Mechanical Engineer

California State Personnel Board Specification

- **Schematic Code:** HH85
- **Class Code:** 3583
- **Established:** 03/18/1981
- **Revised:** 04/18/2000
- **Title Changed:** --

Definition

This is the entry, first working, and journey level of professional engineering work. Incumbents are assigned duties and responsibilities commensurate with their background, training, and experience. Under direction, incumbents perform a wide variety of field and office mechanical engineering assignments in connection with mechanical engineering design, drafting, and inspection work; and do other related work.

Typical Tasks

Mechanical Engineers perform mechanical engineering work in the design, plans, and specifications for mechanical systems in dams, electrical power and pumping plants, substations, radio stations, highways, tunnels, bridges, and institutional and office buildings; prepare designs, detailed drawings, and specifications for mechanical systems such as heating, ventilating, air-conditioning, refrigeration, plumbing, water supply and water purification systems, sanitary and drainage systems, and steam generating plants; check working drawings; prepare material lists and purchase requisitions; make detailed field inspections of material, equipment, and construction operations; make or supervise the installation, repair, or recommend improvements of mechanical equipment or systems; lead the work and review the reports of lower-level engineers; and prepare correspondence and reports.

Minimum Qualifications

Education: Graduation from a curriculum in mechanical engineering accredited by the Engineers' Council for Professional Development, or equivalent qualifications. (Registration as a Senior in such a curriculum will admit applicants to the examination, but they must produce evidence of graduation before they will be considered eligible for appointment.)

Or Possession of equivalent qualifications may be demonstrated by qualifying in a written examination covering basic mechanical engineering and by graduation from an engineering curriculum which includes the engineering courses normally included in a standard four-year

course in mechanical, chemical, or industrial engineering. (Registration as a Senior in such a curriculum will admit applicants to the qualifying written examination, but they must produce evidence of graduation before they will be considered to meet the minimum qualifications.)

Knowledge and Abilities

Knowledge of: Engineering fundamentals and mathematics; designing and preparing plans, layout, specification writing, and estimates for heating, ventilating, instrumentation, pumping, lubrication, piping, air conditioning, refrigeration, plumbing, sanitary, pressure tank, water, water purification and drainage systems, and steam generating plants in common use, including principles of fluid flow, heat transfer, mechanical methods of power and material transmission, thermodynamics, and hydraulics pertaining to the design of water systems, pressure tanks, pumps, sewer systems, and other similar installations; various codes, safety orders, and regulations governing the design and installation of mechanical equipment, including electric motors; procedures of building construction as it relates to the installation of mechanical equipment; principles of leading the work of others.

Ability to: Prepare plans, specifications, and estimates for heating, ventilating, air-conditioning, refrigeration, plumbing, sanitary, water, water purification and drainage systems, and steam generating plants in common use; do mechanical design work; make correct computations; make neat and accurate lettering, drawings, and technical sketches; specify proper equipment materials; accurately interpret drawings and specifications; determine required sizes for radiators, traps, pipes, and other units; direct or inspect field construction operations or make field inspections and tests of mechanical installations; lead the work of others; check drawings and specifications; establish and maintain cooperative relations with employees and with those contacted in the work and whose work is being inspected; analyze situations accurately, and adopt and take effective action; prepare correspondence and make effective oral and written reports.

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