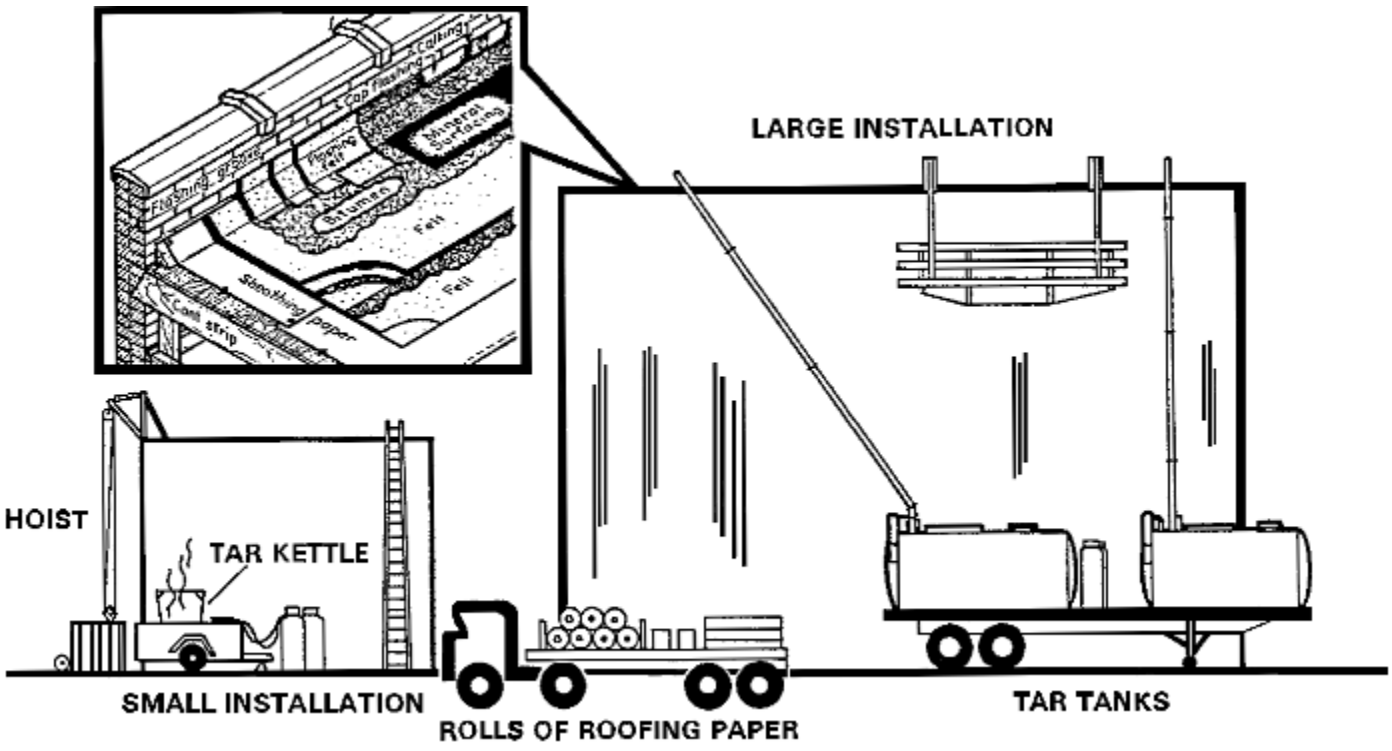
	NORTH CAROLINA DEPARTMENT OF LABOR	**No. 17-6**
	OSH DIVISION	**Date: 03/2011**
	OSHNC INDUSTRIAL DATA REPORT	**Pages: 3**

Industry: **Construction**	Sub-Group: **Roofing and Sheet Metal Contractors**
SIC: **1761**	NAICS: **238160, 238170 and 238390**

PROCESS DESCRIPTION: Roofing materials are transported to job site by vendor. The materials include composition shingles, wood shingles, asphalt, pitch, roofing paper, insulation, nails, metal flashing material and metal siding. Built up roofing requires applying layers of roofing paper (heavy felt) insulation, hot asphalt or pitch and a final layer of gravel. Usually one layer of insulation (1-2 inch panel board type) is used. This insulation is applied over a layer of heavy felt roofing paper. After the initial layers of paper and insulation several layers of other paper and hot asphalt or pitch are applied with mops. Sheet metal is used for flashings, gravel stops and parapet wall coverings. Siding may be installed with lag screws. On wood, tile, terra cotta or composition-type shingled roofs, a layer of felt paper is applied usually to a wood roofing surface and the shingles are aligned and applied by nails. Sheet metal flashings are applied at wall angles, intersecting roof lines and chimneys and sealed with tar-type compounds.

PROCESS FLOW:



Hazards Analysis

Major Hazards			Other Hazards		
Location	**Item**	**Hazard**	**Location**	**Item**	**Hazard**
Site	Material handling and storage	Manual handling causing back injuries and falling materials striking employees	Site	Walking and working areas	Broken limbs, head injuries and bruises from falls, slips and trips
	Protection from falls	Broken limbs, head injuries, death		LP-gas storage	Burns and impact injuries from explosions
	Hot asphalt	Burns and fumes		Rigging equipment	Impact injuries and falls
	Protection from coal tar pitch	Toxic fumes		Tools	Punctures, lacerations
	Motor vehicle use	Falls and impact injuries		Tools (power) Head protection	Electrocution and hand and impact injuries
				Ladders	Impact injuries from falls
				Material hoists	Impact injuries from falling loads

Key OSHNC Standards

Reference	29 CFR 1926 — Construction Industry Standards
Subpart C and 13 NCAC 7F.0202	General Safety and Health Provisions - federal and state-specific requirements (for 1926.28)
Subpart D and 13 NCAC 7F.0203	Occupational Health and Environmental Controls - federal and state-specific requirements (for 1926.54)
Subpart E and 13 NCAC 7F.0204	Personal Protective and Lifesaving Equipment - federal and state-specific requirements (for 1926.104)
Subpart F	Fire Protection and Prevention
Subpart H	Materials Handling, Storage, Use, and Disposal
Subpart I	Tools - Hand and Power
Subpart K	Electrical

Subpart L	Scaffolds
Subpart M	Fall Protection
Subpart N	Helicopters, Hoists, Elevators and Conveyors
Subpart O	Motor Vehicles, Mechanized Equipment, and Marine Operations
Subpart CC	Cranes and Derricks
1926.556	Aerial Lifts

Inspection Analysis

Inspection should begin at the roof area. This will give the inspector the opportunity to observe the operation where most employees work and also it will enable the inspector to observe the most serious hazards. By observing the roof areas first the inspector will get a more accurate picture of the company safety program and what has been done for employee protection. After inspection of roof and its access, the kettle or pot area should come next. Check lines of LP gas tank, valves, etc. closely. Adequate fire protection should be immediately available at tar kettle as well as on roof. Also the inspector can usually get another picture of openings on roof from this area. Personal protective equipment is usually necessary at the kettle area. The last stage of the inspection should include the material storage yard, trailers and buildings. Equipment such as dump trucks, tractors, conveyors, etc. should be included. There may be one or two employees cutting sheet metal, installing flashings and siding at another part of the job site. Be sure to ascertain from employee interviews whether any other people are at the site.

Other Pertinent Comments: Usually a high fire risk is present during a roofing operation. Extra observation is necessary to help eliminate fire hazards. Also potential falls are present for employees. Falls and burns are major sources of accidents during roofing operations. Employees are also subjected to many striking hazards from materials. During high wind conditions and from improper storage of materials on the roof the employees may be exposed to extreme risks of being struck.