Phone: +52 477 571 0033

Email:
info@worldwidefoam.com.mx

Worldwide Foam S De RL De CV Av.
Libre Comercio 107
Parque Industrial Santa Fe
CP 36275
Silao, Guanajuato, México

Skiving & You

PE foams are typically manufactured in sheets or blocks which may not be perfectly flat due to the expansion process used to create the foam. Even when removing the outer "skins", whatever high or low spots were on the foam will remain.

Elastomeric foams are made from a blend of various polymers and can present some unique challenges. They are flexible and deformable which can make it more difficult to maintain consistent thickness during skiving. Some elastomers have a higher coefficient of friction which can affect how they interact with the cutting blade and lead to variations in thickness.

Our equipment is very accurate, and our processes help ensure this accuracy. However, it is important to note that the final thickness tolerances are not solely a function of the machine performance but are also influenced by the unique characteristics of the material. If strict tolerances are necessary for your application, contact us for available solutions.

Terminology:

Splitting: Progressive horizontal cutting of the material in half to reach the required dimension

Skiving: The process of cutting a thin sheet from a thicker block or bun

Skin: Outer layer or surface of foam formed during manufacturing that is typically denser

Looping: The process of making continuous rolls out of buns that have been seamed together to create a loop. This is done on vacuum table skivers designed for this process.

Temperature Factors:

Changes in temperature can have pronounced effects on PE and Elastomeric foams. Exposure to heat induces expansion in these materials, while cooling prompts contraction. Additionally, a notable change occurs in their physical properties, with an increase in temperature making the foam softer, and a decrease causing it to stiffen.

Types of skiving:

Roller Splitting/Skiving: The material is compressed between two rollers 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.

Phone: +52 477 571 0033

Email:
info@worldwidefoam.com.mx

Worldwide Foam S De RL De CV Av.
Libre Comercio 107
Parque Industrial Santa Fe
CP 36275
Silao, Guanajuato, México

Characteristics	Drawbacks and Limitations:
1. Cuts with compression	1. Less accurate
2. Faster for large quantity jobs	2. Larger potential variation within a sheet
3. Can cut denser foams.	3. Larger potential variation between sheets

Vacuum Table Skiving / Looping: Material is held flat to a table using 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	Drawbacks and Limitations
1. Material is not compressed.	1. Lower yields due to block leveling.
2. Levels the blocks.	2. Maximum density of 4 lb. in most instances.
3. Each block is processed individually.	3. Limited to cutting 1” thick maximum.

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)

Phone: +52 477 571 0033

Email:
info@worldwidefoam.com.mx

Worldwide Foam S De RL De CV Av.
Libre Comercio 107
Parque Industrial Santa Fe
CP 36275
Silao, Guanajuato, México

Vacuum Table - PE Tolerances

Thickness in Inches	Tolerance in Inches
.079 - .75	+/- .03125
.76 - 1	+/- .0625

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

Vacuum Table – Elastomeric Tolerances

Thickness in Inches	Tolerance in Inches
<0.09375"	+.03"/-.015"
>0.09375"-.3125"	+/-.03"
>0.3125"-0.5"	+/-.045"
>0.5"-0.75	+/-.06"
>.75"-0.875"	+/-0.075"
>0.875"-1"	+/-.09"
>1"-1.25"	+/-0.125"
>1.25"-1.5"	+/-0.15"
>1.5"-2"	+/-0.18"