



Virginia's Asphalt Paving Industry



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Amazing Asphalt

- **Asphalt** (known in other parts of the world as “bitumen”) is a natural substance that has some amazing physical properties.
- It’s sticky (**adhesive**) and elastic, able to stretch, bend and flex without breaking (**cohesive**).
- It is not soluble in water so it does an excellent job of waterproofing.
- At air temperatures, asphalt cement is a solid or semi solid cement (**highly viscous**).
- When heated, it becomes thinner, acts as a lubricant and is easier to use.



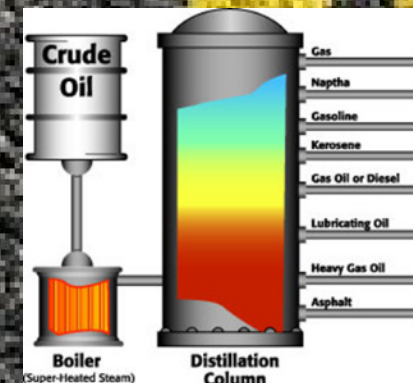
- It exists naturally in a few places in the world such as a lake on the island of Trinidad.



- And the LaBrea “tar pits” in downtown Los Angeles where it has seeped from the ground for more than 10,000 years.



- Most of the asphalt used today for paving is a byproduct of refining petroleum crude oil.



A Little Asphalt History



- One of the world's oldest engineering materials.
- Sumerian shipbuilding industry used asphalt to caulk and waterproofing ship hulls in 6000 B.C.



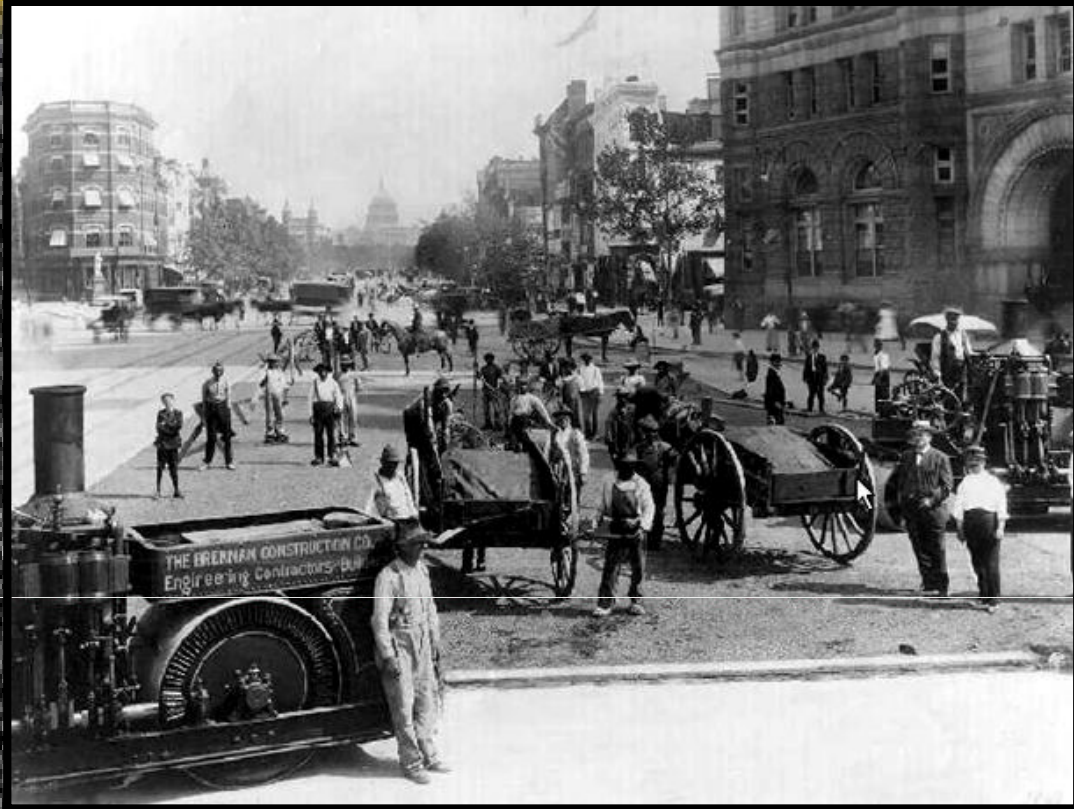
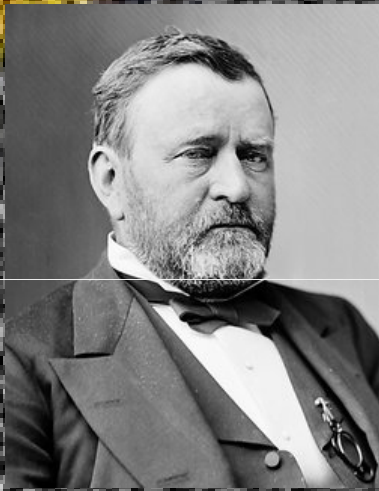
- Egyptians used asphalt as a waterproofing material in 2600 B.C. (**Moses' basket**)
- Also used as a preservative in mummies wrappings.



