



# **NORTH CAROLINA DEPARTMENT OF LABOR**

No. **30-3**

## **OSH DIVISION**

Date: **10/2009**

## **OSHNC INDUSTRIAL DATA REPORT**

Pages: **3**

Industry: **Rubber Products**

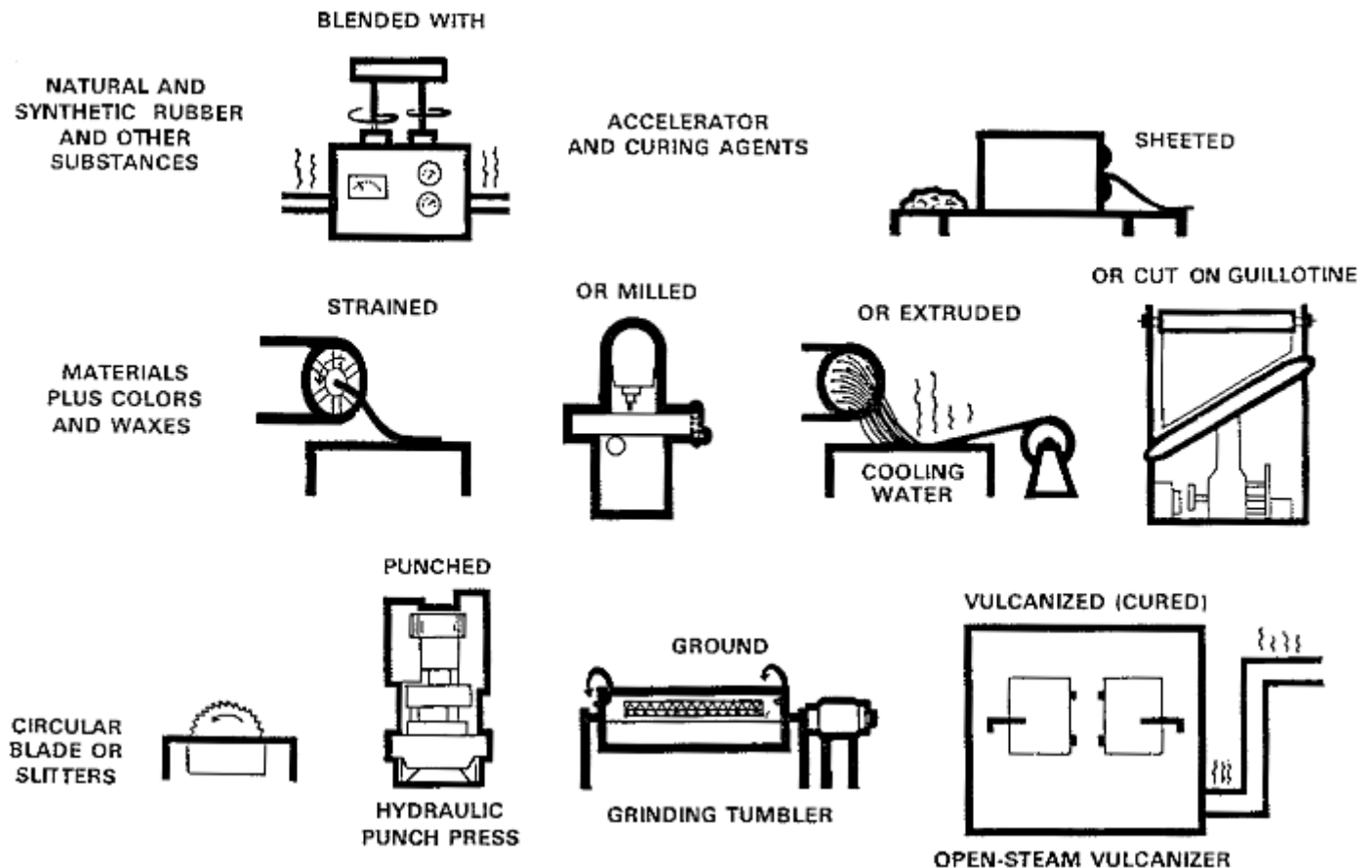
Sub-Group: **Fabricated Rubber Products**


SIC: **3069**

NAICS: **313320, 314911, 315299, 315999, 326192, 326299, 339113, 339920 and 339932**

**PROCESS DESCRIPTION:** Various ingredients are weighed, batched and mixed. These ingredients include natural and synthetic rubber polymers, carbon-black, rubber cement, calcium carbonate, magnesium carbonate, sulphur chloride, toluol, naphtha, talc, dry color and wax. Accelerator and curing agents are added and at times the material strained. Materials are then milled, frequently with colors and waxes. Extruders are also used to produce shapes that are die cut and molded. These items are often ground to remove excess rubber particles. A curing process by open steam vulcanization follows as silicones are further cured in high-temperature electric ovens. Metal inserts may be plated for insertion in some products.


### **PROCESS FLOW:**



|  |   |   |                      |  |   |
|--|---|---|----------------------|--|---|
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|  | <b>OSHNC INDUSTRIAL DATA REPORT</b>   |   | <b>Pages: 3</b>      |  |   |
| <b>Hazards Analysis</b>  |   |   |                      |  |   |
| <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<br><br>Strainer, extruder, slitters, presses, grinding tumblers | Amputations and crushed limbs<br><br>Amputation and crushed limbs | Throughout           | Housekeeping<br><br>Various solvents<br><br>Organic vapors | Slips, trips and falls<br><br>Fire, explosion<br><br>Inhalation, overexposure |
| Sheeting area  | Calendar  | Crushed fingers and hands   |                      |  |   |
| Blending area  | Materials and chemicals   | Skin and eye irritations and burns, vapor inhalation              |                      |  |   |
| <b>Key OSHNC Standards</b>   |   |   |                      |  |   |
| <b>Reference</b>   | <b>29 CFR 1910 — General Industry Standards</b>   |   |                      |  |   |
| Subpart D  | Walking and working surfaces  |   |                      |  |   |
| Subpart E  | Means of Egress   |   |                      |  |   |
| Subpart I  | Personal protective equipment   |   |                      |  |   |
| Subpart O  | Machinery and machine guarding  |   |                      |  |   |
| Subpart S  | Electrical  |   |                      |  |   |
| 1910.94  | Ventilation   |   |                      |  |   |
| 1910.146   | Permit required confined space entry  |   |                      |  |   |
| 1910.147   | Control of hazardous energy (lock-out/tag-out)  |   |                      |  |   |
| 1910.1000  | Air contaminants  |   |                      |  |   |
| 1910.1200  | Hazard Communication  |   |                      |  |   |

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| <b>Inspection Analysis</b>  |   |                      |
| <p>The inspection should begin in the receiving warehouse to be sure that raw materials are stored properly and that aisles are clear. In the blending area, employees must be checked for use of personal protective equipment and flammable liquids must be kept covered and grounded. Electrical equipment and connections must be checked for hazardous location requirements. Calenders in the sheeting department with in-running nip points must be guarded. Power transmission apparatus must be guarded and fire protection must be checked throughout. Extruders and strainers involve hazards from revolving screws, cutoff knives, pinch points and hot pipes which must be guarded. In the punch press department, flywheels, belt drives, point of operation and written records on maintenance must be checked. Adequate fire protection must be available throughout. Revolving grinding tumblers must be checked for a point of operation guard. In the vulcanization area, moving parts, ventilation and personal protective equipment must be checked.</p> |   |                      |
| <p><b>Other Pertinent Comments:</b> IDR 30-2, Reclaimed Rubber, is closely related.</p>   |   |                      |

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