



Cutting Machines

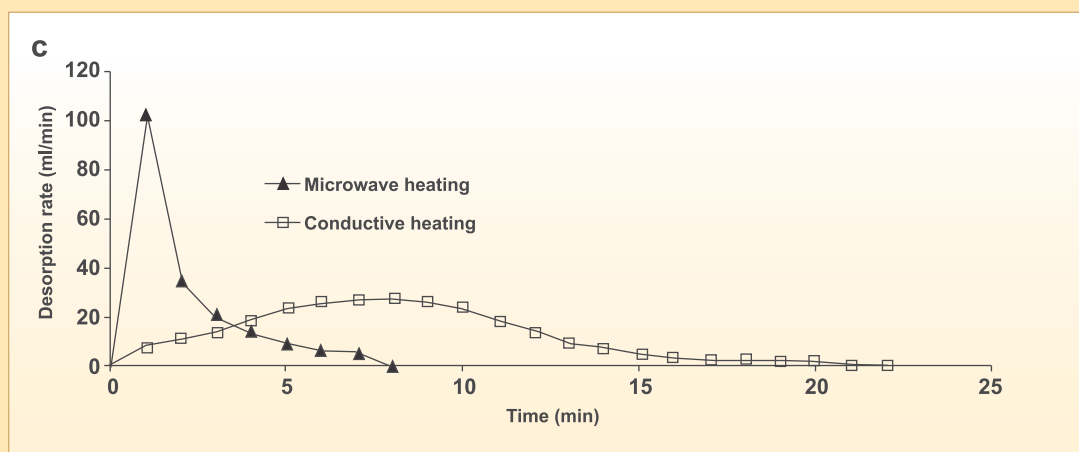
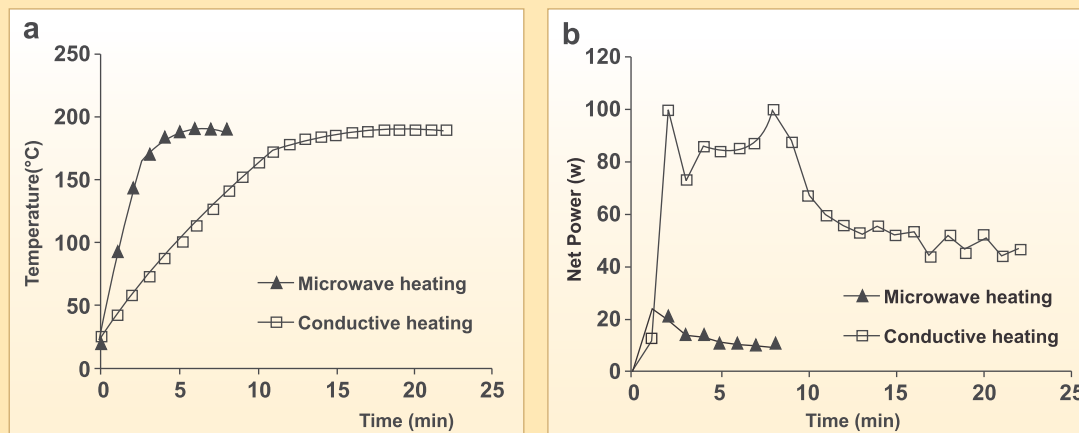
Cutting Machines are used to cut the rubber profile to the desired lengths. The cutting operation can happen either on the coiled rubber profile on a spool or online in the production process. Enerzi manufactures three types of Cutting Machines to suit customer requirements. The three variants are Manual, Semi-Automatic and Fully Automatic Cutting Machines. These machines use state of the art control features with Precise Pneumatic Controls for cutting the rubber profiles accurately.



Coiling / Winding Machines

Coiling or Winding Machines are used for stocking rubber profiles produced from the vulcanization line to full lengths of 25, 50 or 100 meters. The Coiling Machines are designed to function reliably in synchronization with the rest of the vulcanization line so that the coiling process can take place smoothly. Enerzi manufactures and supplies a variety of Coiling Machines of desired rubber profile size and capacity of the spool to meet specific customer requirements.

Comparison between Conductive (conventional) Heating and Microwave Heating:



Our Clientele For Rubber Profile Extrusion Lines

- Cooper Standard Automotive Inc., Uttar Pradesh
- Gold Seal Saargummi India Pvt. Ltd., Daman
- Anand Nishikawa Company Ltd. (ANCO), Punjab
- R. K. Profiles Pvt. Ltd., Haryana
- Nova Technologies, Chandigarh
- S. R. Beadings Ltd., Chanderlok, New Delhi
- ALP Overseas Pvt. Ltd., Uttarakhand
- Ameer Rubber Industries Pvt. Ltd., Vapi, Gujarat
- Jayashree Polymers Pvt. Ltd., Maharashtra

On special request, we can design and develop a variety of other associated processing equipments like ;

- Online Drilling Machine
- Plasma Cleaning System
- Flocking Machine
- Rubber Calender
- Hot-Press for Rubber Molding and many more.

“ we understand the loss of downtime and hence on-site support is our primary focus ”



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RUBBER PROFILE EXTRUSION LINES

Everything that you need to be a rubber profile manufacturer, under one roof.

RUBBER PROFILE EXTRUSION LINES

Vulcanization is a chemical process for converting rubber or related polymers into a more durable material through the addition of sulfur or other equivalent "curatives". These additives modify the structure of the polymer by forming crosslinks (bridges) between individual polymer chains.

