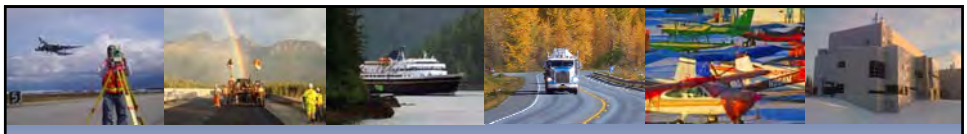
Alaska Department of Transportation & Public Facilities

Hard Aggregate

Jason Lamoreaux – AK DOT/PF Project Engineer
Josh Hart – Granite Construction

11/19/13

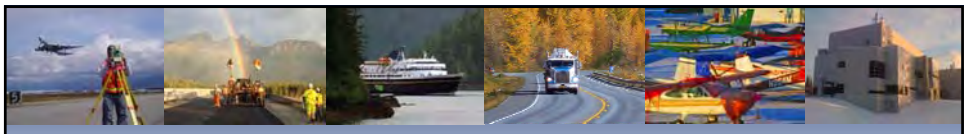


Hard Aggregate (HA)

- Dimond Blvd. Resurfacing: Jewel Lake Road to Seward Highway
  - “Mill and Fill”
  - Length – 3.5 Miles
  - Width – 4 and 6 lane sections plus turn pockets
  - Depth – 2” for west half, 3” for east half
  - Asphalt Quantity – 28,000 tons
  - Contractor – Granite Construction

HA Material Properties

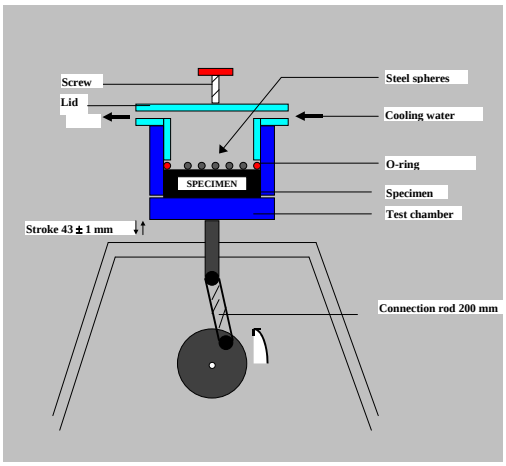
- Nordic Abrasion (ATM 312) = 8% Max
  - 7/16” to 5/8” Material
  - Test evaluates small percentage of overall aggregate material (~15%)
  - CR Materials currently evaluating effects of use of HA for a higher percentage of aggregate material.
- Prall Testing (Not Required or Specified)
  - Used for measuring rut resistance



Nordic Abrasion (ATM 312)

Prall Testing

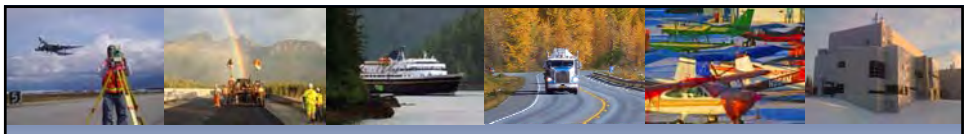
Prall Testing



Prall Testing

Nordic Countries Classification of wear resistance of asphalt mixtures using Prall results

Class	Prall-loss, cm^3	Wear resistance
1	< 20	Very good
2	20 – 29	Good
3	30 – 39	Satisfactory
4	40 –50	Less satisfactory
5	> 50	Poor

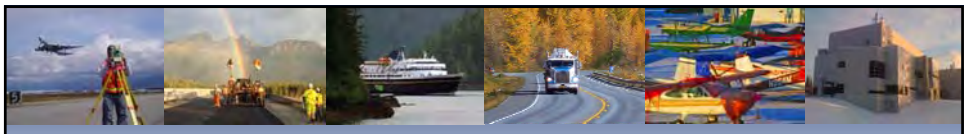


Dimond Blvd. Test Results

- Nordic Abrasion (8% max)
  - Our Mix Design: 4.8%
- Prall
  - MD-1: 18.5 cm^3 loss
  - MD-2: 23.2 cm^3 loss

Central Region Specification

- Hard aggregate used in the past
  - Kodiak roads and airport
  - Tudor Road in 2005
- New policy for use in high traffic areas
  - ADT > 5000 vehicles/day/lane



HA Sources

- Cantwell, Alaska (2 Locations near MP 217)
- CalPortland in Dupont, WA
- Jack CEWE Ltd in Coquitlam BC, Canada

Granite Construction