Role of Quality Control/Assurance Technician

Quality Control/Quality Assurance

- Quality control (QC) – control the process
- Quality assurance (QA) – ensure that the product meets the specifications
- But…VDOT pays based on the contractor's results

What do you need to do to control the process?

- Gradations on incoming aggregate
- Gradations/asphalt content of RAP
- Stockpile moisture contents
- Mix
  - Asphalt content
  - Gradation
  - Volumetric properties
- Mix temperature – plant and field
- In-place density

Make sure your data is correct

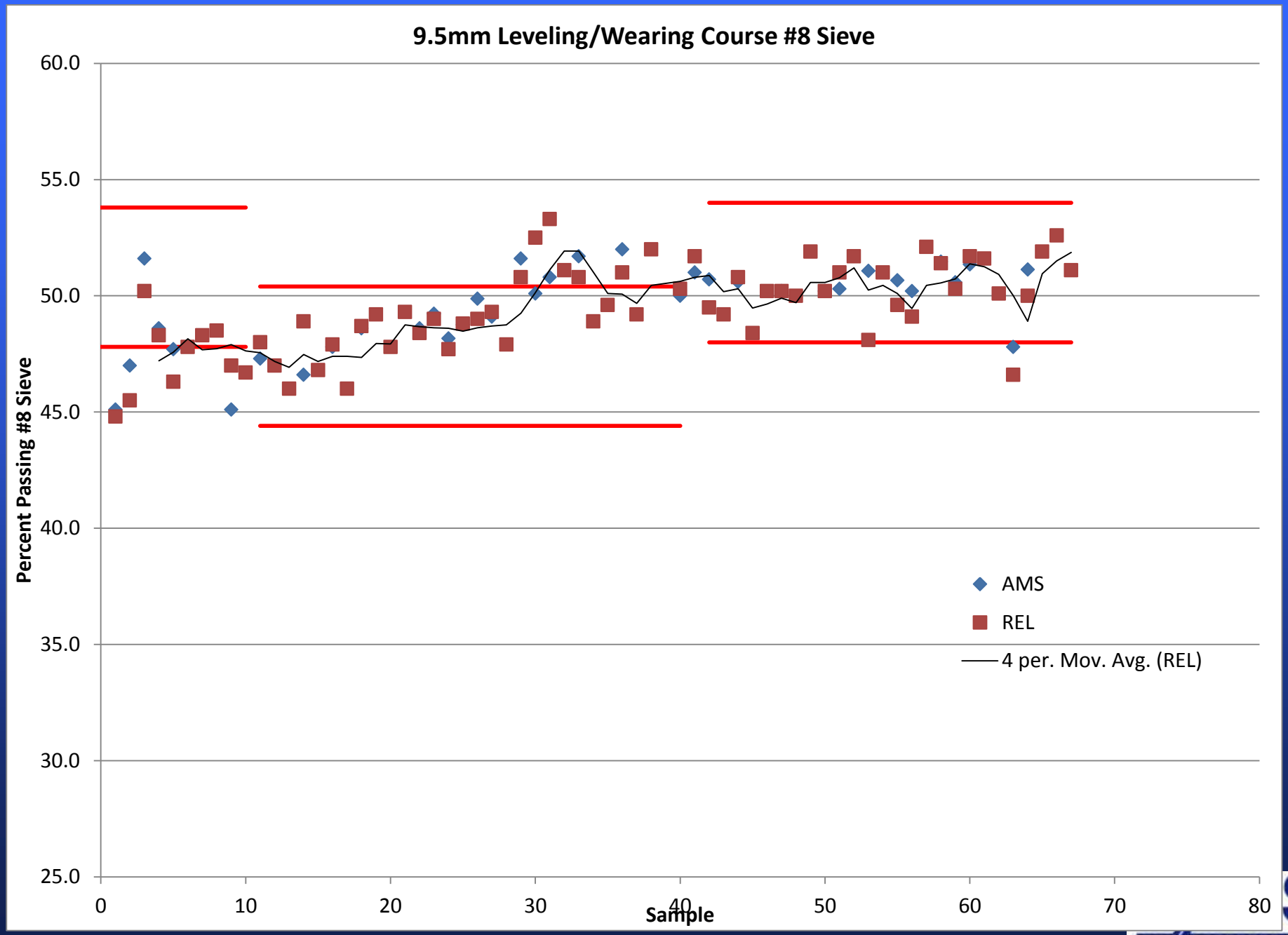
- Calibrate lab equipment:
  - Scales
  - Thermometers
  - Ovens
  - Water baths
  - Ignition furnace – air flow and scale
  - Manometer
  - Gyratory compactor or Marshall hammer
- Follow test procedures