Uncured natural rubber is sticky, deforms easily when warm and brittle when cold; hence is very poor in elasticity. Crosslinking introduced by vulcanization, prevents the polymer chains from moving independently. As a result, under the application of stress, the vulcanized rubber deforms, but upon release of the stress, the material reverts back to its original shape. Thus vulcanized rubber materials are less sticky and have superior mechanical properties

Traditionally a variety of methods have been in use for the vulcanization of rubber and related polymers. These include fluidized beds (glass bead ovens), hot air ovens, steam curing ovens, infrared ovens and very recently Microwave rubber vulcanization ovens. Among these methods, Microwave rubber vulcanization oven has been a vastly popular choice, especially for "profiles & sealings". The rapid and bulk heating property of microwave radiation makes microwave heating an ideal choice for curing of rubber and rubber like materials. Enerzi offers a range of continuous microwave rubber vulcanization lines (with all supporting subsystems and auxiliary machines) for a variety of rubber profiles made of EPDM, Silicone rubber and other types of rubber.

Salient Features

- Throughput ranging from 50 to 1000 kgs/hour
- Typical cross sections of 200 to 300mm (W) and 150 to 250mm (H)
- Hot air circulation of 100 to 1000 cfm at 200 to 300 °C & range of process temperature from 100 to 400 °C
- Hot air temperature monitoring
- Installed microwave power of 1.45 kW to 29 kW
- Step-less power control using micro-controller module
- Digital display of power and temperature
- Conveying system with speed controls from 2 to 50 m/min with highly integrated interlocks and a remote control panel

Advantages

Microwave technology offers many advantages as compared to traditional processes :

- Direct heating of rubber mass and not of the oven volume by selective heating
- Faster and more uniform heating
- Higher performance with lesser energy consumption
- Better quality and consistency of the finished product
- Less energy leakage to the environment
- Less space for the installation with easier maintenance
- Electronic operation and control with automation
- Superior and comfortable working environment
- Cleaner & greener technology



Rubber Profile Extruders

Being a complete system solution provider for a variety of rubber extruders (screw dia ranging from 45mm to 150mm), Enerzi delivers compact & reliable extruders as well as machines equipped with the latest developments in control systems and designs. Our extruders provide high screw torques just as machines with variable screw speed ranges. We ensure a wide selection range without compromising quality. The extruders possess the latest extrusion unit design and control systems for all machine parameters. Excellent design of systems to achieve the best dimensional stability and high productivity makes our products unique and superior.



Infrared Shock Ovens

In this equipment, the radiator temperatures are more than 1850 °C and with such high temperatures, the new Enerzi Infrared Shock Tunnel is highly efficient for the pre-vulcanization of profiles and hoses. Arranged between the rubber extruder and the microwave vulcanization oven, the high power infrared radiation pre-cures the surface of the rubber products. This results in a better dimensional stability with excellent surface finish. This process is ideally suited for sponge profiles, but is equally useful in solid profiles. Typically these systems are about 1 meter long and possess a heating capacity of about 24 - 30 kW.



Microwave Vulcanization Ovens

Microwave radiation penetrates the rubber and heats the material from core to surface simultaneously and hence microwave curing is very fast. Microwave heating has proved suitable equally for sponge, solid and co-extruded profiles. These ovens are available in 4 different capacities namely 4, 6, 8 and 10 station ovens, where the stations indicate no. of microwave generators each having 1.45 kW. Our microwave generators are designed with state-of-the-art features and are well proven in the rubber industry since 2005. These ovens are designed with utmost care to minimize microwave leakage.



Hot Air Tunnels

Hot air tunnels are especially used for post curing of rubber profiles, insulation hoses and other special rubber products. Hot air tunnels unlike their counterparts i.e. Microwave Ovens or Shock ovens do not have any high frequency heating. These ovens have a heated forced air circulation with the help of a blower. These tunnels are similar in design to the Microwave Ovens and serve the purpose of final curing / post curing of rubber profiles after initial curing in Microwave Oven and IR Oven.



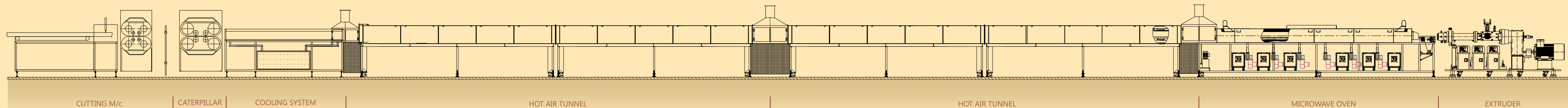
Cooling Tunnels

Cooling tunnels are primarily used in the commercial processing of rubber. Cooling tunnels use a conveyor system of rollers to pull the product through the refrigerated water tunnel. There are continuous and discontinuous cooling systems, depending on requirements. Continuous cooling involves moving the product until the required temperature is achieved, whereas in discontinuous cooling, the tunnel provides different cooling down periods through pallet and tray forms. Chilled DM water is usually used for cooling rubber profiles and the system length varies from 3 meters to 10 meters depending on the throughput of the production line.



Caterpillars

Caterpillars form an essential subsystem in the scheme of the complete line in rubber profile extrusion technology. This unit helps in retaining the tension / pull of rubber profile along the line. Depending on the speed of production and profile sizes, the Caterpillars are normally designed from 36" (91.4 cm) to 100" (254 cm) belt length. In some units, the length can be higher. Enerzi specializes in providing unique designs of Caterpillars to suit a variety of rubber profile extrusion lines.



CUTTING M/c

CATERPILLAR

COOLING SYSTEM

HOT AIR TUNNEL

HOT AIR TUNNEL

MICROWAVE OVEN

EXTRUDER