STALAM
Radio Frequency Equipment

RADIO FREQUENCY DRYERS FOR NATURAL LATEX AND SYNTHETIC POLYMER FOAMS

Fast and cost-efficient drying of mattresses, pillows, sheets and more

A very successful and well established application of STALAM's RF technology is the drying of foamed natural and synthetic polymers (mainly natural latex, also blended in various proportions with SBR, and hydrophilic polyurethane). Since the mid-eighties, STALAM has supplied a large number of its purposely designed RF dryers to the major European and Asian producers of latex foam mattresses, pillows and sheets. More recently, STALAM has developed specific solutions for the drying of highly hydrophilic polyurethane foam after wet casting for health-care and medical uses.

Radio Frequency drying does not rely on heat transmission, so even thick, shaped and dense items (casted blocks, mattress cores, anatomic pillows, etc.) dry quickly with no surface overheating or yellowing effects; it is selective towards water, so even that contained in the core absorbs the RF energy instantly and migrates quickly towards the surface, leaving no wets spots anywhere in the product; the energy delivered to (absorbed by) the product can be adjusted as required, thus enabling to control accurately both the evaporation rate and the residual moisture content.

STALAM machines can accomplish the entire drying process or work in conjunction with existing tunnel or cabinet type hot air dryers (ie. for partial drying) to increase the capacity (speed) of the production line, maximise the energy efficiency and, especially, improve the quality of the end product.

"RF/A 105 kW" model dryer with 2.2 m wide conveyor belt for natural latex mattress cores and pillows.

PRODUCTION CAPACITY

OUTPUT RF POWER	PRODUCTION CAPACITY (KG/H of dry product)		
Natural latex / SBR foam (moisture content: 30-40%)	200-300	350-525	550-800
Polyurethane foam (moisture content: 60-80%)	120-180	200-300	320-460
No. of RF modules *	1	2	3

* 60-105 kW output power

BENEFITS

- Fast and uniform drying: about 20 minutes are sufficient to dry even thick and dense mattress cores below 1% residual moisture content, without any wet spots; also shaped products like pillows and anatomic seats dry perfectly uniformly in thicker parts as in thinner portions
- No yellowing of the product surface, due to low temperature in the drying tunnel (RF heats the product core, not its external surface)
- Short conditioning time, so the product can be packaged for shipment quickly after drying without any risk of moulding on the way to customers
- Significant reduction of drying equipment footprint, thanks to the short process time
- Energy-efficient in-line process, reduced drying and product handling costs
- Reduced carbon foot-print, being Radio Frequency an electro-thermal technology
- Little noise, no dust, no fumes, no heat dispersion
- Istantaneous operation (no pre-heating)

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