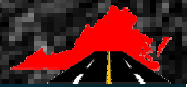
What you know as “Asphalt”

- Known by many names: “**Asphalt concrete**”, “**bituminous concrete**”, “**blacktop**” or just plain “**asphalt**”.
- A composite material commonly used in the construction of road, airport and parking lot pavements.
- Consists of graded mineral aggregate coated and bound together with asphalt cement/binder.
- Placed/laid (not “poured”) in layers as thin as ½” and compacted to a smooth, dense, waterproof layer.

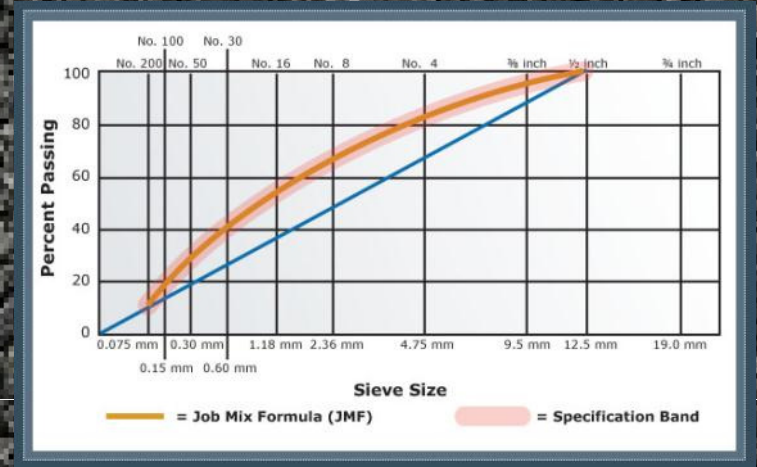




- **President Ulysses S. Grant had Pennsylvania Avenue paved with Trinidad asphalt in 1876.**
- **31 years later it was resurfaced with asphalt derived from petroleum distillation process.**

