

History of Roofing

Rooftop Quality Assurance

AIA
Continuing
Education
Provider

8 IIBEC Continuing Educational Hours
8 AIA Learning Units and HSW Credit

Version 09.19.01

History of Roofing

- Roofing and shelter
- Early roofing
- Beginning of present-day roofing
- Roofing today



Beginnings

- Caves
- Tree Bark
- Grass
- Animal Skin
- Thatch - Sticks and leaves or palms



Early Civilizations

Roofs in some ancient cultures were as diverse as they are today.

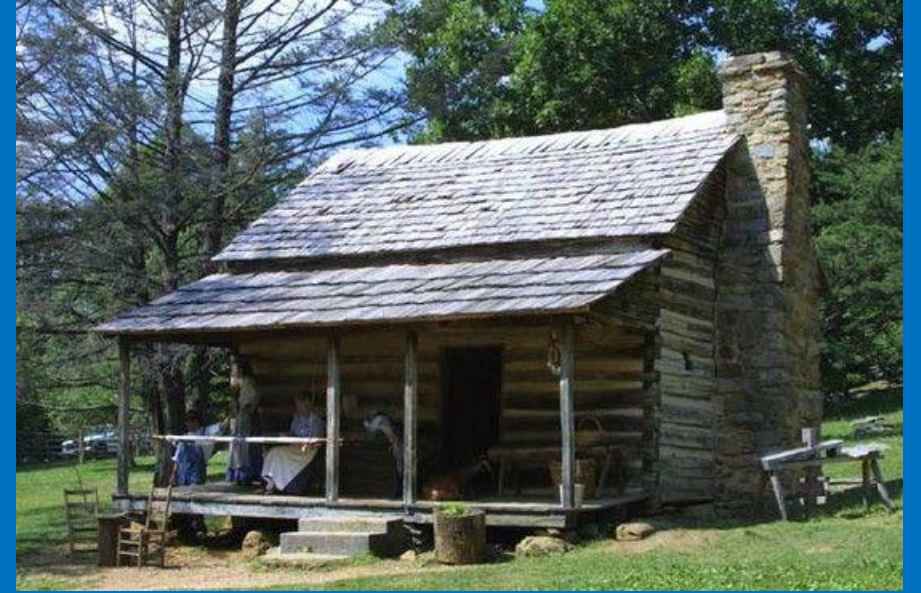
- Egyptian roofs were made of stone slabs
- Greek & Roman cultures often used clay tiles on timber trusses.
- English countryside houses utilized thatch



Early Americas 1600 - 1900

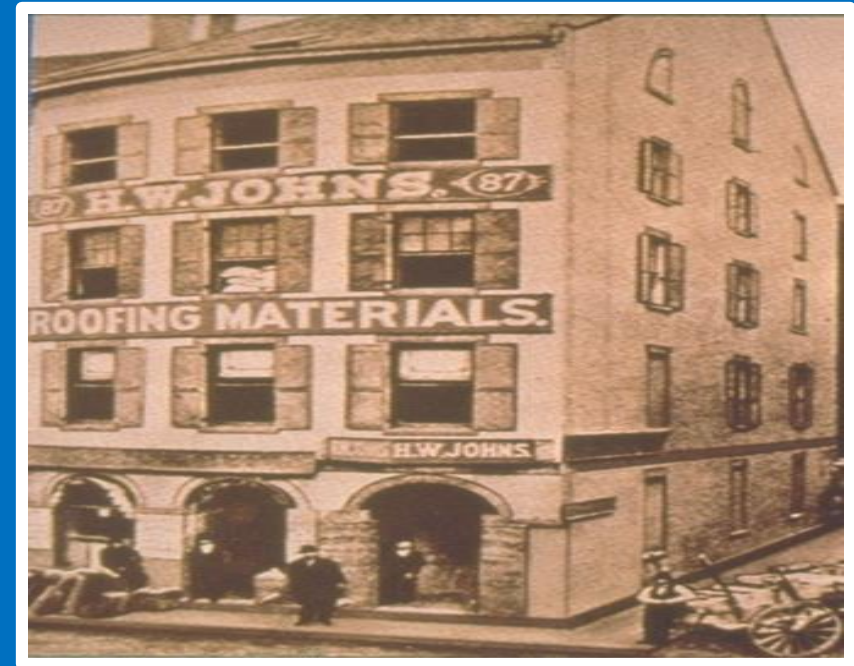
- 1600's - Wood in Virginia
- 1650's - Slate in Boston
- 1760's - Copper in New York
- 1800's - Tinplate
- 1810's - Zinc
- 1860's - Galvanized steel
- 1890's - Aluminum/Tern plate

Note: Most early roofs were
water shedding!



