
Painting and Coating Workers, Except Construction and Maintenance

(O*NET 51-9121.00, 51-9122.00, 51-9123.00)

Significant Points

- About 7 out of 10 jobs are in manufacturing establishments.
- Most workers acquire their skills on the job; training usually lasts from a few days to several months, but becoming skilled in all aspects of painting can require 1 to 2 years of training.
- Overall employment is projected to decline, but employment change will vary by specialty.
- Good job prospects are expected for those with painting experience.

Nature of the Work

Millions of items ranging from cars to candy are covered by paint, plastic, varnish, chocolate, or some other type of coating solution. Painting or coating is used to make a product more attractive or protect it from the elements. The paint finish on an automobile, for example, makes the vehicle more attractive and provides protection from corrosion. Achieving this end result is the work of painting and coating workers.

Before painting and coating workers can begin to apply the paint or other coating, they often need to prepare the surface. A metal, wood, or plastic part may need to be sanded or ground to correct imperfections or rough up a surface so that paint will stick to it. After preparing the surface, the product is carefully cleaned to prevent any dust or dirt from becoming trapped under the paint. Metal parts are often washed or dipped in chemical baths to prepare the surface for painting and protect against corrosion. If the product has more than one color or has unpainted parts, masking is required. Masking normally involves carefully covering portions of the product with tape and paper.

After the product is prepared for painting, coating, or varnishing, a number of techniques may be used to apply the paint. Perhaps the most straightforward technique is simply dipping an item in a large vat of paint or other coating. This is the technique used by *dippers*, who immerse racks or baskets of articles in vats of paint, liquid plastic, or other solutions by means of a power hoist.

Spraying products with a solution of paint or some other coating is also quite common. *Spray machine operators* use spray guns to coat metal, wood, ceramic, fabric, paper, and food products with paint and other coating solutions. Following a formula, operators fill the machine's tanks with a mixture of paints or chemicals, adding prescribed amounts of solution. Then they adjust nozzles on the spray guns to obtain the proper dispersion of the spray, and they hold or position the guns so as to direct the spray onto the article. Operators also check the flow and viscosity of the paint or solution and visually inspect the quality of the coating. When products are drying, these workers often must regulate the temperature and air circulation in drying ovens.

Some factories use automated painting systems that are operated by *coating, painting, and spraying machine setters, operators, and tenders*. When setting up the systems, operators position the automatic spray guns, set the nozzles, and synchronize the action of the guns with the speed of the conveyor carrying articles through the machine and drying ovens. The operator also may add solvents or water to the paint vessel to prepare the paint for application. During the operation of the painting machines, these workers tend the equipment, observe gauges on the control panel, and check articles for evidence of any variation from specifications. The operator uses a manual spray gun to "touch up" flaws.

Powder coating is another common technique for painting manufactured goods. Powder coating machines achieve a smooth finish on metal objects. Workers oversee machines that electrically charge the metal object so that it acts like a magnet. The object enters a powder room filled with powdered paint that is attracted to the magnetic object. After being covered in the powder, the object is baked in an oven where the paint melts into a smooth paint finish.

Individuals who paint, coat, or decorate articles such as furniture, glass, pottery, toys, cakes, and books are known as *painting, coating, and decorating workers*. Some workers coat confectionery, bakery, and other food products with melted chocolate, cheese, oils, sugar, or other substances. Paper is often coated to give it its gloss or finish and silver, tin, and copper solutions are often sprayed on glass to make mirrors.

The best known group of painting and coating workers are those who refinish old or damaged cars, trucks, and buses in automotive body repair and paint shops. *Transportation equipment painters*, also called *automotive painters*, who work in repair shops are among the most highly skilled manual spray operators because they perform intricate, detailed work and mix paints to match the original color, a task that is especially difficult if the color has faded. The preparation work on an old car is similar to painting other metal objects. The paint is normally applied with a manually controlled spray gun.



Transportation equipment painters work in well-ventilated paint rooms.

Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Painting workers	51-9120	192,000	184,000	-8,000	-4
Coating, painting, and spraying machine setters, operators, and tenders	51-9121	106,000	93,000	-14,000	-13
Painters, transportation equipment.....	51-9122	54,000	59,000	4,600	8
Painting, coating, and decorating workers	51-9123	31,000	32,000	1,100	4

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

Transportation equipment painters who work on new cars oversee several automated steps. A modern car is first dipped in an anti-corrosion bath, then painted with the color of the car, and then painted in several coats of clear paint. The clear paint prevents scratches from damaging the colored paint on the car.

Most other transportation equipment painters either paint equipment too large to paint automatically—such as ships or giant construction equipment—or perform touch-up work to repair flaws in the paint caused either by damage during assembly or flaws during the automated painting process.

Whatever object is being painted and in whatever method, the painting process is often repeated several times to achieve a thick, smooth, protective coverage.

Work environment. Painting and coating workers typically work indoors and may be exposed to dangerous fumes from paint and coating solutions, although in general, workers' exposure to hazardous chemicals has decreased because of regulations limiting emissions of volatile organic compounds and other hazardous air pollutants. Painting usually is done in special ventilated booths with workers typically wearing masks or respirators that cover their noses and mouths. More sophisticated paint booths and fresh-air systems are increasingly used to provide a safer work environment.

Operators have to stand for long periods, and when using a spray gun, they may have to bend, stoop, or crouch in uncomfortable positions to reach different parts of the article. Some painters work suspended from ropes to reach high places.

Most painting and coating workers work a normal 40-hour week, but automotive painters in repair shops can work more than 50 hours a week, depending on the number of vehicles that need repainting.

Training, Other Qualifications, and Advancement

Most workers acquire their skills on the job; training usually lasts from a few days to several months, but becoming skilled in all aspects of painting can require 1 to 2 years of training.

Education and training. Training for beginning painting and coating machine setters, operators, and tenders and for painting, coating, and decorating workers, may last from a few days to a couple of months. Coating, painting, and spraying machine setters, operators, and tenders who modify the operation of computer-controlled equipment may require additional training in computer operations and minor programming. Most transportation equipment painters start as helpers and also gain their skills informally on the job.

Becoming skilled in all aspects of painting usually requires 1 to 2 years of on-the-job training and sometimes requires some formal classroom instruction. Beginning helpers usually remove trim, clean, and sand surfaces to be painted; mask surfaces they do not want painted; and polish finished work. As helpers gain experience, they progress to more complicated tasks, such as mixing paint to achieve a good match and using spray guns to apply primer coats or final coats to small areas.

Additional instruction in safety, equipment, and techniques is offered at some community colleges and vocational or technical schools. Some automotive painters are sent to technical schools to learn the intricacies of mixing and applying different types of paint. Such programs can improve employment prospects and speed promotion. Employers also sponsor training programs to help their workers become more productive. Additional training is available from manufacturers of chemicals, paints, or equipment, explaining their products and giving tips about techniques.

Other qualifications. Painting and coating workers in factories need to be able to read and follow detailed plans or blueprints. Some workers also need artistic talent to paint furniture, decorate cakes, or make sure that the paint on a car or other object is the right color. Applicants should be able to breathe comfortably wearing a respirator.

Certification and advancement. Voluntary certification by the National Institute for Automotive Service Excellence (ASE) is recognized as the standard of achievement for automotive painters. For certification, painters must pass a written examination and have at least 2 years of experience in the field. High school, trade or vocational school, or community or junior college training in automotive refinishing that meets ASE standards may substitute for up to 1 year of experience. To retain the certification, painters must retake the examination at least every 5 years.

Experienced painting and coating workers with leadership ability may become team leaders or supervisors. Many become paint and coating inspectors. Those who get practical experience or formal training may become sales or technical representatives for chemical or paint companies. Some automotive painters eventually open their own shops.

Employment

Painting and coating workers held about 192,000 jobs in 2006. Coating, painting, and spraying machine setters, operators, and tenders accounted for about 106,000 jobs, while transportation equipment painters constituted about 54,000. Another

31,000 jobs were held by painting, coating, and decorating workers.

