A good example of this is the recent development and marketing of FRP underground storage tank fill risers. Although risers in UST's have been metallic since tanks first went underground, the Fire Code has never specifically stated that they must be. As close as the Fire Code comes to specifying materials is by referencing ULC Standards that apply to "piping systems". If the riser is considered part of the piping system, then it seems that the Fire Code permits either steel or non-metallic (FRP) material to deliver product to the top of the tank.

The issue of FRP risers came to a head in the U.S. in 2020. Petroleum Equipment Institute's Recommended Practice 100 has been widely used as the standard for UST installations since 1986. Since 2005, RP 100 has stated, "*Do not use non-metallic piping for fill risers*". Their recommendation was based on steel's durability and inherent static electricity protection. Some piping companies have been selling heavy-duty FRP risers so PEI was forced to reconsider the metal-only recommendation. After canvassing installers, manufacturers, operators and regulators, the PEI committee decided to be neutral. The latest RP 100 states, "*Prior to installation, verify riser pipe is compatible with the product being transferred/stored and approved for use by the authority having jurisdiction*".

Within Alberta, this would bring us back to the Fire Code. Code developers prefer to reference standards so the regulations don't have to be too specific in options to meet levels of safety and protection. In this case, the authors of the PEI Recommended Practice have thrown the question of non-metallic risers back to the regulator. FRP is very likely robust enough for the job so I see the outstanding concern for all stakeholders is managing static electricity, especially for tanks storing gasoline. The Fire Code requires a metallic drop tube to be used and to terminate within 150 mm of the bottom of the tank. This is very useful in preventing a splash and increased potential for electrical charge build-up. However, if the drop tube is supported by a non-conductive material (like FRP), how would the static electricity charge be dissipated? The riser will be connected to a spill bucket which is also very likely to be constructed of a non-conductive material. RP 100 has also added a warning that, "*If a non-conductive riser pipe is installed, use proper grounding techniques to dissipate any static charge accumulation*." But, how do we do that? Conventional wisdom would have contractors attaching a copper wire to the top of the drop tube but extending the wire to a ground rod located outside the tank nest would be a challenge. This is a challenge our innovative manufacturers will very likely address. Until it is, system designers and contractors should be aware of this situation and know that there isn't always a current and reliable "how-to" manual to follow. APSSCA will attempt to keep you apprised of any developments on this and other issues that aren't easily addressed by using the Fire Code for guidance.

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