

# **ELECTRICITY-FREE COOLING OPTIMIZES ENERGY UTILIZATION IN GLOVES MANUFACTURING**



## **Gloves-making from Rubber Latex**

Gloves serve as barriers of protection from infectious organisms and external agents, hence finding application across several fields - medical, manufacturing and packaging, etc. Natural rubber latex, due to its elasticity and tensile strength is the most preferred raw material for gloves manufacturing.

Latex collected from rubber trees is mixed with certain chemical compounds to stretch and stabilize the material. Liquid pigments are added to the latex to render the preferred colour to the gloves. The next step is vulcanizing the latex - which is crucial for offering resilience and elasticity to it. The latex is maintained hot so that it can be poured onto clean ceramic hand moulds, giving the gloves their shape. The latex-coated hand moulds are now dipped into a water bath. Cooling water in the bath rejects the heat from the gloves and cools them, making them firm and their removal from the moulds easy.

## **Optimising energy use with unique solutions**

When a popular glove manufacturer was seeking energy-efficient cooling system to cool the vulcanized latex for gloves, Thermax team studied the processes and utilities of its manufacturing unit. Zeroing upon the plant's hot thermic fluid heater as the potential heat source, Thermax commissioned three double-effect steam driven vapour absorption chillers at the unit. Hot Thermic Fluid from the Thermic Fluid Heater generates steam in the Thermic

Fluid Steam Generator. The chillers of combined capacity -150 TR are driven by steam at 8 bar from the generator.

By utilising on-site steam to drive the chillers, the cooling process has complete independence from the grid, which translates to negligible electricity usage and reduced emissions.

## **Benefits**

- Annual savings of eight lakhs units of electricity equivalent to lighting 800 new homes annually
- Annual reduction of 660 tons of Carbon emissions equivalent to planting 38,500 trees in a year or taking 138 cars off the road annually.
- Zero Ozone Depletion Potential with water as refrigerant
- Grid-Independence
- Improved Reliability
- Reduced Operational Costs
- Low Maintenance Costs

Rising costs, associated carbon emissions and poor reliability of electricity make it necessary for industries to invest in electricity-free solutions. Grid-independent, sustainable cooling solutions from Thermax eliminate the complications of cooling with electricity. Combined with our expertise and commitment towards the environment, our absorption cooling systems enable maximum utilisation of available resources and go easy on the environment with emissions reduction and energy savings. Besides increasing efficiency and reliability, the three chillers at the gloves making plant have positively transformed the energy utilisation trend and environmental impact of gloves-making.