

***SPECIALIST EQUIPMENT
FOR
GLASS FIBRE DRYING***



Strayfield
Ltd

**TESSA ROAD, READING, BERKS,
ENGLAND**

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UNLOCKING THE MOISTURE BARRIER

Drying of glass fibre 'cakes' in hot air recirculating ovens has always suffered from one major drawback — time. Outer layers of the cake dry first and form an excellent insulation barrier, thereby preventing the thermal energy quickly reaching the inner fibres, hence long drying times.

Improved bushing performances resulting in increased cake weights multiplies the problem and drying times get even longer.

Longer drying times increase the chance of the chemical properties of the size being destroyed.

Uneven drying through the cake leads to processing problems and product quality variations.

High frequency drying offers an immediate solution to these problems. With this form of drying the H.F. energy generated reaches right into the centre of the cake. The water contained in the cake readily absorbs H.F. energy, thus there is a uniform temperature increase throughout the cake. The quantity of water determines the amount of power consumed for a given power density. Too great a power density for a given moisture content can cause steam pockets to form within the cake, resulting in possible implosions. Controlled energy input eliminates this problem. This energy input can be controlled by the height of the electrodes and the voltage gradient along their length, enabling the largest cakes to be satisfactorily dried.

In a typical 'Strayfield' installation, cakes enter the dryer, and are subject to limited H.F. energy (Fig. 1). The energy increases as the cake dries and since glass fibre itself absorbs limited power, the heat is generated in the water. An equilibrium point is reached where the thermal energy required to evaporate the water equals the H.F. energy the cake is able to absorb (Fig. 2). As the cake dries out, so the final temperature becomes more influenced by the dielectric value of the glass and chemical size.

It is this careful balance and grading of energy levels where 'Strayfield' have the experience. Together with a new type of generator and electrode system, 'Strayfield' have become leaders in building H.F. drying equipment for the Glass Fibre Industry.

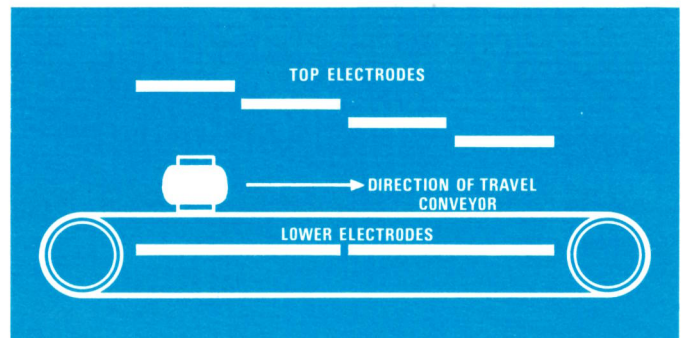


Fig 1

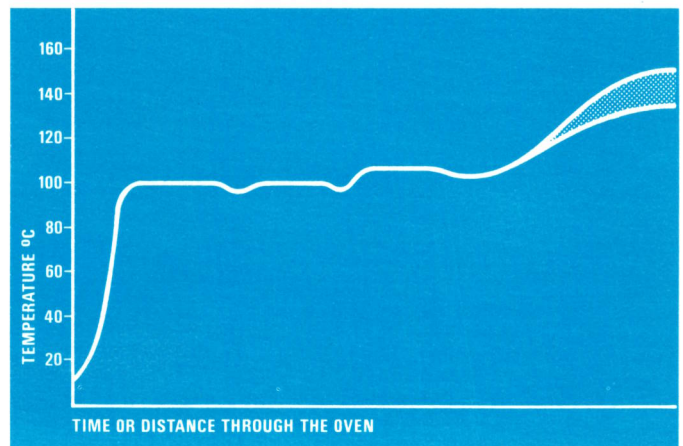


Fig 2

Further uses of dielectric heating in the glass fibre field are:—

1. Drying of chopped strands either in a wet or damp state.
2. Drying of rovings products.
3. Drying and fixing latex covering on glass fibres for rubber reinforcement applications.
4. Pre-heating and drying of chopped strand mat products, used in conjunction with conventional thermal ovens.
5. Laboratory equipments for quickly drying Quality Control Samples.

NOTE THESE SIGNIFICANT ADVANTAGES OF THE STRAYFIELD ELECTRONIC OVEN SYSTEM



Cakes of up to 15 kg (33lbs) dried without implosion



Different cake weights and chemical sizes dried at the same time **without discolouration.**



