

# 33 60 00 Hydronic and Steam Energy Utilities

Revision 01/04/2019

## **Purpose:**

The Architect and/or Engineer shall incorporate the Rice specific requirements indicated in this standard's section into their design. The Architect and/or Engineer shall further produce project specifications in line with industry standards that are updated to reflect these Rice specific requirements.

## **1. General Requirements**

- a. Chilled water temperature
  - i. Nominal: 40° Supply, 52° Return
  - ii. Range: 36° Supply, 56° Return
- b. Steam Pressure
  - i. Nominal: 50 psig
  - ii. Range: 40 - 75 psig
- c. Intended design temperatures and operating pressure will require approval from the University by 50% Design Development submission.

## **2. Direct Buried piping**

- a. Chilled water - Schedule 40 Carrier pipe, Phenolic insulation, HDPE outer jacket.
  - i. 4" and below may be HDPE carrier, polyurethane foam insulation and HDPE jacket, if approval is received from University Engineer prior to start of design.
- b. Steam - Schedule 40 Carrier pipe, calcium silicate insulation, HDPE outer jacket.
- c. Condensate - Schedule 80 Carrier pipe, Phenolic insulation, HDPE outer jacket.

## **3. Tunnel Piping**

- a. Chilled water - Schedule 40 pipe, Phenolic insulation, all service jacket Aluminum Jacket.
- b. Steam - Schedule 40 Carrier pipe, calcium silicate insulation, all service jacket Aluminum Jacket.
- c. Condensate - Schedule 80 Carrier pipe, calcium silicate insulation, all service jacket Aluminum Jacket.

## **4. Tunnel Penetrations**

- a. Tunnel penetrations to underground shall require Linkseal type adjustable seals.
- b. Tunnel penetrations into building basements/crawl spaces, shall require double Linkseal type adjustable seals.