

Q1 Economy Name

Answered: 10 Skipped: 0

| # | RESPONSES | DATE |
|----|-----------------------------|--------------------|
| 1 | Singapore | 9/14/2018 10:45 PM |
| 2 | malaysia | 9/7/2018 3:35 PM |
| 3 | Japan | 7/31/2018 7:13 PM |
| 4 | Republic of the Philippines | 7/30/2018 4:12 PM |
| 5 | New Zealand | 7/23/2018 12:01 PM |
| 6 | Viet Nam | 7/19/2018 4:11 PM |
| 7 | Cambodia | 7/13/2018 2:31 PM |
| 8 | Canada | 6/22/2018 4:29 AM |
| 9 | Chinese Taipei | 6/21/2018 2:07 PM |
| 10 | Australia | 6/19/2018 12:03 PM |

Q3 Organisation responsible for verifying weighbridges within your economy

Answered: 10 Skipped: 0

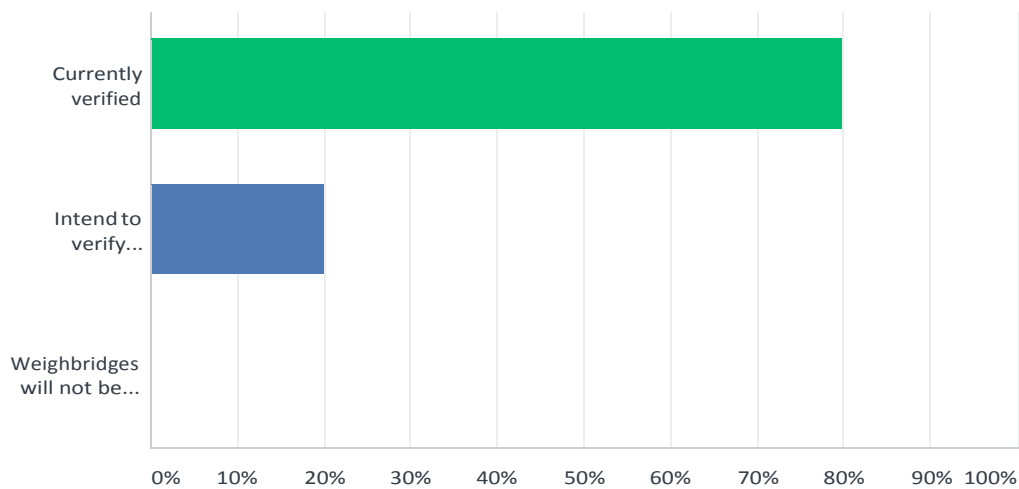
| # | RESPONSES | DATE |
|---|---|--------------------|
| 1 | Enterprise Singapore's appointed Authorised Verifiers from the private sector | 9/14/2018 10:45 PM |
| 2 | sirim | 9/7/2018 3:35 PM |

Survey on the test procedure for verification of weighbridges using substitution

| | | |
|----|---|--------------------|
| 3 | Local governments | 7/31/2018 7:13 PM |
| 4 | There is no entity assigned yet specifically for weighbridges. | 7/30/2018 4:12 PM |
| 5 | Accredited Persons / Trading Standards Officers | 7/23/2018 12:01 PM |
| 6 | STAMEQ | 7/19/2018 4:11 PM |
| 7 | National Metrology Center (NMC) | 7/13/2018 2:31 PM |
| 8 | Measurement Canada | 6/22/2018 4:29 AM |
| 9 | Bureau of Standards, Metrology and Inspection | 6/21/2018 2:07 PM |
| 10 | National Measurement Institute (Assumed this question was for weighbridges) | 6/19/2018 12:03 PM |

Q4 Currently weighbridges in your economy are

Answered: 10 Skipped: 0

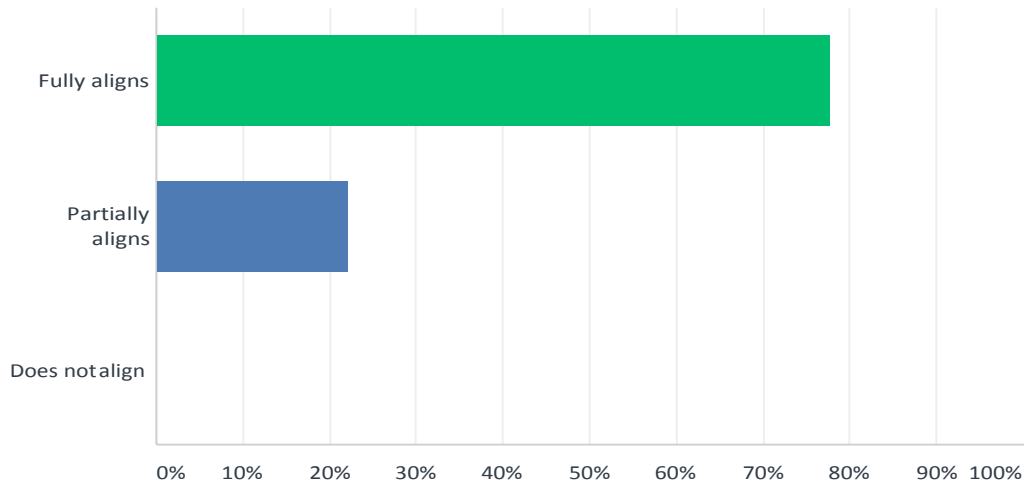


| ANSWER CHOICES | RESPONSES | |
|---|-----------|----|
| Currently verified | 80.00% | 8 |
| Intend to verify weighbridges within 5 years | 20.00% | 2 |
| Weighbridges will not be verified in this economy | 0.00% | 0 |
| TOTAL | | 10 |

