

Understanding Dimensional Weight Pricing

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When it comes to calculating shipping and handling fees, merchants make a number of mistakes that can cost money. A big one is neglecting to pay attention to the rules parcel carriers have instituted for shipping large, lightweight packages.

FedEx, UPS, the U.S. Postal Service and other major small parcel carriers have adopted what's called the dimensional weight pricing rule—or box size—to calculate shipping costs on ground shipments. That means retailers that ship lighter, larger-than-average-size packages that take up extra space on an airplane or a truck will pay higher shipping costs than they did under the old definitions for oversize packages.

Every package a carrier puts on a plane or a truck takes up space—space that is at a premium, particularly if a truck is able to carry more weight than the cargo it is carrying. Because the carrier's fixed price per truck is basically the same no matter the size of the load, charging based on dimensional weight ensures that the carrier is getting paid appropriately for the space the packages take up on its planes or trucks.

Dim weight calculations more precisely reflect what it costs a carrier to ship an oversize, lighter-weight package.

To calculate the dimensional weight of a package, multiply (length in inches) x (width in inches) x (height in inches) to determine the cubic size of your package. For UPS and FedEx Ground shipments to the US, if the cubic inches exceed 5,184 inches or 3 cubic feet, dimensional weight rates will apply; if the total cubic inches measure less than 5,184 inches, then you typically use the actual rates for the weight of the package.

After you've calculated the cubic size of your package and determined that it's 5,184 cubic inches or greater, you can calculate the dimensional weight by dividing the cubic size of your package by 194 for ground shipments within the U.S., rounding up to the nearest full pound. Keep in mind that dimensional weights are rounded up by the carriers.

Your billable weight will either be the actual weight or the dimensional weight of package—whichever is greater. That means if you ship lighter packages that are more than 3 cubic feet, you'll pay more under the dimensional weight rate system.

For example say you have a box measuring 24" x 18" x 18" that weighs 50 lbs. and is to be shipped via UPS. The actual weight is 50 lbs.; dimensional weight = (24 x 18 x 18)/194 = 40.08 = 41 lbs. The dimensional factor = 194.

The actual weight exceeds the dimensional weight. So the actual weight (50 lbs.) will be used as the chargeable weight for the shipment.

Now let's say you have a box measuring 24" x 18" x 12" box that weighs 10 lbs. and will be shipped by FedEx. The actual weight is 10 lbs., the dimensional weight = (24 x 18 x 12)/194 = 26.7 = 27 lbs., the dimensional factor = 194.

The dimensional weight exceeds the actual weight. So the dimensional weight (27 lbs.) will be used as the chargeable weight for the shipment.

For UPS and FedEx air-express shipments, the same dim calculation applies, but without the 3-cubic-ft. (5,184 inches) minimum.

What's more, UPS and FedEx also add a \$45 oversize charge for packages that measure more than 130 inches in length and circumference. (You can calculate this by adding the length of the package plus twice the height plus twice the width.)

If you can believe it, the dim rules for the Postal Service's Priority Mail zones are a bit more complicated. For USPS zones 1 through 4, the minimum dim weight is 20 lbs. if the length plus the girth equals more than 84 inches, but less than 108 inches.

But there's a different rule for Priority Mail zones 5 through 8. For those zones, if package volume is more than one cubic foot (1,728 cubic inches), divide the cubic inches (length x weight x height) by 194 to get the dim weight.

It's important to note, however, that all the Priority Mail and Flat Rate cartons provided by the USPS are excluded from the dim rules. That can be key for volume shippers.

USPS's Parcel Post packages have different rules as well. There's a 20-lb. minimum for these packages if the length plus girth is more than 84 inches but less than 108 inches. If the length plus girth is more than 108 inches but less than 130 inches, you have to use the USPS oversized rates, which vary by zone.

One last thing about dim weight: For the USPS, UPS and FedEx international packages, including UPS and FedEx ground shipments to Canada, the dim factor is 166 rather than 194.

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USPS needs to adopt the same DM rules as UPS & FedEx. They would likely attract more shippers if they simplify their rules.

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