

What is a Bill of Materials?

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A bill of materials (BOM) is like a recipe. It provides the components and quantities necessary to make 1 unit of a finished product. It serves 2 purposes; manufacturing and accounting. On the manufacturing end, the BOM may include special instructions and processes in addition to the listing of components. From an accounting point of view, the BOM provides important costing information.

The following are four examples of the type of costs that can be included in a BOM.

Parts

Most BOMs will have one or more parts. Parts are straightforward because they are 'variable cost'. Direct costs are cost that vary directly with production. In other words, if you don't produce the item you will not incur the cost. By contract, rent is an 'fixed cost'. You will still incur rent whether you produce the item or not.

On BOMs you should be aware of unit of measure conversions. A simple example is a steel rod which is inventoried as FEET but used in production in INCHES. The BOM should use 1/12th of a foot for every inch used. Luckily, NumberCruncher Work Orders does all the unit of measure conversions for you.

Contract Labor

Contract Labor is non-employee labor that you use to produce or partially produce finished goods. For example if you make shampoo, but out source 'filling', then filling is a 'variable cost' that should be included on the BOM.

Employee Costs

Generally employee cost is fixed cost which will not change based on production, so how do you figure the cost that should be included on the BOM? Assume an employee (including benefits) costs \$36,000 and produces a total of 4000 units of a finished product per annum (and produces nothing else). Based on a 2000 hour year, the employee cost is \$18/hour (\$36,000 divided by 2000) and the quantity of hours on the BOM is 1/2 hour (2000 divided by 4000).

Overhead

Overhead is a fixed cost that includes rent, utilities, management salaries and depreciation. Many production processes require using expensive machines and therefore depreciation of the machines should be factored into costs.

For example, assume a machine costing \$50,000 with a useful life of 10 years can produce 1,000 units per year. The annual depreciation is \$5,000 plus \$2000 for repairs and maintenance for a total of \$7,000. The cost per hour of machine time based on a 2000 hours per year is \$3.50 (\$7,000 divided by 2000) and the quantity per is 2 hours (2000 hours divided by 1000 units).

As you can see from the above including variable costs such as parts and contract labor is fairly straight-forward. However, including fixed costs such takes a bit of guess work especially at first because you have no historical data to base your assumption on. Regardless, on a monthly basis you should carefully re-evaluate production assumptions and change the cost and quantities accordingly.