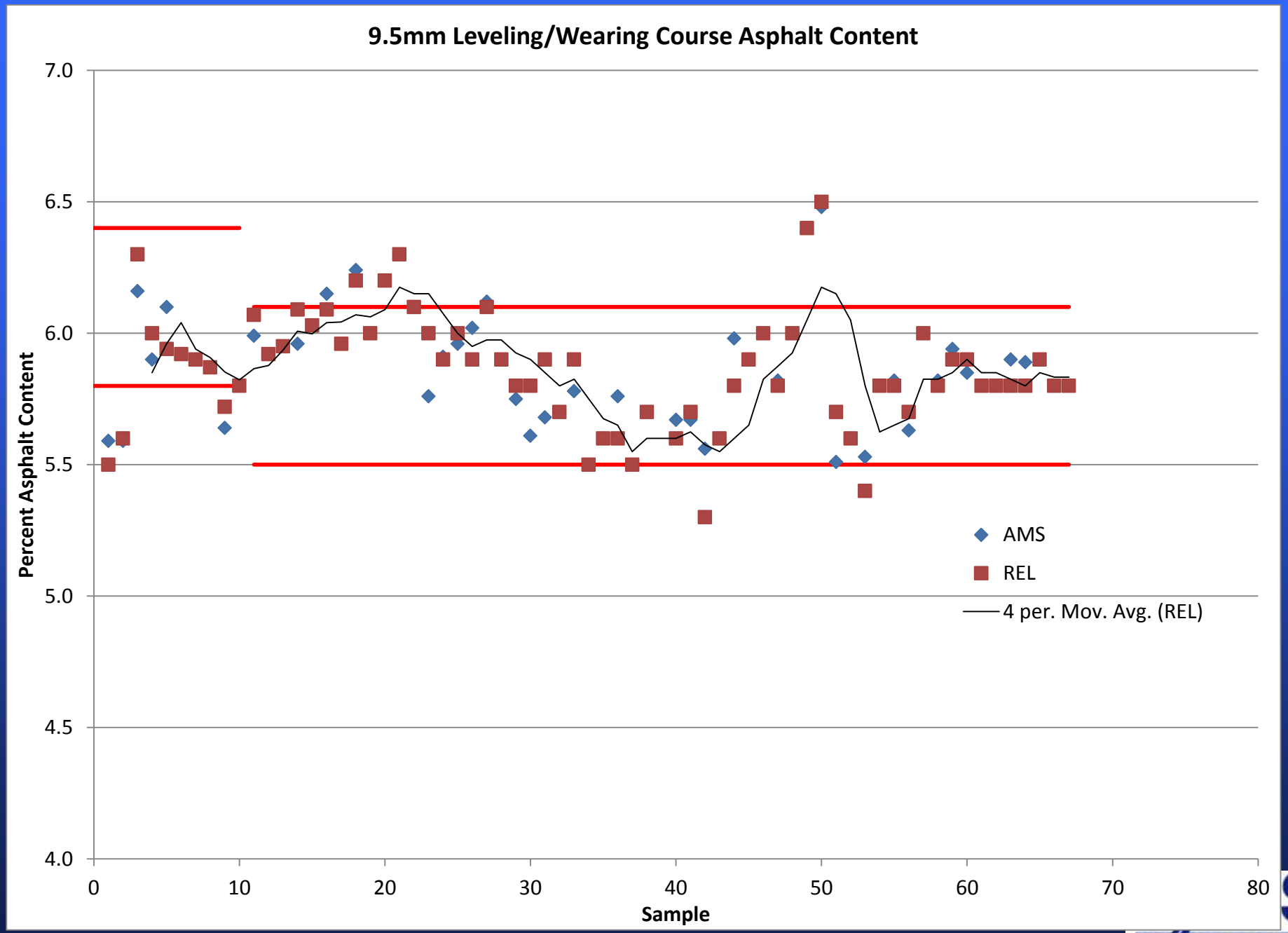
Make sure plant is calibrated

- Asphalt meter or weigh pot
  - Dedicated calibration tank
  - Empty tanker or distributor
- Cold feed bins
- Belt scales

Identifying problems before they occur

- Monitor gradation of incoming material
- Trend analysis – control charts


9.5mm Leveling/Wearing Course #8 Sieve
60.0
55.0
50.0
45.0
40.0
35.0
30.0
25.0
Percent Passing #8 Sieve
0
10
20
30
40
50
60
70
80
Sample
AMS
REL
4 per. Mov. Avg. (REL)


9.5mm Leveling/Wearing Course Asphalt Content
Percent Asphalt Content
7.0
6.5
6.0
5.5
5.0
4.5
4.0
0
10
20
30
40
50
60
70
80
Sample
AMS
REL
4 per. Mov. Avg. (REL)


9.5mm Leveling/Wearing Course Air Voids
Air Voids, %
Sample
AMS
REL
4 per. Mov. Avg. (REL)
0
1
2
3
4
5
6
7
0
10
20
30
40
50
60
70
80

Why control charts?

- Help you see trends in data
- Identify gradation changes and make adjustments before out of specification
- Watch asphalt content
  - Cold loads of modified binder = low AC%?
  - Furnace needs cleaned?
  - Meter calibration?

Communicate with field!

- Communicate Gmm values
- What are temperatures immediately behind the screed?
- How is compaction in the field?
- Changes in mix that might effect density
  - Low AC%, low dust, high voids – might need extra roller passes

Who tests more?

- Quality control technician needs to test as frequently as necessary to control process
  - If sample appears to be failing, immediately pull another sample to confirm mix bad, not sample
- Quality assurance randomly tests at specified frequency in specifications


Questions?