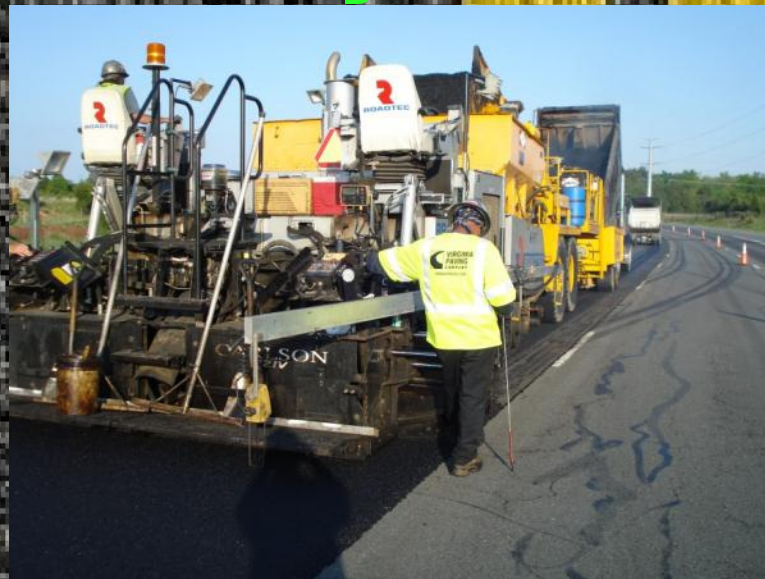


Asphalt is an Engineered Product





Asphalt is 100% Recyclable



Asphalt is the World's Most Recycled Product

- *Asphalt road surface is the most widely recycled material in the US. in both gross tonnage and by percentage.**
- 80% of the asphalt removed each year from road surfaces during widening and resurfacing projects is reused as part of new roads, roadbeds, shoulders and embankments.

* According to the Federal Highway Administration (FHWA) and United States Environmental Protection Agency (EPA)



Pavement Facts

- **94%** - percentage of the +2 million miles of U.S. roads surfaced with Asphalt.
- **89%** - percentage of Virginia Primary Roads were surfaced with Asphalt in 1980.
- **97%** - percentage of Virginia Primary Roads surfaced in 2011. (**Only 1.3% system growth in 30 years**).
- **71%** - percentage of Virginia Interstate System surfaced with Asphalt in 1980.
- **85%** - percentage of Virginia Interstate System surfaced with Asphalt by 2011. (**11% system growth in 30 years**).
- **90%** - percentage of asphalt mix laid in 2011 was surface mixes.



- **0** – number of concrete paving companies domiciled in Virginia.
- **\$379 Million** - value of VDOT 2011 asphalt Maintenance contracts.
- **\$6,930** – average maintenance cost per lane mile of asphalt pavement. (**50,224 lane miles of asphalt in VDOT system**)
- **\$69 Million** – value of VDOT 2011 PCC patching contracts.
- **\$26,660** – average cost to maintain one lane mile of concrete pavement. (1,096 lane miles of PCC pavements in VDOT system)



We are Virginia's Paving Industry

- **31**- number of Asphalt Producer Companies across the Commonwealth
- **122** – number of Asphalt Manufacturing Plant Facilities
- **10 Million Tons** – total tons produced by Industry in 2011
(Down from 15 Million 2005)
- **35%** - percent industry capacity currently utilized



\$537 Million Investment in Virginia



- **\$200 Million** – amount our Industry has in total plant investments.
- **\$5 Million** - average cost per plant for new facilities or plant replacement at existing sites.
- **\$337 Million** - Industry has capital investment in construction and laboratory equipment .



Employment Opportunities



- **6,500** – number of Virginians employed by Virginia's Asphalt Industry.
- **\$238 million** - annual wages earned by Asphalt Industry workforce.
- **2,000** – number of contract and independent truckers hired by Industry to haul materials.
- **\$150 million** – amount spent annually for hauling.



\$500 Million in Materials Purchases in 2011



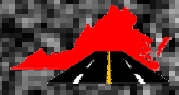
Over \$1 Billion in Asphalt Industry Revenues in 2011



Asphalt Industry's #1 Customer is VDOT



- **58%** - VDOT asphalt market share in 2011 VDOT (historically 40-45%).
- **80%** - percent of VDOT 2011 asphalt tonnage that was maintenance (historical 50/50 split between maintenance vs. new construction).



Virginia's Other Asphalt Paving Markets



- **28%** - percent of asphalt produced in 2011 that went to commercial/private work (VDOT specifications). Greatest market losses in recent years here due to poor housing market and U.S. economy.



- **8%** - percent of the 2011 asphalt tonnage placed on Virginia's municipal streets and subdivisions. Market has been fairly constant over the years at 8-11% of the overall. (VDOT specifications).



- **6%** - percent 2011 asphalt tonnage placed on parkways and other facilities owned or managed by the Federal government.



Asphalt

The Sustainable Pavement



Questions?

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