

## SELECTION OF INSULATION MATERIALS

In the past, the selection of insulation material to be used on piping systems and equipment, has largely been determined by picking up the Insulation Specifications Book (5A) and thumbing through it until we see a temperature range that fits our application. This was done without thought concerning problems that could occur because of the wrong insulation material. Energy conservation has brought about a great deal of new technology concerning insulation.

Prior to 1969, asbestos insulations were about the only insulation material used in Dow. Now, we don't specify any asbestos insulations in the Spec. book. This is due, in part, to the fact that government regulations for handling asbestos materials are so strict, that manufacturing and installation of asbestos is very expensive. Despite the fact we no longer use asbestos materials on new projects, many existing installations still have asbestos insulation. Sometimes we specify demolition of pipe and equipment; this must be done under very controlled conditions. These conditions are specified in the Dow Engineering Spec. 56-501, Section 8. In addition to these regulations, this work should be documented by the filling out of forms which tell whether these conditions were followed. These forms should be filed with the job folder, and should also record names of people directly in contact with the asbestos materials.

One of the special piping systems, and/or equipment materials, is aluminum. "Normal" types of insulations will react with the aluminum because of the alkalis. The aluminum will deteriorate rapidly. If the temperature is less than 300°F., you can coat the aluminum with mastic (per Dow Spec. 57-210) before applying conventional. If the temperature exceeds 300°F., you can insulate with mineral wool materials.

Another of the problem materials to insulate are some of your 300 series stainless steels. By now, almost all of us are familiar with chloride stress in stainless steel materials, but many of us do not know that calcium silicate insulation materials contain chlorides that can and will attack your stainless system. There are other insulation materials that can be used (such as high-density fiberglasses 56-503 and 56-553). If you still want to use the calcium silicate materials, the material can be treated with a sodium silicate solution which inhibits the chlorides. For information on how to do this, contact David Barnett, Building B-2403, phone ext. 1415.

Even the old standby, carbon steel piping and equipment systems, have enemies in the insulation materials. Recently, we have been informed that our foamglas insulations (Dow Specs. 56-505 and 56-555) have sulfides that attack carbon steel pipe at temperatures of less than 200°F. The way to prevent this, if you want to use foamglas on these carbon steel systems, is to first finish-paint this pipe with an epoxy paint (per Dow Spec. 57-227), then insulate with foamglass insulation materials.

These are just a few of the side problems encountered when selecting an insulation material. The number one criteria is still energy conservation; but, that is another subject altogether. For advise and help on insulation matters, call David Barnett, Building B-2403, phone ext. 1415.