Natural Talalay Latex

The route from liquid milk to resilient performance foam

Tapping:

Worldwide, an estimated 2,000 species of plants produce latex of varying rubber content and quality. The rubber tree Hevea Brasiliensis gives high yields of very pure rubber and is now the source of virtually all commercial rubber production. The majority of plantations are in South East Asia.

Natural latex milk is tapped from rubber trees, concentrated and shipped to the factory.

Note: When natural rubber is tapped from a tree it is very dilute, the rubber content being only about 30%. It has to be concentrated before use to above 61.5% solids. Of these solids 60.0% is rubber, the remaining 1.5% are compounds that are unique to natural latex (proteins, phospholipids, carbohydrates, amino acids). These unique ingredients are very important in achieving the unique resilient properties of natural latex.

Mixing & Foaming:

The raw latex is mixed with a small amount of nontoxic inorganic additives and foamed with air to the desired density.

Filling

Special pin-molds are partially filled with the latex mixture. The pins make sure that the temperature needed for processing is evenly conducted right into the heart of the core to assure consistent firmness and structure throughout.

Vacuum

The mold is closed, sealed and a vacuum is applied which causes the foam to expand to fill the mold completely. Dependent on how much mix is used, the resulting latex foam core will be softer or firmer.

Freezing

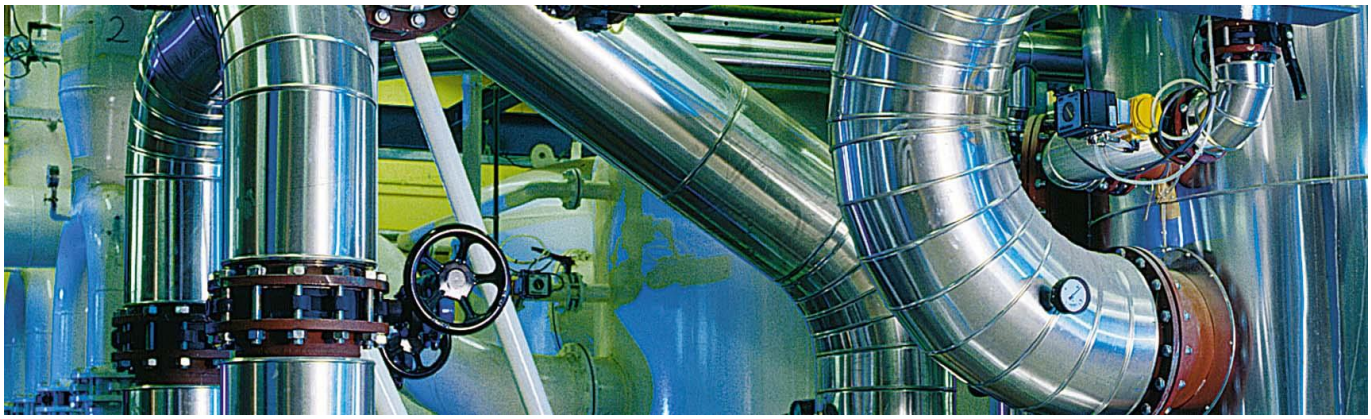
The mix is now frozen which is the crucial step in creating Talalay's unique interconnected cellular structure. Other than the closed cells in Standard Process latex (a.k.a. Dunlop process) the open cells in Talalay allow the material to breathe resulting in better humidity and temperature control which is important for a dry and healthy sleep climate. This is also why Talalay is more durable than any other comfort material.

Gelling/Setting

Gelling is another key step in the foam making process. It is at this point that a phase change occurs and liquid foam becomes ‘solid’ foam. In the Talalay process carbon dioxide gas which is acidic is passed through the foam to lower its pH & set it. (In the Standard Dunlop latex process the foam is set by adding sodium silicofluoride (SSF) as a gelling agent.)
At this stage the foam is very weak and could not be removed from the mould intact. The strength is built during the next stage – vulcanization.

Pre-vulcanisation

The process of heating rubber with sulphur is called vulcanization and was discovered by Charles Goodyear in 1839. During this step, the gelled foam is heated to 240°F and the sulphur which was added at the mixing stage, reacts with the double bonds in the rubber molecule to form bridges with adjacent molecules, known as cross-linking.
This is what gives the product its familiar properties of elasticity and resilience. Without sulphur, the latex foam would resemble chewing gum and would have little resilience.



Washing

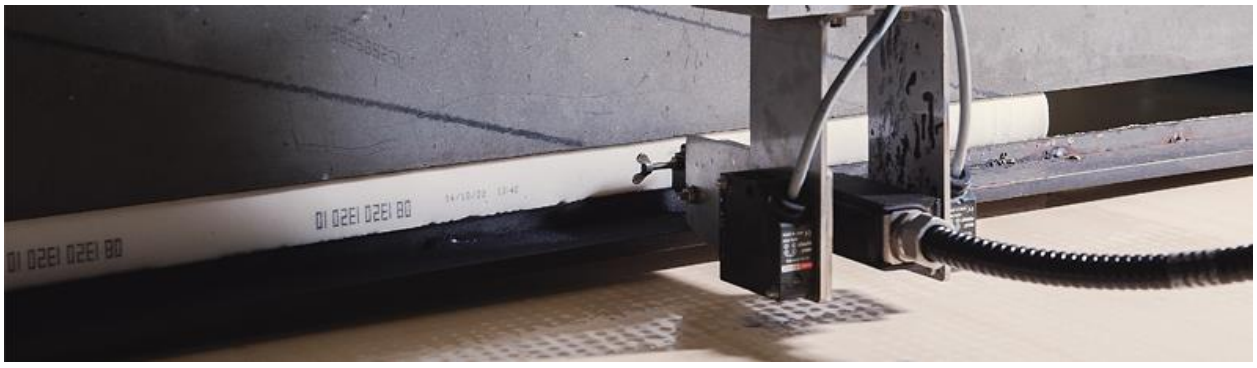
From here, the latex is rinsed and squeezed repeatedly with fresh water to remove any residuals from the formulation process which have served their purpose.

Drying and Post-vulcanization

The mattress cores are now thoroughly dried for 8 hours at 185°F to give the round and open cellular structure It's final form.

Finishing & Testing

Each individual core is visually inspected and firmness tested in 10 places. The resulting ILD (Indentation Load Deflection) rating, production date and serial number are applied to the finished core. Once the core has been approved for consistent firmness and quality it is cut or sliced to size and ready for end use.



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