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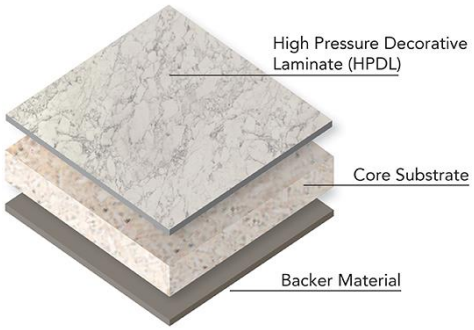
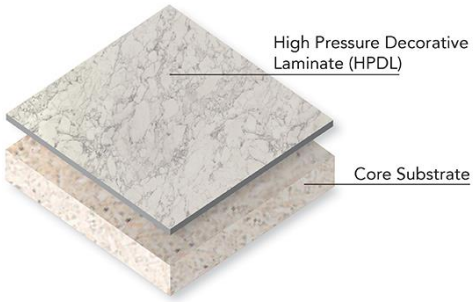
The Importance of Balanced Construction for Laminate Countertops

What is balanced construction and why is it important for laminate countertops? Balanced construction refers to the number of layers and the assembly of those layers. According to *Architectural Woodwork Standards*, to achieve balanced construction, panels should be symmetrical from the center line; ie: use materials on either side that contract or expand, or are moisture permeable, at the same rate. Balancing sheet requirements for decorative laminate fabrication vary with the product. Countertops or cabinet members, on the other hand, merely require some form of balancing material. [1] An unbalanced laminate countertop is one that does not have backer applied to the underside of the countertop core/substrate.



Balanced Construction



Unbalanced Construction

Laminate countertops, although their name does not suggest it, are by-in-large produced with a variety of wood products acting as the substrate for the laminate surface. Particleboard, plywood, and medium density fiberboard (MDF) are the industry standard substrate materials used by all national and regional manufacturers. Even less common are the countertops that are constructed with honeycomb cores, usually constructed of reinforced cardboard. Additionally, some substrates are less inclined to warp than others. For example, medium density fiberboard (mdf) is less likely to warp than particleboard due to how the products are constructed.

[1] Gustafson, Stanley R., editor. *Architectural Woodwork Standards*. 2nd ed., Architectural Woodwork Institute, Architectural Woodwork Manufacturers Association of Canada, Woodwork Institute, 2014.

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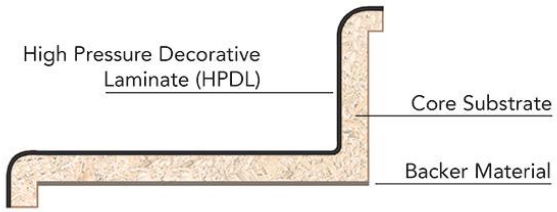

With unbalanced construction the rate at which the materials expand and contract differ. The side covered in laminate will expand and contract at a lesser rate than the raw substrate on the underside of the core when exposed to high heat or humidity, thus resulting in warping as illustrated in the photo below.

Warped Laminate Countertop

Balancing materials, such as phenolic backer on the underside of the core material help achieve balanced construction and prevent moisture absorption thus minimizing warpage. Phenolic backer is essentially sheets of kraft paper that have been saturated with phenolic resin. These sheets are then fused using high heat and pressure. The sheets are then sanded and cut to size.

Underside of a laminate countertop without backer

Underside of a laminate countertop with backer

Wider and longer runs of laminate countertops have a higher instance of warpage. This reduces the risk of the products warping due to their inherent vulnerability to moisture penetration when exposed to a multitude of atmospheric conditions.

In conclusion, balanced construction is one of the most effective ways to reduce the risk of unwanted warping and warping related fabrication issues. This is especially true for applications where longer and wider runs of laminate countertops are required or in geographic areas that experience high heat and high humidity.

For additional information about backer options from VT Industries, please contact our customer service team at 1.888.287.8356.