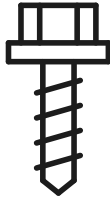


EPIC FAILS



WE'RE SCREWED



An end user will often spare little expense to make sure that the piping and its construction is installed properly because they recognize that this is critical for safety since it is the actual pressure containing envelope. However, insulation has always been the forgotten stepchild of ammonia refrigeration.

It isn't necessarily needed to make a system run and it doesn't, by itself, keep the ammonia in the pipes. Often times, the end user farms the insulation out to the lowest bidder. This low bidder is often a company with little to no experience insulating ammonia refrigeration piping and equipment. It is not uncommon for these low bidder insulators to install the outer aluminum jacket with sheet metal screws.

Most everyone is familiar with IAR2, the "American National Standard for Safe Design of Closed-Circuit Ammonia Refrigeration Systems," and they will refer to it as the Recognized and Generally

Accepted Good Engineering Practice (RAGAGEP) for our industry. What people in our industry often forget is that IAR2 is merely the RAGAGEP for DESIGN of ammonia refrigeration systems. There are many other codes and standards that are considered RAGAGEP for our industry and IAR4-2020, the "American National Standard for Installation of Closed-Circuit Ammonia Refrigeration Systems," is the

current RAGAGEP for the INSTALLATION of ammonia refrigeration systems.

If we look through IAR4, we find that it does, in fact, prohibit the practice of using sheet metal screws when installing insulation.

Section 8.1.11 states, "Screws, rivets, or any other jacket securement device that could pierce the underlying vapor retarder shall not be used. Only bands and seals shall be used to secure the jacketing."

The takeaway is this: Familiarize yourself with ALL codes and standards that are considered RAGAGEP for our industry. Be sure to include their provisions in a pre-startup safety review for all new and modified facilities.

If you have photos of an Epic Fail please pass them on to nh3isB2L@gmail.com.

Bill Lape is Project Director for SCS Engineers. Bill is a Certified Industrial Refrigeration Operator, a Certified Refrigeration Service Technician, and a member of the National Board of Directors of the Refrigerating Engineers and Technicians Association.