ANTI-FOG REFRIGERATION DOOR AND METHOD OF MAKING THE SAME

ABSTRACT

The energy-free refrigeration door of the present application provides a way to control condensation when the door of a refrigeration unit is opened by providing thermal insulation to the door with glass panels which have a low emissivity coating. The door includes a door frame housing and an insulating glass unit comprising inner, middle and outer sheets of glass. A first sealant assembly disposed around the periphery of the inner and middle sheets of glass forms a first chamber between the inner and middle sheets of glass. A second sealant assembly disposed around the periphery of the middle and outer sheets of glass forms a second chamber between the middle and outer sheets of glass. A gas, such as krypton, air, or argon is held in the first and second chambers. The outer sheet of glass and inner sheet of glass each have an unexposed surface that faces the middle sheet of glass. A low emissivity coating is disposed on the unexposed surfaces of the inner and outer sheets of glass so that the glass door as a whole avoids formation of condensation on the outer surface of the outer sheet of the glass door, without the application of electricity to heat the door, while also providing the desired evaporation rate of condensation from the inner side of the inner sheet of the glass door. An anti-fog or anti-frost coating is included on a surface of one of the sheets of glass.

Fig. 3