

# PG SPECIFICATION

CALTRANS  
IMPLEMENTATION

# WHAT IS PG GRADING

Performance Grading based on climate

Example: PG64-10

64 = Average 7 day max pavement temperature in centigrade. Higher number = stiffer the binder.

-10 = Minimum pavement temperature in centigrade. Lower number = more flexible binder.

# PG APPLICATION

- Designed for hot mix asphalt
- Specification for **BASE** asphalt binder for asphalt rubber
- **Future** specification for hot applied modified asphalt chip seal binder
- **NOT** applicable to asphalt emulsions – **no AASHTO and ASTM specs for emulsions using PG at this time**

# TOOLS OF PG GRADING

- ROTATIONAL VISCOMETER - workability
- DYNAMIC SHEAR RHEOMETER (DSR) – high and mid temperature stiffness
- ROTATING THIN FILM OVEN (RTFO) – short term aging
- PRESSURE AGING VESSEL (PAV) – long term aging

# TOOLS OF PG GRADING cont'd

- **BENDING BEAM RHEOMETER (BBR)** – cold temperature flexibility against thermal cracking
- **DIRECT TENSION (DT)** – cold temperature strength against thermal cracking (This test is not being used by CALTRANS)

# PROGRAM

- Target implementation date Jan. 1 2006
- Initially to involve neat asphalt only
- Working on specification for PMA (PG+)

# PROGRAM

- AASHTO M320-03 to be adopted with two exceptions
- For PG 70 and higher, if PAV DSR fails at test temperature, then it will be re run at a temp 3° higher. If the test result is <5000 kPa, the asphalt is deemed acceptable.
- Add ductility test @ 25°C on RTFO residue for grades PG70 and higher

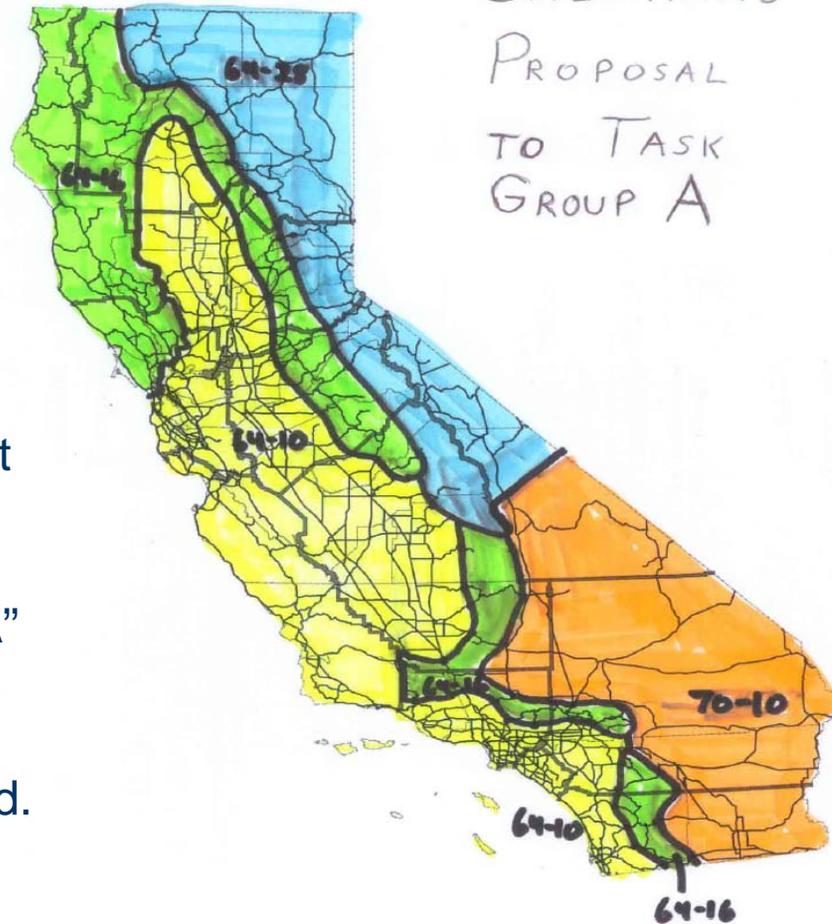
# PROGRAM

## FOUR GRADES

- PG64-10
- PG64-16
- PG64-28
- PG70-10

# PG Map for California

CALTRANS  
PROPOSAL  
TO TASK  
GROUP A



This is a draft  
Caltrans  
Proposal to  
Binder TG "A"

Map has not  
been finalized.

# PROGRAM

- All suppliers need to have laboratory AASHTO / AMRL certification by Jan. 1, 2007

# INDUSTRY CONCERNS

- Avoid proliferation of specifications<sup>1</sup> – **AVOID** grade bumping (grade bumping may still occur, waiting on input from DME's for final decision.)

1 - Proliferations of grades would result in major tankage and logistic issues.

- Other options such as using PMA for higher traffic/stress areas are being evaluated (PG+)

# INDUSTRY CONCERNS

- Uniform implementation of specs. For all CALTRANS districts
- Involve CALTRANS, cities and counties to implement changes concurrently
- Keep all PAV conditioning at 100°C for 20 hrs (still being debated, hope to have a decision in the near future)

# FURTHER WORK

- Educate industry CALTRANS and city and county agencies
- Come up with a program to ease transition of specifications from AR to PG. A plan has been established by CALTRANS. Chuck is finalizing the plan.
- Implement PG system for PMA (PG64-34 with the addition of ductility @ 4°C and elastic recovery proposed by industry)

## FURTHER WORK

- Specify base asphalt for asphalt rubber using pg (sent to RACTG for recommendation)
- Specify base asphalt for asphalt emulsions using PG (sent to PPTG, binder sub-group for recommendations) - **The PPTG does not recommend specification for emulsion base)**

# CALTRANS PGTG PROGRAM

- QUESTIONS?