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Skiving & You

XLPE foams are not necessarily flat to begin and when the skins are removed on a typical skiver, whatever low or high spots remain. Mechanically our splitters are very accurate. However, machine capability along with characteristics of the material ultimately determines our thickness tolerances.

Terminology:

Splitting: Involves the progressive cutting of the material in half to reach the required dimension

Skiving: Involves cutting a thinner sheet off of a thicker piece

Environmental Factors:

Temperature: XLPE is a thermoplastic with a high coefficient of thermal expansion and changes in temperature can be impactful on the size of the material.

Types of skiving:

Roller Splitting/Skiving: The material is compressed between two rollers in order to push it through a fixed ultra sharp knife edged blade. Thickness is controlled by the relative distance of the rollers from the blade and the amount of compression required to push the foam through the blade.

Characteristics

1. Cuts with compression
2. Faster for large quantity jobs
3. Can cut heavier, harder foams

Drawbacks and Limitations:

1. Less accurate
2. Larger potential variation within a sheet
3. Larger potential variation between sheets

Vacuum Table Skiving / Looping: Material is held flat to a table through the use of air suction, and the table is passed through an ultra sharp knife edged blade. Thickness is controlled by the relative distance of the blade from the table. The first pass(s) will level the material. The table will continue moving, with the blade dropping a defined thickness each time until done.

Characteristics

1. Material is not compressed
2. Levels the blocks
3. Each block is processed individually



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Drawbacks and Limitations

1. More expensive
2. Maximum density in most instances of 4lb
3. Limited to cutting 1” per pass

Due to block leveling, more material is typically consumed (lower yields)
 Looping - is just the process of making continuous rolls out of buns that have been seeded together to create a loop. These are done on vacuum table skivers designed for this process.

Skiving Tolerances

While there are ASTM standards that address skiving tolerances, most notably D4819, Standard Specification for Flexible Cellular Materials Made from Polyolefin Plastics. **Worldwide Foam has chosen to define its own standard tolerances that are tighter than those in the ASTM.** Tolerances requested that are tighter than the below will need to be custom quoted.

Roller Splitter/Skiver Tolerances:

Thickness in Inches	Tolerance in Inches
.125 - .3125	+/- .03125
.32 - .875	+/- 10% of thickness
.88 - 2	+/- .094
Greater than 2”	+/- .125
2” single stage designated with the R code	1.94 +/- .06 (2” max)

Vacuum Table Tolerances:

Thickness in Inches	Tolerance in Inches
.0625 - .3125	+/- .10%
.32 - 1	+/- .032

Note: Vacuum Table is limited to 4lb density and below and 1” maximum in most circumstances.

Process Checks: We verify thicknesses by measuring the 1st, 2nd, and every 25th sheet thereafter at 4 different points. These measurements are recorded in our production logs. More frequent measurements can be done based on customer request. There is no guarantee that all sheets will be within the tolerances at every point due to this process.