Approximately 7 out of 10 wage-and-salary workers were employed by manufacturing establishments, particularly those that manufacture fabricated metal products, transportation equipment, industrial machines, household and office furniture, and plastic, wood, and paper products. Outside of manufacturing, workers were employed by independent automotive repair shops and by motor vehicle dealers. Less than 4 percent were self-employed.

Job Outlook

Overall employment of painting and coating workers is expected to decline slowly, but employment change will vary by specialty. Good job prospects are expected for those with painting experience.

Employment change. Overall employment of painting and coating workers is expected to decline slowly by 4 percent from 2006 to 2016. Declining employment is expected because better spraying and coating machines and techniques allow fewer workers to produce the same amount of work. But employment change will vary by specialty.

Employment of coating, painting, and spraying machine setters, operators, and tenders is expected to decline 13 percent as improvements in the automation of paint and coating applications raise worker productivity, allowing fewer workers to accomplish the same work. For example, operators will be able to coat goods more rapidly as sophisticated industrial machinery moves and aims spray guns more efficiently.

Employment of transportation equipment painters is projected to grow 8 percent. Many transportation equipment painters work in autobody repair and the need for these workers is expected to increase as the number of cars on the road goes up. Growth in the ship building industry is expected to create additional openings for those who paint ships.

Painting, coating, and decorating workers are projected to grow 4 percent. Growth will be driven by growing employment in retail operations. In manufacturing, competition from imports and automation should reduce employment. However, the specialized skills required by these workers should limit job losses from automation.

Job prospects. Like many manufacturing occupations, employers report difficulty finding qualified workers. Opportunities should be good for those with painting experience. Excellent opportunities will exist for experienced painters in the oil and gas industry and the ship building industry over the next decade.

Earnings

Median hourly earnings of wage-and-salary coating, painting, and spraying machine setters, operators, and tenders were \$12.90 in May 2006. The middle 50 percent earned between \$10.34 and \$16.28 an hour. The lowest 10 percent earned

less than \$8.67, and the highest 10 percent earned more than \$19.87 an hour.

Median hourly earnings of wage-and-salary transportation equipment painters were \$17.15 in May 2006. The middle 50 percent earned between \$13.29 and \$23.08 an hour. The lowest 10 percent earned less than \$10.82, and the highest 10 percent earned more than \$28.10 an hour. Median hourly earnings of transportation equipment painters were \$17.15 in automotive repair and maintenance shops and \$23.98 in motor vehicle manufacturing.

Median hourly earnings of wage-and-salary painting, coating, and decorating workers were \$11.04 in May 2006. The middle 50 percent earned between \$9.00 and \$14.09 an hour. The lowest 10 percent earned less than \$7.55, and the highest 10 percent earned more than \$18.23 an hour.

Many automotive painters employed by motor vehicle dealers and independent automotive repair shops receive a commission based on the labor cost charged to the customer. Under this method, earnings depend largely on the amount of work a painter does and how fast it is completed. Employers frequently guarantee commissioned painters a minimum weekly salary. Helpers and trainees usually receive an hourly rate until they become sufficiently skilled to work on commission. Trucking companies, bus lines, and other organizations that repair and refinish their own vehicles usually pay by the hour.

Many painting and coating machine operators belong to unions, including the International Union of Painters and Allied Trades, the Sheet Metal Workers International Association, the United Auto Workers, and the International Brotherhood of Teamsters. Most union operators work for manufacturers and large motor vehicle dealers.

Related Occupations

Other occupations similar to painting and coating workers include painters and paperhangers and machine setters, operators, and tenders—metal and plastic. Painters who work in auto body repair work closely with automotive body and related repairers.

Sources of Additional Information

For more details about work opportunities, contact local manufacturers, automotive body repair shops, motor vehicle dealers, vocational schools, locals of unions representing painting and coating workers, or the local offices of the State employment service. The State employment service also may be a source of information about training programs.

For a directory of certified automotive painting programs, contact:

► National Automotive Technician Education Foundation, 101 Blue Seal Dr., SE., Suite 101, Leesburg, VA 20175. Internet: <http://www.natfef.org>