SECTION 12345 - LABORATORY CASEWORK AND RELATED PRODUCTS

PART 2: DESCRITPION OF WORK

2.06 SERVICE FITTINGS AND ACCESSORIES

A. MATERIALS:

1. Laboratory Service Fittings:
   Service fittings shall be laboratory grade, and water faucets and valve bodies shall be cast red brass alloy or bronze forgings, with a minimum content of 85%. All fittings shall be chromium plated unless specified otherwise.

2. Plastic Coated Finish (Sepia Bronze):
   When specified, laboratory service fittings shall have an acid resistant plastic coating applied over a fine sand-blasted surface. Surfaces shall be sprayed and baked three times with a minimum thickness of .0005 to .0010 mils. (See Performance Ratings).

3. Service Indexes:
   Fittings shall be identified with service indexes in the following color coding:

   Hot Water .....Red
   Cold Water .....Dark Green
   Gas.....Dark Blue
   Air.....Orange
   Vacuum .....Yellow
   Distilled Water ..White
   Steam.....Black
   Nitrogen.....Brown
   Oxygen.....Light Green
   Hydrogen.....Pink
   Special Gases ..Light Blue

B. CONSTRUCTION:

1. Water Fittings:
   Water fittings shall be provided with a renewable unit containing all operating parts which are subject to wear. The renewable unit shall contain an integral volume control device and all faucets shall be capable of being readily converted from compression to self-closing, without disturbing the faucet body proper. Four (4) arm forged brass handles shall contain plastic screw-on type colored service index buttons.

2. Steam Fittings:
   Steam fittings shall have a black, heat resistant composition handle, and shall be the heavy pattern design with stainless steel removable seat and flat Teflon seat disc. They shall have Teflon impregnated packing, and shall be so constructed that they can be repacked under pressure.

3. Distilled Water Fittings:
   Distilled water fittings shall be chromium plated cast bronze with the interior tin lined, and shall be the self-closing type, or shall be made of aluminum and not be the self-closing type. Handles shall be furnished with tamper-proof and vandal resistant service indexes.

4. Laboratory Ball Valves:
   Laboratory ball valves shall have a forged brass valve body with a non-removable serrated hose end and a forged brass lever-type handle with a full view color-coded index button. Valves shall have a floating chrome plated brass ball and molded TFE seals. Valves shall be certified by CSA International for use with natural gas under ANSI Z21.15./CGA9.1

5. Needle Valve Hose Cocks:

Needle type valves shall have a stainless steel replaceable floating cone, precision finished and self-centering. Cone locates against a stainless steel seat, easily removable and replaced with a socket wrench. Valve shall have "TEFLON" impregnated packing and designed so unit can be repacked while under pressure.

6. Gooseneck Type Outlets:
   Gooseneck outlets shall have a separate brazed coupling to provide a full thread attachment of anti-splash, serrated tip or filter pump fittings.

7. Remote Control Valves:
   All valves for remote control use shall be as previously specified, but shall be complete with aluminum extension rods, escutcheon plates, brass forged handles and screw-on type colored service index button.

8. Tank Nipples:
   Tank nipples shall be provided with locking nut and washer for all fixtures where fittings are anchored to equipment.

9. Sink Outlets:
   Unless otherwise specified, sink outlets for other than stainless steel sinks shall be sin, with integral cross bars, tapered for overflow and be complete with gasket and lock nut with 1-1/2" I.P.S. male straight thread outlet. Overflows shall not be furnished for sink outlets unless specifically called for.

10. Crumb Cup Strainers:
    Crumb cup strainers shall be stainless steel or chromium plated brass, as specified, and shall be furnished for stainless steel sinks, and be complete with gasket, lock nut and 4" long unthreaded tailpiece outlet in 1-1/2" size.

11. Vacuum Breakers:
    Vacuum breakers where required shall be "Nidel" or "Watts" unless otherwise specified or identified to be an integral part of the water fixture assembly.

12. Aerator Outlets:
    Aerator type outlets shall be furnished for all gooseneck water faucets not furnished with serrated hose connectors.

13. Waste Lines:
    Waste lines shall be furnished by other trades.

14. Traps:
    Traps shall be furnished by other trades.

15. Electrical Fittings:
    Electrical fittings shall contain 20 Amp., 125 Volt AC, 3-wire polarized grounded receptacles, unless otherwise specified. Pedestal and line-type boxes shall be of aluminum, metallic finish with stainless steel flush plates. Receptacle boxes shall be of plated steel. All electrical or conduit fittings called for or to be furnished under these specifications shall meet the requirements of the National Electrical Code.

C. PERFORMANCE:
   1. Maximum Line Pressures:
      Laboratory Ball Valves (Gas and Air) ..... 75 PSI
      Needle Point Cocks (Gas and Air)..... 65 PSI
      Vacuum..... 28.5" Mercury
      Hot and Cold Water ..... 80 PSI
      Steam ..... 30 PSI

2. Sepia Bronze Finish Performance:
   Finish shall show no rupture, other than a slight discoloration or possible softening when subjected to the following fumes for approximately six (6) days: Plastic coated fittings shall be suspended in a container, 6 cu. ft. capacity 12" above open beakers, each containing 199 cc. of 70% Nitric Acid, 94% Sulphuric Acid, 37-38% Hydrochloric Acid, respectively. Finish shall also withstand direct contact of reagents dropped from a burette at a rate of 60 drops/min. for a period of 10 minutes. Chemicals are shown below:

   Concentrated Hydrochloric Acid 37-38%*
   Concentrated Nitric Acid 70%*
   Concentrated Sulphuric Acid 94%
   Glacial Acetic Acid 99.5%*
   Ethyl and Other Alcohols
   Toulene and Other Hydrocarbons
   Carbon - Tetrachloride
   Mineral Oil

   *Percentages are by weight.