

Materials Engineering Manager

Who are they?¹

Materials Engineers managers oversee a team of Material Engineers. Material Engineers create new materials for many different applications, including airplanes, medical devices, cooler bags for lunches, and carbon fiber 3D filament. Materials Engineers study resources at the atomic level to determine the resource's mechanical, electrical, and chemical properties. The Materials Engineers then use that research to create new materials or repurpose existing materials to be used in exciting applications. They work for universities, corporations, and the government. Some Material Engineers specialize in ceramics to create everything from rocket shielding to glass for TV screens.

What do they do?²

The Materials Engineer Manager monitors the performance of other engineers. They meet with customers, and they discuss project specifications. The Manager then designs a plan and estimates project costs. They delegate responsibilities to members of the team to carry out the plan. The Manager will then oversee the work on the project paying attention to process safety and environmental compliance. The Manager is also responsible for the department budget as well as the professional development for the engineers in the department. They take a more significant role in maintaining plant engineering standards.

How do I become one?

Materials Engineers must have a bachelor's degree in engineering. From there, they go on to earn a master's degree in materials engineering. Some schools even have a 5-year program that includes a bachelor's degree and a master's degree. Most employers require the program to be ABET-accredited and the Engineers to be fully licensed through the PE Metallurgical and Materials exam³. Work experience as a Materials Engineer is a must for a manager and some managing experience to become a team leader. Some positions may require a Ph.D. in Materials Engineering. Having a strong background in math, biology, chemistry, physics, and computers are essential to becoming a Materials Engineer Manager.

¹ Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Materials Engineers, on the Internet at <https://www.bls.gov/ooh/architecture-and-engineering/materials-engineers.htm> (visited August 16, 2019).

² Great Sample Resume, Job Responsibilities, Engineering Manager Responsibilities and Duties, on the Internet at <https://www.greatsamplesresume.com/job-responsibilities/engineering-manager-responsibilities/> (visited August 16,2019)

³ NCEES , PE Metallurgical and Materials exam , on the Internet at <https://ncees.org/engineering/pe/metallurgical-materials/> (visited August 16,2019)

In addition to a bachelor's degree, this position requires:

- A passing score on the Fundamentals of Engineering (FE) exam
- A passing score on the Principles and Practice of Engineering (PE)
- A passing score on the PE Metallurgical and Materials exam
- A license for each state the engineer is employed.
- Master's degree in Materials Engineering
- Relevant work experience

Salary Ranges*

Materials Engineer: \$55,000–\$80,000

Senior Materials Engineer: \$75,000–\$110,000

Materials Engineer Manager: \$100,000–\$150,000 + Bonus

Materials Engineer Director: \$135,000–\$200,000 + Bonus

*Salaries given are averages for Stanley Black & Decker. Salaries may vary between a state's urban, suburban, and rural districts and should be adjusted for cost of living.

Job Outlook

The Materials Engineer Manager field is expected to grow by 6% by the year 2026. The work in Materials Engineering is critical to biomedical engineers in their development of medical implants. They are inventing new materials every day, such as a wood sponge that can be used to clean up our oceans⁴.

⁴Interesting Engineering, 7 New Materials Invented in 2018 that Could Change Our Lives ,on the Internet at <https://interestingengineering.com/7-new-materials-invented-in-2018-that-could-change-our-lives> (visited August 16, 2019)