Recovering on WATER SUPPLY LINE LOSSES *Through Aggregation*

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WATER DAMAGE ACCOUNTS FOR SEVERAL BILLION DOLLARS IN LOSSES TO HOMEOWNERS AND RENTERS ANNUALLY. IN 2007 ALONE, WATER DAMAGE ACCOUNTED FOR ABOUT 22% OF ALL HOMEOWNERS' INSURANCE CLAIMS.

See Press Release, Insurance Information Institute, "Water Damage: What's Covered; What's Not" (Nov. 18, 2009), available at http://www.iii.org/press_releases/water-damage-whats-covered-whats-not.html.

Among the most common in-home water-related losses are those caused by failures of plumbing supply lines, which are used to connect toilet water tank fill valves to a home's water supply.

Modern plumbing supply lines utilize a flexible hose and coupling nut that connects the hose to the toilet water tank. The apparatus is called a flexible supply line, and when it fails, it does so by and large due to two major causes: the degradation and bursting of the supply line's hose, and the fracture of coupling nut made from thermoplastic. In both cases, the failure results from a defect in the components' design.

History

Flexible supply lines have existed for a generation and have enabled homeowners to purchase, install, and replace inexpensive plumbing fixtures by themselves. Early flexible supply lines used hoses made of three parts: an inner polyvinyl chloride tube that transported water, a surrounding woven polymer fabric mesh, and a translucent outer polymer cover. These early designs also used a copper- or nickel-plated brass coupling nut that installers could screw to a toilet water tank's fill valve, thus connecting the hose and the toilet. This design proved relatively reliable; if the flexible supply line did fail, such failures typically were not attributable to burst hoses or fractured coupling nuts. But with the advent of cheaper, lightweight plastics and stainless steel materials, flexible supply line manufacturers began designing their product components differently, often with disastrous consequences.

During the early 1990s through the first half of the 2000s, most manufacturers used a braided stainless steel sheath over a flexible supply line hose. These manufacturers assumed that the sheath's ability to withstand high internal water pressures would alleviate the need for a thick, burst-resistant interior water-carrying tube. As a result, the manufacturers began

designing hoses that used thinner, single-walled carrying tubes. Sometimes, these thinner tubes were only two millimeters thick and only one-tenth as burst-resistant as the carrying tubes in the original three-part tubing design.

What the manufacturers did not account for, however, was the steel sheath's susceptibility to chemical degradation—namely, from added chlorine found in almost all domestic tap water systems. Most flexible supply lines are installed underneath sinks, inside cabinets, and behind toilets—places with high humidity and low air circulation. Meanwhile, the braided sheath's mesh wiring architecture allows chlorine-rich domestic water to easily collect in crevices. Once the trapped moisture evaporates, the concentrated chlorine begins to eat away at the stainless steel wiring through oxidization. With the steel wiring corroded, water pressure causes the weak interior carrying tube to bulge and expand until it bursts.

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Around the same time that flexible supply line manufacturers were making changes to the line's hose, they began using acetal plastic coupling nuts to connect hoses to toilet fill valves. Unfortunately, the manufacturers did not anticipate a catastrophic side effect from the use of acetal plastic. Acetal plastic is susceptible to fracture wherever there are sharp notches or angles in the material. When the manufacturers replaced metal coupling nuts with plastic ones, they failed to realize that (absent simple design changes) the geometry of the nuts' screw threads would concentrate stresses in the plastic material much more severely than in metal. New plastic nuts use the same screw thread angles as did their metal predecessors—specifically, a sharp 90° corner that separate the plastic nut's threads from its base. Once screwed to the toilet fill valve, the plastic nut experiences stresses at this sharp corner that create a growing crack and, eventually, a fracture of the plastic.

The two modes of flexible supply line failure—the bursting of the steel-sheathed supply riser hose and the fracture of the plastic coupling nut—are therefore the foreseeable result of defective design. Historically, however, insurance carriers have been frustrated in their attempts to make successful subrogation recoveries on claims associated with this defective design.

Recovery Issues

Subrogation claims for losses caused by flexible supply line failures are often too small for insurance carriers to cost-effectively prosecute on an individual basis. For this reason, insurance carriers close many claims involving failed supply lines without any attempt to recoup losses. Further, even in instances where insurance carriers investigate and prosecute supply line failure claims, the investigations are often limited and the claims are litigated on a piecemeal basis, thereby resulting in the promulgation of inconsistent liability theories and adverse results.

Among the supply line manufacturers' favored defenses is the "over-tightening defense," predicated generally on one of two theories. First, the manufacturer argues that the fractured coupling nut displays evidence of tool marks. It contends these tool marks are conclusive evidence that whoever installed the supply line must have over-tightened the nut, ignoring the manufacturer's warning against use of a tool. Second, the manufacturer argues that the coupling nut displays evidence of a stress fracture that could only come from over-tightening. The manufacturer then contends that a warning was affixed to the supply line that cautioned against over-tightening (this warning, if it exists at all, comes simply in the form of the words "Hand Tight Only" or "Do Not Overtighten"). Essentially, the manufacturer argues that "someone else" ignored its warnings/directions and is therefore responsible for causing the product to fail.

The problem with this "over-tightening defense" is that it relies on a red-herring issue of warnings when the real concern is a design defect. Manufacturers have taken no steps to design away this problem and simply advise consumers to "not over-tighten." Modern products liability law, as articulated in *Restatement (Third) of Torts: Products Liability*, is overwhelmingly clear that a manufacturer cannot simply "warn away" its responsibility to create and distribute a safely-designed product. Further, manufacturers using this defense have never explained how this warning is effective or could be heeded. In fact, the warning gives no direction as to how much torque should be applied to sufficiently tighten the coupling nut without over-stressing the parts. Consumers / installers are ultimately in a position whereby they must guess as to how much torque is just enough to hold the coupling nut in place without "over-tightening."

Manufacturers also tend to argue the "state of the art defense," arguing that only a small percentage of flexible supply lines actually fail and cause property damage, and that no safer, cost-effective, alternative design exists. According to the manufacturers, design modifications would not be economically viable and they are therefore insulated from liability. Manufacturers argue this point despite established evidence showing the availability of economically feasible alternative designs.

Flawed and unsupported though these defenses are, they have tended to gain traction in individual litigations and arbitration proceedings. Consequently, most insurance carriers have met with unsuccessful recoveries, and many have all but given up hope for success in recouping damages payouts.

The Aggregation Approach

Developing reliably successful subrogation strategies involving flexible supply line failures requires a paradigm shift: replacing the piecemeal model to prosecuting claims with a comprehensive, "big-picture" approach.

This approach aims to aggregate flexible supply line claims that, on an individual basis, have been cost-prohibitive to pursue and susceptible to differing, inconsistent results. By grouping and investigating the claims as a mass tort, carriers can develop an investigation and litigation plan that is predicated upon uniformity and strength in numbers. The aggregation plan can implement procedures to insure that legal teams and experts are properly vetted, physical evidence is properly secured and preserved and theories of liability are substantively refined and applied in a consistent manner to all supply line claims. Ultimately, the goal is to aggregate claims arising out of common product defects and respond uniformly to manufacturers' common red-herring defenses. If properly developed and implemented, the aggregation method will provide a cohesive, cost-effective approach to the prosecution of supply line claims.