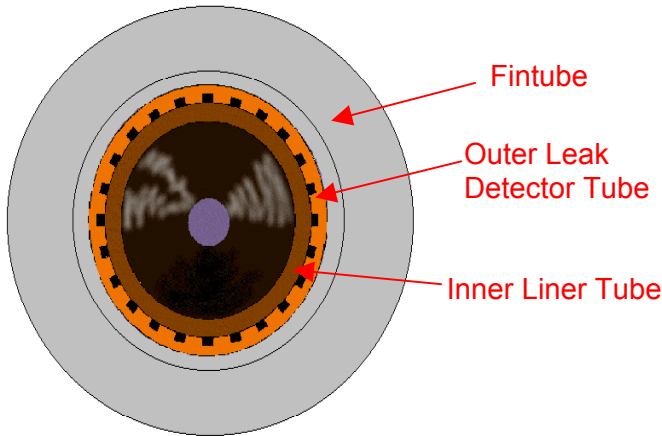
If a leak were to occur in either the inner or outer tube the fluid would drain down the longitudinal grooves and collect in the "leak detector" chamber. If a leak were to occur at either tube to tubesheet joint, the fluid would drain into the "leak detector" chamber as well.



The inner tube material can be 90/10 copper-nickel, 70/30 copper-nickel, steel, stainless steel, titanium or other metallic tube materials.

The leak detector chamber can be fitted with an alarm system to signal in the event of a leak.

One of the main features of the Leak Detector design is that the leaking fluid is captured and is drained into an isolation chamber. The fact that the leaking fluid is isolated in a chamber not only is a benefit because the two fluids do not mix, but it also allows time to respond by repairing or plugging the tube during the next outage.



**A view down the end of a tube**

The major applications of the leak detector design is in circumstances where the mixing of the two fluids could have catastrophic effects on the system such as water cooled transformers or TEWAC (water cooled) motors. Standard heat exchangers can be replaced by Leak Detector units. There is a slight heat transfer penalty for the leak detector design but often the performance can be re-gained by efficient designing or adapting the design conditions.