AAPA National Proficiency Testing Round 2019/20

Instruction sheet for test stream 4: Resilient Modulus – Indirect Tensile Method

Description:
Laboratories have registered for the Resilient Modulus stream of the AAPA 2019/20 Proficiency Testing Round. Samples of loose mix will be sent to the participating laboratories for preparation of Resilient Modulus Samples. Test method: AS/NZS 2891.13.1
Where the laboratory does not hold NATA accreditation for this Australian Standard method, results for an equivalent local test method may be reported, but please note that the proficiency z-score analysis will not be valid for such results.

To report the results, access the webform by clicking: http://www.123formbuilder.com/form-5244359/s4-resilient-tests
Please note that you will need the Laboratory ID Code, which has been sent to you via e-mail to complete the webform.

Submit results by 30 May 2020

Procedure:
Loose asphalt mix samples will be sent to laboratories in containers. Each container has a unique sample number. Where material from two containers is used to prepare the resilient modulus samples, please report numbers of both containers.

The loose mix is a sample of AC10 C320

Stage 1: Compaction:
- Preheat the compaction moulds in the oven
- Heat the proficiency test sample provided to about 160°C
- Prepare at least 3 x 100 mm diameter Gyropac specimens, using a mass of 1,250 g.
- Condition these samples for 1hr ± 5 min in an oven at compaction temperature 150 °C ± 3°C (ensure the oven temperature allows temperature to be within this range)
- Compact each asphalt sample to 120 cycles
  o Note:
    ▪ All compacted specimens need to be within the height range of 35 – 70 mm
    ▪ Mass of material may be adjusted to comply with the height range

Stage 2: Maximum Density:
- Obtain two suitably size test samples and undertake maximum density testing on the preheated mix supplied

Stage 3: Volumetrics:
- Determine the Bulk Density for each Gyropac sample
- Use these Bulk Density and Max Density values obtained to calculate the Air Voids for each sample
- For the three specimens used ensure that the air voids are within ± 0.5 % of the mean air voids
- Ensure these samples are then air-dried back to constant, before undertaking the resilient modulus
Sample numbering:
- Number the specimens selected for Resilient Modulus testing R1, R2 and R3
- For the three specimens used ensure that the air voids used are within ± 0.5 % of the mean air voids

Resilient modulus – Indirect tensile method
Settings:
- Haversine displacement load control (should be the default for this test)
- Target strain amplitude: 50 με
- Rise time 0.04 s
- Pulse repetition period 3.0 s
- Test temperature 25 °C

Reporting:
Use webform to report
- Compacted density of each specimen
- Height of each specimen
- Diameter of each specimen
- Maximum density results used for test
- Air voids of compacted specimens based on compacted density of each specimen and maximum densities of supplied mix

Report average and coefficient of variation for five post peak pulses for:
- Resilient Modulus (MPa)
- Peak load (N) (optional)
- Recovered horizontal strain (με) (optional)
- 10% to 90 % rise time (ms) (optional)