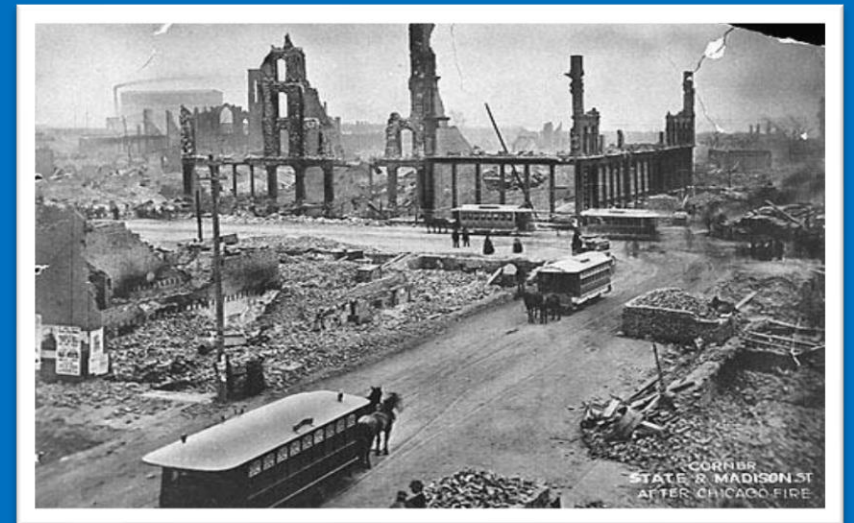
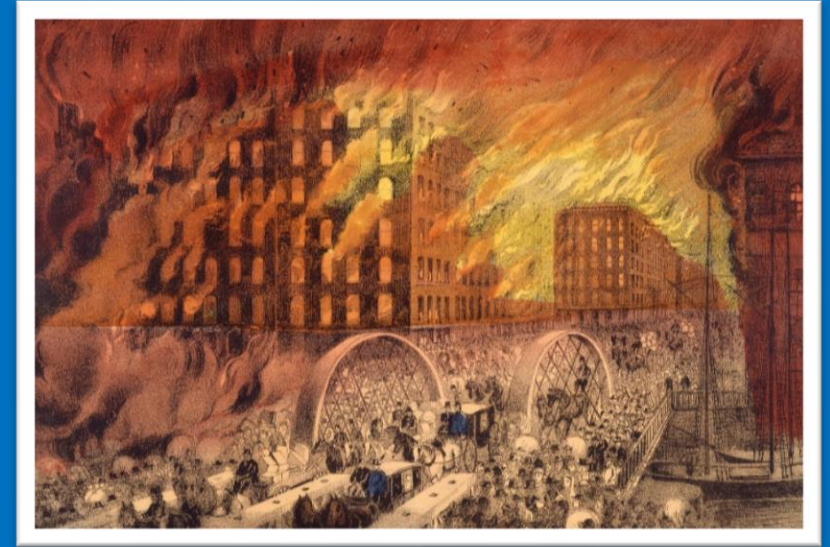
Built-up Roofing Begins (BUR)

- 1840 - Paper, pine tar and sand
- 1844 - Warren Roofing begins in Ohio
- 1847 - Coal Tar and saturated felt begin
- 1848 - Barrett Roofing begins in Chicago
- 1858 - H.W. Johns starts



Early BUR- 1850 to 1900

- 1868 - Slag introduced
- 1871 - Chicago fire: 17,450 buildings burn. 3.3 sq. miles. Majority of the buildings had shingle roofs or tar flat roofs.
- 1870's - Barrett markets 5 ply tar/paper & slate against wood shingles
- Roofing Specifications
- Roofing Articles



