CANDIDATE INSTRUCTIONS

Preparation information for the candidates regarding what to expect at the witnessing for the CivCert Certification of Persons scheme.

First off, you'll already have had to sit a theory assessment at least a month before the witnessing date which you must have passed with the minimum of 60% to be allowed access to the witnessing. You will be informed of your theory mark in advance of the witnessing.

The theory assessment is a computerised multiple-choice test on the sampling and testing methods applicable to the material type you are going to be witnessed on. The system is online and you'll be able to sit the assessment as long as you have access to a computer at any approved assessment centre which will most likely be at your laboratory facility. There will be an independent invigilator that will sit in on this assessment. You will click on the correct answer and on submission your mark will be made available to you.

Should you not obtain the minimum of 60% on your first try, you will be allowed to immediately repeat the test to see if you are able to improve your mark. Should you still not obtain the minimum requirement, you'll need to attempt the online assessment within one month on a date provided by the NLA-SA. After the second attempt the system will automatically be shut down after providing you with your new mark and you will not be able to access the system.

The witnessing will include the following per material type:

Material type: Aggregates

Methods

- TMH5 MB 2 & MB 1 Conveyors & stockpiles (sampling)
- TMH5 MD1 & MD2 Riffling and coning & quartering (sampling preparation)
- SANS 3001-AG1 Particle size distribution
- SANS 3001-AG2 ALD
- SANS 3001-AG4 FI
- SANS 3001-AG20 + 5 mm BD, AD & water absorption
- SANS 3001-AG21 - 5 mm BD, AD & water absorption
- TMH1 B9 LBD & CBD
- SANS 3001-AG10 ACV & 10% FACT

What to expect

- TMH5 MB 2 & MB 1 Conveyors & stockpiles (sampling)
    - Sample from one of these 2 methods & use for sample preparation
- TMH5 MD1 & MD2 Riffling and coning & quartering (sampling preparation)
    - Use the sample you collected in the sampling step to reduce the size of the sample for the grading, FI & ALD.
- SANS 3001-AG1 Particle size distribution
    - Wash the sample you reduced down to size in the sampling preparation step
    - Use the pre-prepared washed sample to conduct the grading, FI & ALD, record the various values on the bench sheet.

    - **NOTE**: You will not be required to complete the full grading nor the FI or ALD. The assessor will just need to see you are able to conduct the basics correctly.
- SANS 3001-AG2 ALD
    - Confirm ALD device is reading correctly - verification.
    - Do a reading on a number of the particles to indicate your ability to correctly read the ALD measurements.
- SANS 3001-AG4 FI
    - Pass a number of the particles thru the FI slots to indicate your ability to correctly identify the correct slot & the process involved.
- SANS 3001-AG20 + 5 mm BD, AD & water absorption
    - This sample will already have been soaked so you'll just need to continue with the actual testing.
- SANS 3001-AG21 - 5 mm BD, AD & water absorption
    - This sample will also have been soaked and you'll need to demonstrate how one gets to the SSD state.
    - Once the assessor is happy with your process (at least 2 rounds to determine SSD condition), use the sample as is and continue with the testing to demonstrate the process.
- TMH1 B9 LBD & CBD
    - Use the finer pre-prepared sample to determine the L&CBD values.
- SANS 3001-AG10 ACV & 10% FACT
    - Talk through the process of preparing the sample, with the assessor.
    - Use the pre-prepared sample to undertake the ACV as well as the 2nd point for the 10% FACT.
    - No wet determinations are required.

Calculations

- All work bench calculations to be completed where possible.
- A separate sheet with all bench sheet recorded values will be given to you so you can do the full calculations which will need to be handed in as part of your competency evidence for the various methods.

Material type: Granular

Methods

- TMH5 MB 1 & MC1 Stockpiles & unstabilized pavement layers (sampling)
- TMH5 MD1 & MD2 Riffling and coning & quartering (sampling preparation)
- SANS 3001-GR1/PR5 Washed particle size distribution & GM
- SANS 3001-GR10/GR11 Atterberg limits
- SANS 3001-GR30 MDD & OMC
- SANS 3001-GR40 CBR
- SANS 3001-NG5 in situ nuclear gauge field density (probe readings)

What to expect

- TMH5 MB 1 & MC1 Stockpiles & unsterilized pavement layers (sampling)
    - Same process as for aggregates except you're likely to be witnessed on the one not done for aggregates.
- TMH5 MD1 & MD2 Riffling and coning & quartering (sampling preparation)
    - Same process as for aggregates except you're likely to be witnessed on the one not done for aggregates.
- SANS 3001-GR1/PR5 Washed particle size distribution & GM
    - This test will be conducted in 3 parts
        - Determining Reduction factor, dry sieving the -20 mm reduced sample, washing out -0.425 mm fraction
        - Decanting water from a pre-prepared sample.
        - Conducting the dry sieving on a pre-prepared sample for +20 mm, -20 mm & -0.425 mm dried washings.
- SANS 3001-GR10/GR11 Atterberg limits
    - 2 point and flow curve are the only 2 methods to be checked.
    - Use sample of pre-prepared -0.425 mm sample for the test.
        - Conduct LL, LS & PL tests fully.
- SANS 3001-GR30 MDD & OMC
    - Split the sample you obtained in the 1st step for both MDD & CBR using the 16 point method & combine into 8 points.
    - Compact only 2 standard MDD points – one around OMC & one ±1% on either side of the assumed OMC.
- SANS 3001-GR40 CBR
    - Use the OMC provided (not the assumed OMC you've determined) & compact B or C mould as per assessors' instructions.
    - Assemble CBR moulds for soaking & take the swell reading.
- SANS 3001-NG5 in situ nuclear gauge field density (probe readings)
    - Undertake standard granular density test with probe including all correct start up checks.

