

Test Summary

Vibrating Kelly Ball Test (V-Kelly Test)

Test

AASHTO TP 129

Objective

Examine workability and response to vibration of a concrete mixture

Time to Complete Test

10 minutes

Equipment

- A $\frac{3}{4}$ in. vibrator is attached to a 6 in. diameter hemisphere, together weighing 30 lbs.
- The ball is also attached to a graduate stem stabilized by an adjustable steel frame.
- The vibrator speed is controlled to 8000 vpm.

Overview of Test Procedure

1. The sample concrete is poured uniformly into a container and levelled.
2. The ball is lowered until it touches the surface of the concrete. The reading on the stem is noted.
3. The ball is then allowed to slowly descend into the concrete using only its weight. When it stops moving, the reading is recorded.
4. The vibrator is started and depth readings are noted every 6 seconds for 36 seconds under vibration.
5. The sample is re-mixed and the test is repeated twice.
6. A plot of average depth versus square root of time is developed. The slope of the plot is reported as the V-Kelly Index in units.

For More Information

Peter Taylor

Director, National Concrete Pavement Technology Center

Iowa State University

2711 South Loop Drive, Suite 4700

Ames, IA 50010

ptaylor@iastate.edu, 515-294-9333