Drying cycles reduced from 10– 30 hours to 25– 90 minutes



Operating costs cut by up to 50%



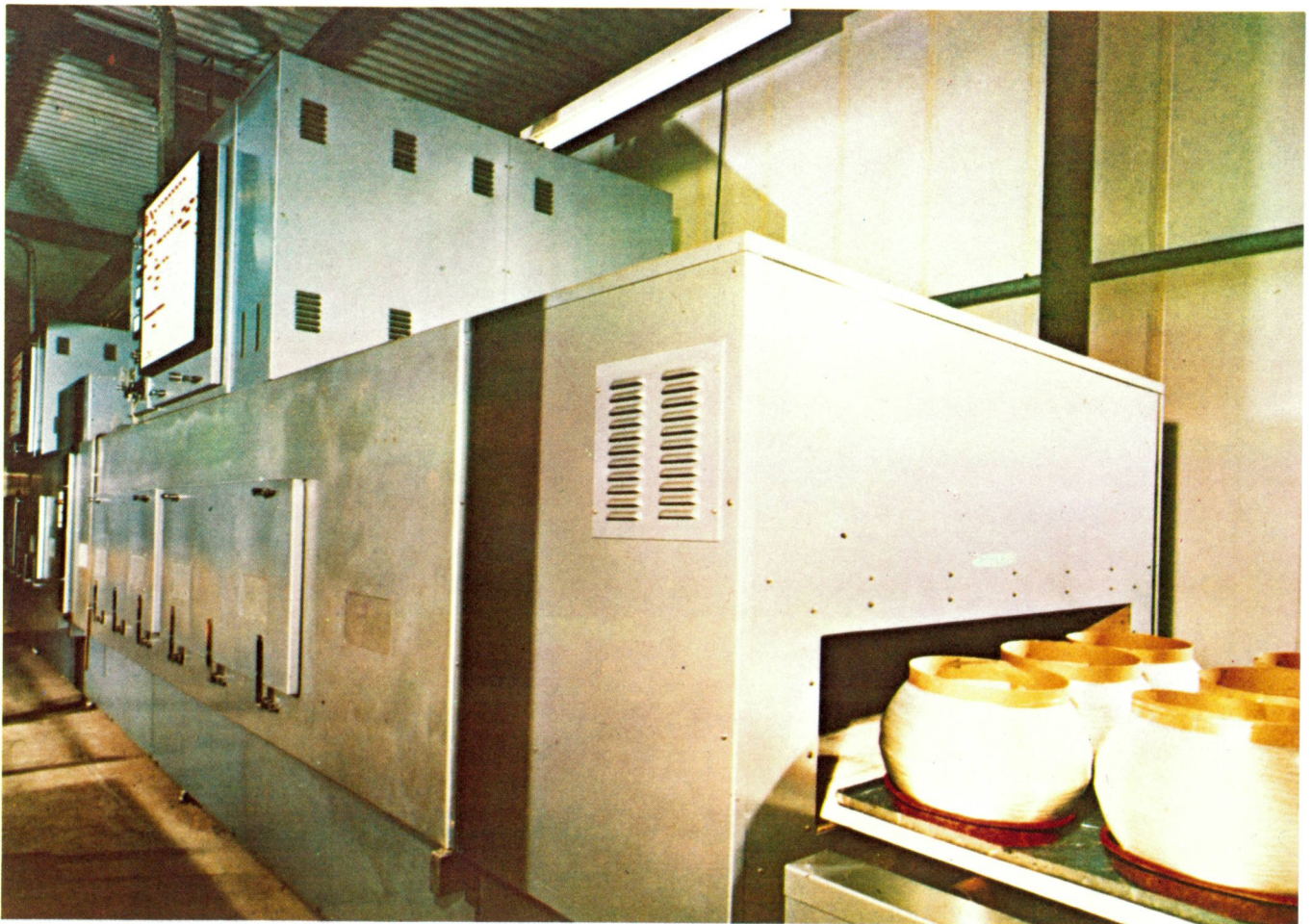
Production doubled in half the floor space



Dried cakes of any specification are to correct final moisture level



Short warm-up time. Ovens are ready to start the drying process at FULL power 5 to 10 seconds after switch-on.



THE MOST TECHNICALLY ADVANCED GLASS FIBRE DRYING EQUIPMENT IN USE TODAY



INSTALLATIONS SUPPLIED WITH GUARANTEED PERFORMANCE

Three standard generators are offered for glass fibre drying, these being 50kw., 75kw., and 100kw. Most installations have two units mounted in series, giving throughputs ranging from 850 kgs/hr for a twin 50kw unit up to 1700 kgs/hr for a twin 100kw unit, based on a cake weight of 10–20 kgs at a moisture content of 10–12%.

In all cases, generators can be 'handed' to bring controls and illuminated mimic circuit diagrams out to one side.

All 'STRAYFIELD' ovens are engineered for continuous operation in high ambient temperatures and under the most arduous industrial conditions. Generators are completely sealed, with built-in water/air heat exchangers, and all components are operated well within their manufacturers' ratings.

The oven sections will accept Terylene/Dacron bands of up to 3 metres in width. Stainless steel lead screws are fitted for electrode height adjustment linked with **THREE PRECISION DIGITAL TYPE CONTROLS**, allowing the voltage gradient to be varied at selected points within the ovens, which are finished with a ceramic based paint to prevent corrosion.

Easy access to the oven and electrode system compartments is by wide doors, which are completely interlocked with the safety system.



Feed end of cake drying unit. Another 50 x 50 kw series equipment can be seen in the background

AGENT:

We are indebted to Fibreglass Limited, St. Helens, Lancs., for permission to publish the photographs in this brochure.