

Latest Developments in cold laid asphalt

13 April 2023



Types of Cold laid asphalt

- ▶ Cold mixed cold laid asphalt
- ▶ Hot mixed cold laid asphalt
- ▶ Warm mixed cold laid asphalt
- ▶ Hot/warm mixed (re-heated) half warm laid asphalt?



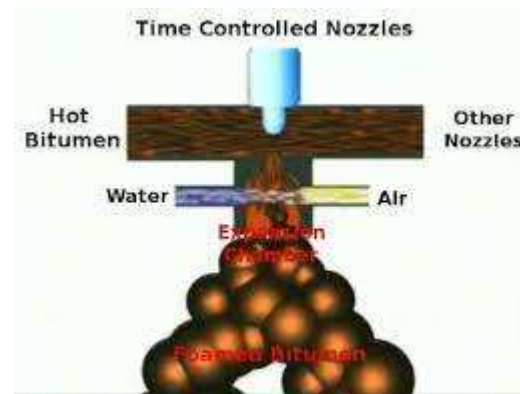
Hot Mixed Cold laid Asphalt

- ▶ Aggregate and Binder heated to $> 150^{\circ}\text{C}$
- ▶ Various aggregate grading options (Continuous graded Preferred)
- ▶ Straight run Bitumen with a Cutter (Cutback / Flux etc.)



Warm Mixed Cold laid Asphalt

- ▶ Aggregate and Binder heated to $<120^{\circ}\text{C}$
- ▶ Various aggregate grading options (Continuous graded Preferred)
- ▶ Straight run Bitumen with a Modifier (Propriety Hydrocarbons) or Foamed bitumen's
- ▶ MS Grade emulsions



Cold Mixed Cold laid Asphalt

- ▶ All mixed at ambient temperature (no Heating required)
- ▶ Various aggregate grading options
- ▶ Emulsion as a base binder
 - ▶ Anionic Emulsion used for Dense graded cold mixes
 - ▶ Cationic premix grade used for open-graded cold mixes
 - ▶ Inverted Emulsions are also popular
 - ▶ Polymer modified emulsions are also used
- ▶ RA with a rejuvenator
- ▶ Quality Control Important



Cold laid Asphalt - Requirements

- ▶ Must be workable at ambient temperature to allow for sufficient compaction
- ▶ As long as possible shelf life
- ▶ Must harden in place in the shortest space of time (should not deform)
 - ▶ Water/flux/volatiles should evaporate to allow asphalt to “harden”
- ▶ Should be dense enough to not let water through to moisture-sensitive pavement
- ▶ Must be resistant to the influence of moisture
- ▶ Accreditation (Agreement or SATAS)
- ▶ Accommodate Temperature fluctuations (Summer & Winter Grade)



Cold laid Asphalt - Classes

- ▶ Emergency repair - Throw and go
 - ▶ Typically, very workable and is basically compacted by traffic and is not a permanent repair solution
- ▶ Semi-permanent repair
 - ▶ Pothole prepared properly before filling and CLA compacted prior to opening - typically expected to last at least one year
- ▶ Permanent repair
 - ▶ Pothole prepared properly before filling and CLA compacted before opening - typically expected to last three years or as long as surrounding pavement surface.

Thank you