

# World Leader in Dielectric Heating

## Process Advantages

- Reduces Checking – uneven stresses in the product are eliminated as a result of evening the product moisture profile
- Product Colour Control – in the RF process, the colour and moisture are separately controlled
- Energy Savings – unlike conventional equipment the efficiency of the high frequency oven is only marginally reduced at lower moisture levels
- Avoids Pollution – there are no by-products of combustion
- Increased Production – throughput of a typical oven line can be increased by as much as 50% on certain products
- Floor Space Savings – efficient heat transfer results in faster product transfer and reduced oven length
- Rapid and Even Heating – of doughs
- Improve Efficiency – of conventional baking lines
- Automatically Compensates – for variations in product moisture
- Automatically Profiles – moisture content
- Reduces flashing off of volatile flavourings - allowing reduced quantities to be used.
- Eliminates Centre Bone



Single Stack



Mono Layer

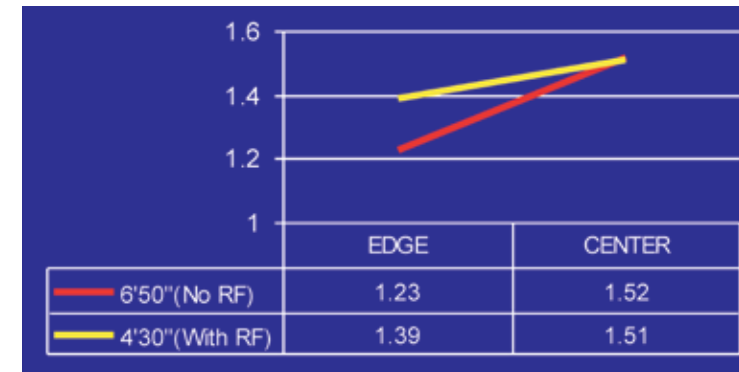
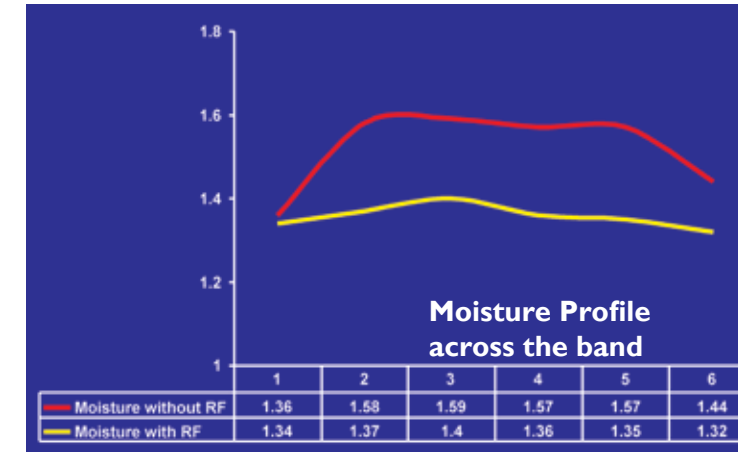


Product Bed

## The benefits of using RF Post Baking

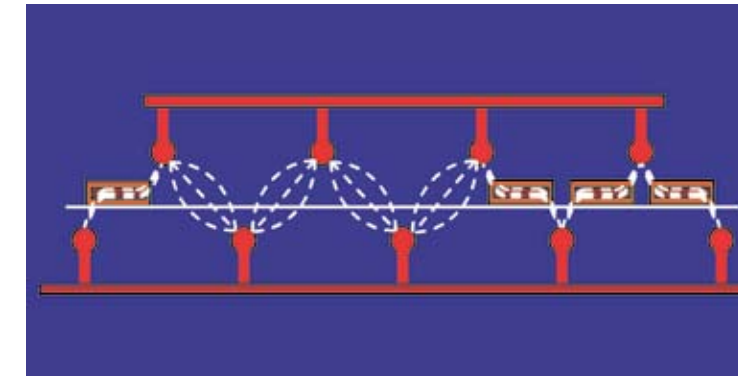
### Accurate Moisture Control

This Graph shows how RF Post-Baking can improve the moisture profile across the band. Without RF energy, product at the edges of the oven band becomes overdried in order to ensure that product in the middle of the band is within process tolerance. With RF drying, significant improvements to the moisture profile are achieved.



### Proven Experience

With over 500 installations in the food industry alone since the Company was founded in the 1960's, and several thousands of installations in many other industries, Strayfield has refined and optimised the oven electrode system and generator frequency (27MHz) for production efficiency, reliability and long service life. For Monolayer products, a special Staggered Through-field (rod) system is used.



Improvements to the moisture profile are not only made from piece to piece, but also within individual pieces. This graph shows how the moisture variation from ring to core is improved because unlike impinged conventional heat energy (hot air), the Radio Frequency energy acts directly on the moisture itself. Accurate Moisture profiling is only possible with RF energy.

The photograph (left) shows one of the latest stainless-steel machines type SSO50B, recently installed at Fox's Biscuits, Batley, UK plant. This machine is one of 16 Strayfield Dryers within the Northern Foods Group and is fitted with the latest Allen Bradley PLC system and Operator Display panel. This Dryer replaces one of the original machines installed over 30 years ago.



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**Radio Frequency Processing in the Food Industry**

# Radio Frequency Drying Systems

A reputation for excellence in the manufacturing industry has been achieved following many years of experience in designing and producing first class products. Through continuous commitment, dedication and attention to detail Strayfield has justly earned this accolade and is generally acknowledged as the world leader in dielectric heating.

Strayfield's product range for high frequency heating processes encompasses equipment for the food, textile, paper converting, glass fibre and woodworking industries.

With more than 5000 installations, our company has the technical ability and experience to provide a solution for virtually any application problem within our field. Through our world wide network of sister companies and agents we also provide excellent after sales support to our customers.

## High Frequency Drying

Water is so receptive to the effect of dielectric heating because of its high dielectric loss factor. This makes the process eminently suitable for post baking, drying, moisture removal and pre-heating applications. Energy is transferred from the heat source directly into the product.

The RF energy will preferentially couple into the water rather than the other ingredients in the product and is therefore able to provide a more efficient means of moisture removal. It is particularly effective in post baking applications.

The process is simple and precise.

Today, high frequency drying is common place in the food industry with appropriate and proven processes available for a wide range of applications such as:

- Post bake drying and moisture control
- Preheating of dough and cake mixes
- Rapid heating of tube fed products for both pre-cook and pasteurisation/sterilisation requirements



## Design Features

- Sanitized ovens produced from stainless steel
- Stainless steel fabrication of both generator and conveyor assembly available as an option
- Fully screened generator/oven available to comply with current emission regulations (including EN55011 and FCC title 47 part 18)

- Complies with health and safety requirements (including OSH29CFR 1910.97, ANSI/IEEE C95.1-1992, and UK NRPB guidelines)

- Applicator systems available to accommodate the Processing of monolayer and beds of products
- Integrated cooling system

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- Various conveyor bands to suit a range of processes which meet hygiene standards including F.D.A.
- PLC control with fault diagnostics
- Integrated systems for centralized overall plant control
- High speed arc detection unit

## Further Optional Features

- Belt washer system to avoid flavour contamination
- Automatic product levelling device for bed height control
- Conveyor systems to accommodate retractable nosers and dump conveyors

