

SECTION 22 05 19
PLUMBING METERING AND MONITORING
Design Standard

PART 1 GENERAL

1.1 PURPOSE

Metering and monitoring are an essential to the efficiency, efficacy, and functionality of mechanical systems. This design standard has the purpose of creating a consistent application of heating, ventilating, and air-conditioning requirements throughout San Mateo County Community College District therefore achieving a standard of quality for maintenance, reliability, and energy efficiency throughout all renovation and new building projects

All buildings shall receive water meters separating the use of domestic, irrigation and process water. Process water would be defined as use other than domestic water use or irrigation with expected usage of more than 1,000 gal/year. Specific examples are cooling towers, chilled and hot water makeup water systems, fountains and any other similar use.

All buildings with gas consumption shall meter the use of gas if the gas consumption exceeds typical lab use. Lab buildings with laboratory gas used only do not need to be metered separately from the main campus gas use. Any building with process or HVAC loads such as domestic water heaters, HVAC use of gas or other process loads shall be provided with gas meters. Buildings with separate heating plants shall have a gas meter for the boilers used for HVAC and/or domestic water use.

1.2 SUMMARY

- A. All new buildings and some completely retrofitted buildings, as defined by the District, shall incorporate metering into their design for the monitoring of the utility usage for the building. As a minimum, this shall include the main point of entry for gas and water consumption and demand.
- B. The meters shall be connected to a campus-wide Facility Management System that utilizes a dashboard interconnecting all existing and new meters. Other systems may also use the same meters for another purposes
- C. All meters shall be connected to the Facility Management System or other systems requiring the data from the meters installed. Any meter shall either be an IP meter or shall be serially connected to an appliance feeding the data to an IP access point capable to provide all points available at the meter, including points not listed in the specification.
- D. It is the intent that all building will receive at least one building level meter. For power metering T24/2016 or current equivalent shall be the minimum requirement. For structures not requiring T24 compliance, provide one meter at the feed to the structure.

1.3 GENERAL

- A. Related Documents:
 1. Division 22 Section 220800 "Plumbing Commissioning Requirements" for commissioning process activities for building systems, assemblies, equipment, and components.
 2. Division 23 Section 230800 "HVAC Commissioning Requirements" for commissioning process activities for building systems, assemblies, equipment, and components.
 3. Division 26 Section 260800 "Electrical Commissioning Requirements" for commissioning process activities for building systems, assemblies, equipment, and components.

4. Division 25 Section 255500 "Facility Management Systems" for commissioning process activities.
5. Division 25 Section 250100 "Utility Metering and Monitoring" for commissioning process activities.

1.4 SUBMITTALS

Product data for metering equipment.

1.5 QUALITY ASSURANCE

Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

Comply with NFPA 70.

PART 2 PRODUCTS

2.1 EQUIPMENT FOR CHILLED WATER AND HOT WATER METERING

- A. See section 25 01 00 Utility Metering and Monitoring and Section 25 55 00 Facility Management System
- B. All equipment shall be covered by manufacturer's transferable two-year "No Fault" warranty.

2.2 EQUIPMENT FOR BTU MONITORING

See section 25 01 00 - Utility Metering & Monitoring Note: Additional electronic monitoring devices and their associated wiring terminal strips may also be required based on SMCCCD project-specific requirements or other system-specific integration needs that may arise.

PART 3 EXECUTION

3.1 EQUIPMENT, CONDUIT AND WIRING INSTALLATION

- A. See section 25 01 00 Utility Metering and Monitoring and Section 25 55 00 Facility Management System

3.2 CLEANING AND PROTECTION:

Protect equipment and installations and maintain conditions to ensure that coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.

3.3 METERING AND SUBMETERING: See section 25 01 00 - Utility Metering & Monitoring and 25 55 00 Facility Management System

- A. For buildings with cafeterias, all services (natural gas and domestic water) shall be separately monitored from the main building in which the cafeteria is provided.

END OF SECTION