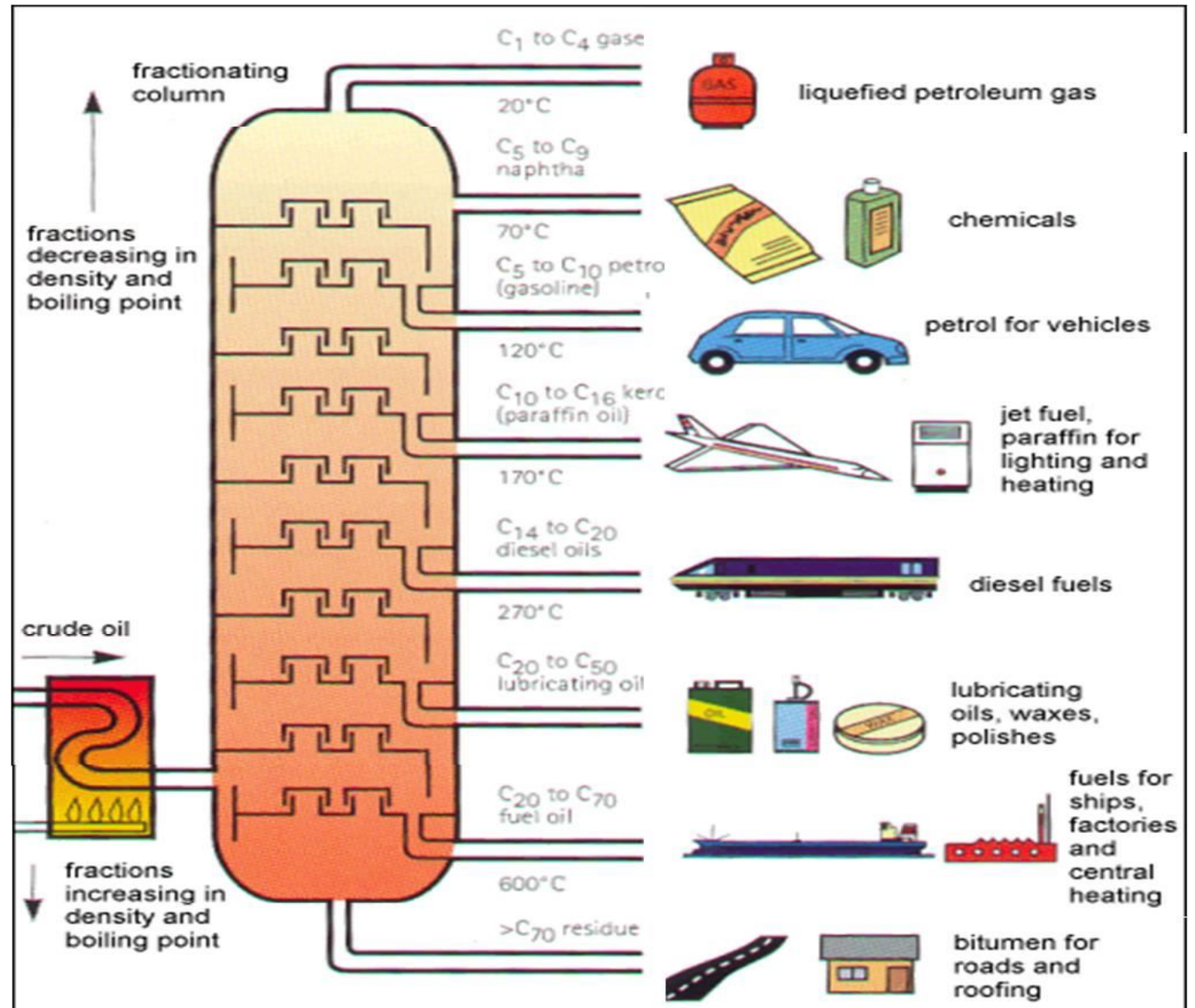
BUR – Early 1900's

- 1911 - 165,000 buildings. Flying brands
- 1916 - UL introduces classes A to H (A, B & C today)
- 1916 - Roof Bonds Introduced
- 1920's - Asbestos felts introduced

BUR – 1930 – 1950's

- Late 1930's - Asphalt Introduced
- 1941 - Dow trial IRMA in Michigan
- Late 1940's - Glass fiber felts introduced
- 1953 - Livonia fire leads to FM research & development of UL 1256 & ULC S126

Oil Refining



BUR – 1960's

- 1960's - Rag replaced with pulp (paper)
- 1961 - Cold process BUR introduced
- Glass & polyester reinforcements introduced

BUR – 1970's

- 1972 - Hot applied rubberized asphalt
- 1972 - Oil embargo - poor quality asphalt
- 1972 - Insulation requirements increase

Single Ply Membranes

- 1957 - Neoprene at Yale arena
- 1963 - Butyl by Miner Mfg. of Granby
- 1965 onward - PVC, PIB, CPE, CSPE
- 1990's - TPO & EP
- 1970's - Extended warranties
- 1980's - Extended guarantees

Insulation

- 1941 - Extruded polystyrene
- 1952 - Wood fiber
- Mid 1950's - Perlite and Foamglass
- 1960's - Cork
- 1956 - Glass fiber
- 1960's - Expanded Polystyrene

Insulation (cont'd)

- Late 1960's - Urethane board stock
- 1969 - Open cell phenolic
- Late 1970's - Polyisocyanurate Foam
- 1981 - Mineral Fiber
- 1983 - Closed cell phenolic

Summary

Today: The Roof Observer is required to know specifics on many roof systems, combinations, codes and Regulations

A CHALLENGING JOB!



Questions and Discussion