Calculations

- All work bench calculations to be completed where possible.
- A separate sheet with all bench sheet recorded values will be given to you so you can do the full calculations which will need to be handed in as part of your competency evidence for the various methods.

Material type: Binder

Methods

- SABITA TG1-MB1 PMB sampling
- TMH5 Sampling of Penetration grade, emulsion & cutback sampling
- EN1426 Penetration test
- ASTM D36 Softening point test
- D4402 Dynamic viscosity
- TG1 MB-17 Penetration test (PMB binder)
- SANS 3001-BT10 Ball penetration
- SANS 3001-BT11 Sand patch

What to expect

- SABITA TG1-MB1 PMB sampling
  - Talk through the process plus theory questions to cover this portion
- TMH5 Sampling of Penetration grade, emulsion & cutback sampling
  - Same as for PMB's
- EN1426 Penetration test
  - Heated samples in ovens to be used for preparation of Pen, softening point & viscosity.
  - Full test to be undertaken and results recorded on bench sheet after correct cooling regime.
  - *Order of how candidate uses their time is to be checked by assessor.*
- ASTM D36 Softening point test
  - Full test to be undertaken once cooled and results recorded on bench sheet.
- D4402 Dynamic viscosity
  - Either 60°C or 135°C test to be undertaken & results recorded on the bench sheet depending on the temperature the viscometer has been pre-set to.
- TG1 MB-17 Penetration test (PMB binder)
  - Talk through the differences for the PMB test vs penetration grade binder.
- SANS 3001-BT10 Ball penetration
  - Undertake the full test and report answer correctly on the report sheet.
- SANS 3001-BT11 Sand patch
  - Undertake 3 points only & report answer correctly on the report sheet.

Calculations

- All work bench calculations to be completed where possible.
- A separate sheet with all bench sheet recorded values will be given to you so you can do the full calculations which will need to be handed in as part of your competency evidence for the various methods.

Material type: Asphalt

Methods

- TMH5 Uncompacted from truck, core/slab removal (sampling)
- TMH5 Riffling and coning & quartering (sampling preparation)
- SANS 3001-AS1 Briquette manufacture
- SANS 3001-AS2 Marshall stability & flow
- TMH1 C16T (3001-AS4) ITS
- SANS 3001-AS10 BD
- SANS 3001-AS11 MVD
- SANS 3001-AS20 Binder extraction & grading

What to expect

- TMH5 Uncompacted from truck, core/slab removal (sampling)
  - Talk through the process of sampling from the back of a truck.
  - Talk through the process of coring and slab retrieval on site.
- TMH5 Riffling and coning & quartering (sampling preparation)
  - Use both or either method to reduce the sample from the bag in the oven that has been preheated for each of the required tests.
  - Talk through the method of reducing the sample size for a BTB with +20 mm aggregates.
- SANS 3001-AS1 Briquette manufacture
  - Complete 3 briquettes with the material as reduced in the sample preparation process.
- SANS 3001-AS2 Marshall stability & flow
  - Conduct the test using the premanufactured and cooled briquettes from the previous day to conduct the test in its entirety.
  - Record the results correctly on the bench sheet.
- TMH1 C16T (3001-AS4) ITS
  - Use 2 of the premanufactured and cooled briquetted from the previous day to conduct the test in its entirety.
  - Record the results correctly on the bench sheet.
- SANS 3001-AS10 BD
  - Use 3 of the premanufactured and cooled briquetted from the previous day to conduct the test in its entirety.
  - Record the results correctly on the bench sheet.
- SANS 3001-AS11 MVD
  - Use one of the cooled samples prepared by the candidate that morning from the oven heated samples to conduct the test in its entirety.
  - Repost the results on the bench sheet.
- SANS 3001-AS20 Binder extraction & grading
  - Use one of the cooled samples prepared by the candidate that morning from the oven heated samples to conduct the binder extraction portion of the test only. The grading will be evaluated during the aggregate grading assessment.
  - Repost the results on the bench sheet.

Calculations

- All work bench calculations to be completed where possible.
- A separate sheet with all bench sheet recorded values will be given to you so you can do the full calculations which will need to be handed in as part of your competency evidence for the various methods.

Material type: Concrete

Methods

- SANS 3001-CO — Fresh concrete on site & lab & mixing
  Slump, cube making, flow tests
- SANS 3001-CO1 — Sampling of fresh concrete
- SANS 3001-CO1 — Sampling of hardened concrete
- SANS 3001-CO — Density & cube strength testing

What to expect

- SANS 3001-CO — Fresh concrete on site & lab & mixing
  Slump, cube making, flow tests
  - Mix up a concrete sample with the materials provided to the correct mix proportions.
  - Conduct a slump test on the sample & the flow test.
  - Make up 3 cubes and prepare them for the curing process.
- SANS 3001-CO1 — Sampling of fresh concrete
  - Talk through the process of sampling from a ready mix truck.
- SANS 3001-CO1 — Sampling of hardened concrete
  - Talk through the process of extracting a core from an already hardened concrete member.
- SANS 3001-CO — Density & cube strength testing
  - Crush 3 cubes and report the final result on a bench sheet.
  - Determine the concrete density from the information obtained from the cube measurements.

Calculations

- All work bench calculations to be completed where possible.
- A separate sheet with all bench sheet recorded values will be given to you so you can do the full calculations which will need to be handed in as part of your competency evidence for the various methods.