



Pound - Volume Cost Calculation

General Purpose flexible compounds are available in a variety of Durometers. For a given Durometer, they are also available in a wide range of Specific Gravities (SG). At a given Durometer, as the SG increases, the unit cost/pound decreases and mechanical properties change per the following table:

MECHANICAL PROPERTIES OF SOME POLYONE 65A DUROMETER COMPOUNDS

SG	Tensile Strength (psi)	Elongation (%)
1.15	1490	440
1.24	1400	410
1.32	1100	400
1.49	1000	355

Choosing a certain Durometer compound based solely on a cost/pound basis may not be the most cost efficient method since PVC compounds are purchased by the pound but are sold by the linear foot.

To calculate the cost of a given profile, one must know the cross-sectional area, the SG of the compound and the cost/pound of the compound. A quick method of comparing different compounds of the same Durometer is simply to multiply the SG by the cost/pound (since the dimensions will be the same they can be ignored in the calculation). This generates what is commonly called a pound-volume cost. The following table compares the same 4 compounds listed above.

POUND-VOLUME COST CALCULATION OF 65A COMPOUNDS

SG	Cost (\$/lb. US)*	Pound-volume cost
1.15	0.96	1.1040
1.24	0.92	1.1408
1.32	0.87	1.1484
1.49	0.81	1.2069

* RELATIVE PRICING AT THE TIME OF WRITING THIS BULLETIN

As can be seen, the compound with the lowest SG has the lowest pound-volume cost despite having the highest cost on a \$/pound basis. This means it would have the lowest cost on a \$/linear foot basis among this series of compounds.

This method can be used to compare any series of compounds. However, it must be recognized that in comparing compounds, choosing one based on its pound-volume cost might require compromising some other property. For example, Geon® "A" series compounds are glossy, and gloss diminishes in going to a "B", then to a "C" and ultimately to a "D" series compound. So if moderate to low gloss is a requirement, then choosing the "A" series compound based on the pound-volume cost calculation may not ultimately be the best choice.



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