



How can we calculate powder coating cost on any component with only the surface area known?

Example for Mini-Van Door Slide

Process Data:

- 1.5 million pairs/year
- 3 million parts/year
- 1,500 parts/hour
- 3 million parts ÷ 250 workdays = 12,000 parts/day
- 12,000 parts ÷ 8/day = 1,714 parts/hour
- Surface area per part = 1.7 ft.²
- Powder cost per pound = \$8.17

A pound of powder with a specific gravity of 1.0 at 100-percent utilization will cover 192.3 ft.² at a thickness of 1 mil. That is the starting point for calculating the powder cost.

- 192.3×0.90 material utilization with reclaim ÷ 2 mils thickness × 1.4 specific gravity = ft.²/lb.
- $173 \div 2.8 = 61.8$ ft.²/lb.
- $61.8 \text{ ft.}^2/\text{lb.} \div 1.7 \text{ ft.}^2/\text{part} = 36.4$ parts/lb.
- $\$8.17$ (cost per pound) ÷ 36.4 parts/lb. = \$0.224 + \$0.03 (add for rack losses) = \$0.254/part

Labor cost looks at the number of workers and total wages:

- Average wage per hour with benefits: \$15
- Number of people to staff system: 13
- Total wages: $\$15 \times 13 = \$195/\text{hour}$
- $195/\text{hour} \div 1,714 \text{ parts/hour} = \$0.11/\text{part}$

\$20.00 hourly wages

- Average wage per hour with benefits: \$20
- Number of people to staff system: 13
- Total wages: $\$20 \times 13 = \$260/\text{hour}$
- $260/\text{hour} \div 1,714 \text{ parts/hour} = \$0.15/\text{part}$

Variable line burden is added to the total labor cost:

- System utilities \$50/hour
- Packaging \$20/hour
- Supplies \$20/hour
- **Total \$90/hour**
- $90/\text{hour} \div 1,500 \text{ parts/hour} = \$0.06/\text{part}$

Fixed costs are the building, debt, administration, etc. A typical amount might be around \$600/hour:

- $\$600/\text{hour} \div 1,500 \text{ parts per hour} = \$0.40/\text{part}$

Total Cost:

- Material \$0.10
- Labor \$0.11
- Burden \$0.06
- Fixed cost \$0.40
- **Total cost per piece \$0.67**

This type of formula can be set up in a spread sheet for quoting purposes. When the process data is filled in, the spread sheet does the work for you.