Example Problems Packet

Roadway Inspection Recertification

Quality Control / Quality Assurance

SD DEPARTMENT OF TRANSPORTATION

Problem #1

Balance Plant, Truck and Paver

1. The spread rate for hot mix calls for 1634 tons per mile, full width, and the total pavement width is 24 feet with a two foot bevel on each side. How far should a 25 ton load go on one side?

Problem #2

Paver Speed

2. Scheduled plant production is 450 tons per hour. Spread rate is 6.463 feet per ton (on one side). How fast should the pave speed be (in ft/min or mi/hr) to keep the paver moving full time and eliminate starts and stops?

Problem #3

Roller Speed

3. At least 10 impacts per foot are needed to keep the pavement smooth. A roller operates at 2520 vibrations per minute. How fast should the roller go in vibratory mode? In mph, what is the top speed the roller should travel?

Problem #4

Tack Rate

4. There are 392 gallons of emulsion (undiluted) used on a shot of 3298 feet by 12 feet. The emulsion temperature is 150°F. The temperature conversion is 0.97750 for 150°F to 60°F. What is the shot rate?

Problem #5

Flush Seal Rate

5. If 12,256 lbs. of emulsion in a distributor has 14,456 lbs. of water added to it, what shot rate should be used to give an undiluted shot rate of 0.05 gallons per sq. yd. for a flush seal? (The weight per gallon of emulsion at 60°F is 8.328)

Problem #6

Core Locations

6. Given the following information for a 12 ft. wide pavement, determine the coring tonnage and the centerline offset for the following cores.

Core #	Ton Random #	Offset Random #
1A	0.53	0.74
1B	0.63	0.98
2A	0.35	0.30
2B	0.63	0.43

Core 1A tonnage =		Core 1A offset =	
Core 1B tonnage =		Core 1B offset =	
Core 2A tonnage =		Core 2A offset =	
Core 2B tonnage =		Core 2B offset =	