



NORTH CAROLINA DEPARTMENT OF LABOR

No. 30-1

OSH DIVISION

Date: 10/2009

OSHNC INDUSTRIAL DATA REPORT

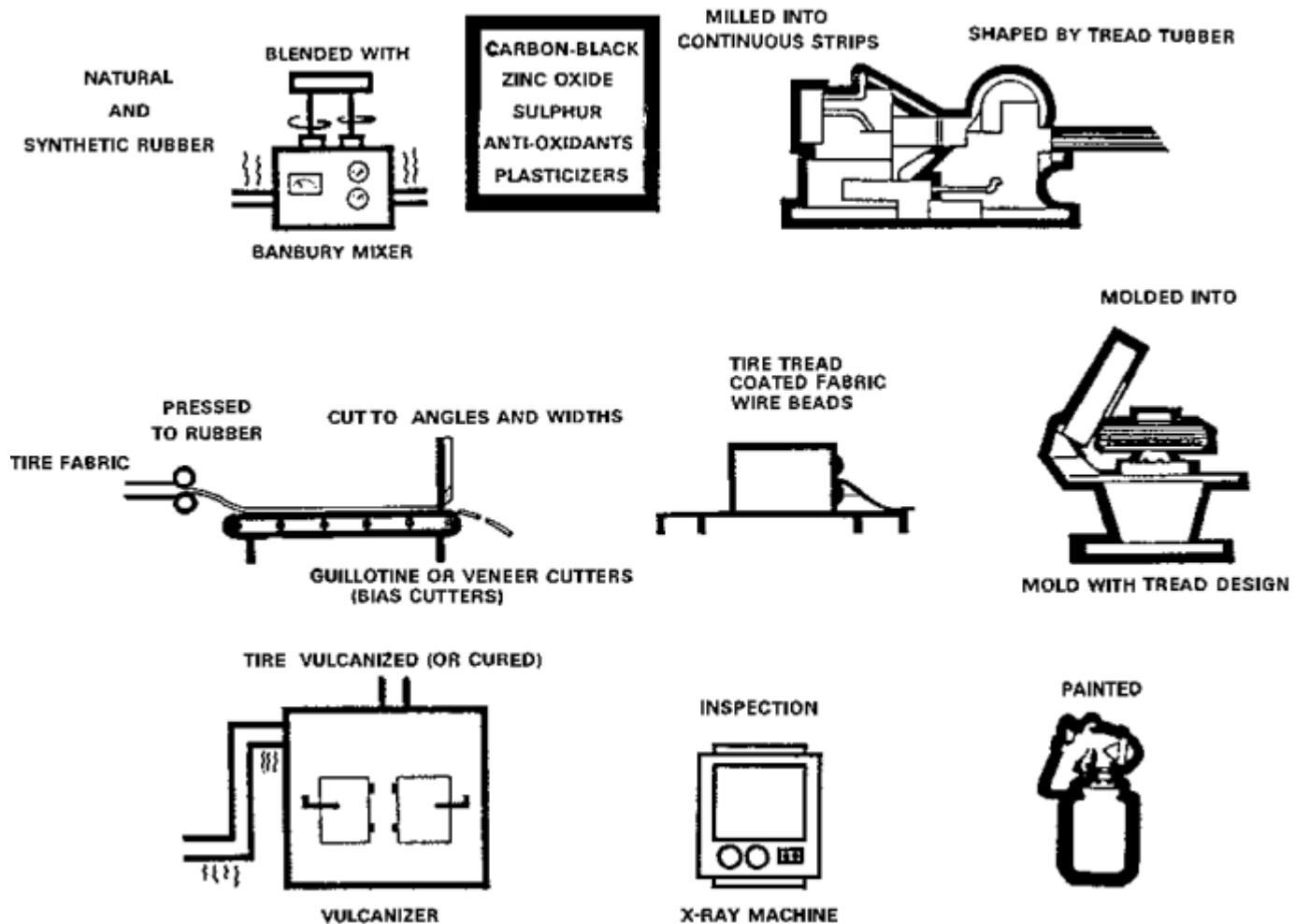
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Industry: Rubber Products

Sub-Group: Tires and Inner Tubes

SIC: 3011NAICS: 326211

**PROCESS DESCRIPTION:** Rubber is blended with other raw materials to improve wearing properties and give better resistance to heat. Blending materials include carbon-black, zinc oxide, sulphur, anti-oxidants and plasticizers. This mixture is milled into smooth continuous strips which are formed into shapes of specified weight, width and profile to be used for the tire tread. The tire fabric forms the piles of the body of the tire. Fabrics include rayon, nylon and fiberglass coated with a latex resin solution. Rubber is pressed to the fabrics in layers and then cut to prescribed angles and widths. Wire beads, the sealing edge which holds the tire to the wheel is formed by strands of wire bonded and impregnated with rubber. The tire tread, coated fabric and wire beads are wrapped around a building form and spliced to form the tire, then vulcanized or cured, either by heat treatment or by cold sulfuryl chloride solution.

**PROCESS FLOW:**

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## Hazards Analysis

<b>Major Hazards</b>			<b>Other Hazards</b>		
<b>Location</b>	<b>Item</b>	<b>Hazard</b>	<b>Location</b>	<b>Item</b>	<b>Hazard</b>
Throughout	Mechanical power transmission apparatus	Amputations and crushed limbs	Throughout	Housekeeping	Slips, trips and falls
Tire fabric processing	Calendar	Crushed limbs	Area surrounding facility	Carbon black	Housekeeping issues from dust, illness from dust and odor
Molding area	Molds	Strains and sprains from lifting, foot injuries	Molding and blending	Organic vapors	Inhalation of vapors
Throughout	Flammable liquids, high pressure steam boilers, overheated equipment	Burns			
Blending area	Materials and chemicals	Skin irritations, burns, inhalation, overexposure			
Inspection area	X-Ray machines	Ionizing radiation			

## Key OSHNC Standards

<b>Reference</b>	<b>29 CFR 1910 — General Industry Standards</b>
Subpart D	Walking and working surfaces
Subpart I	Personal protective equipment
Subpart O	Machinery and machine guarding
Subpart S	Electrical
1910.94	Ventilation
1910.147	Control of hazardous energy (lockout/tagout)
1910.176	Material storage
1910.179	Cranes

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1910.1000	Air contaminants				
1910.1096	Ionizing radiation				
1910.1200	Hazard Communication				
<b>Inspection Analysis</b>					
<p>The inspection should begin in the receiving warehouse making sure rubber and other raw materials are stacked securely and that mechanical handling equipment is in proper condition. Employees working in blending areas must be checked for personal protective equipment (gloves, aprons and face shields). Power-transmission apparatus must be guarded throughout plant. Points of operations such as calendars, milling machines and bias cutter must also be guarded. Employees in molding areas must be checked for safety footwear and safe working practices. Cranes used to carry molds must be inspected monthly. Ventilation must be adequate throughout, especially in blending and paint spray booth. Employees working with X-ray machines must wear radiation film badges at all times. Electrical connections and fire prevention equipment must be checked throughout plant.</p>					
<p><b>Other Pertinent Comments:</b></p>					