Q5 TEST SETUP Check the certificate of approval Check the dataplate is properly inscribed

Answered: 9 Skipped: 1

Survey on the test procedure for verification of weighbridges using substitution



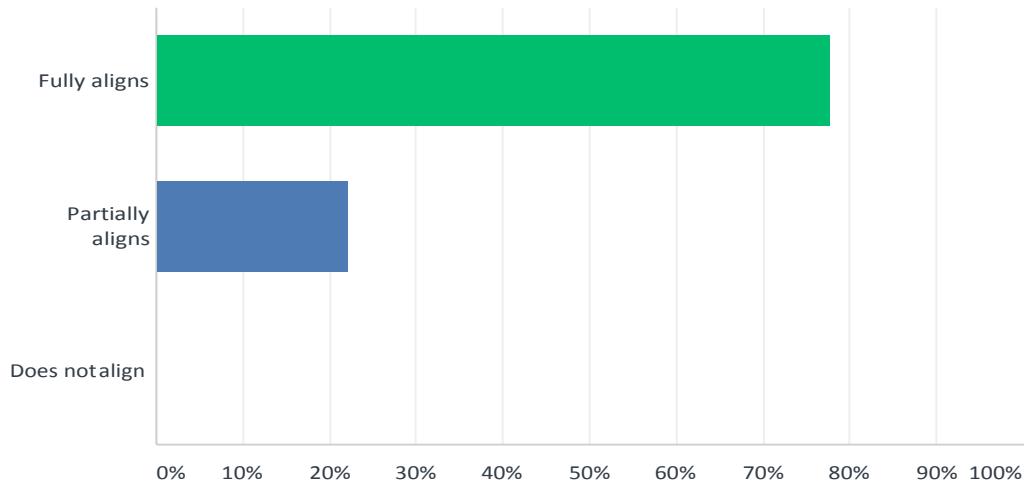
| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|---|
| Fully aligns | 77.78% | 7 |
| Partially aligns | 22.22% | 2 |
| Does not align | 0.00% | 0 |
| TOTAL | | 9 |

| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|-------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |

Q6 TEST SETUPDetermine: maximum capacity verification scale interval “e” number of supports points (load cells) quantity of working standards available (use min 20% of max) quantity and type of substitution material available. optimum and practical position of loads (substitution and standard masses) on the platform

Answered: 9 Skipped: 1

Survey on the test procedure for verification of weighbridges using substitution



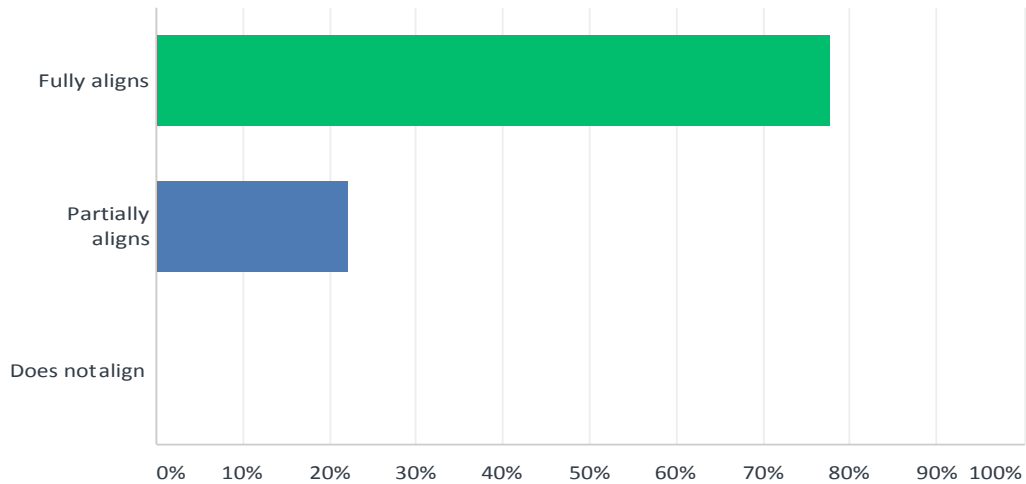
| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|---|
| Fully aligns | 44.44% | 4 |
| Partially aligns | 55.56% | 5 |
| Does not align | 0.00% | 0 |
| TOTAL | | 9 |

| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|-------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 2 | Minimum requirement in NZ for test standards to verify high capacity instruments is 10 x 1000kg masses | 7/23/2018 4:20 PM |
| 3 | minimum quantity of working standards for high capacity scales: * 10% of max capacity, but never less than 10000kg, when max cap. is between 0 and 100000 kg; * 20000 kg when max cap. is between 100 000 kg and 200 000 kg; * 10 % of max capacity whenever above 200000 kg. Special case: train scale require 30 000 kg or 10% of max., whichever is greater. | 6/22/2018 7:34 AM |

Q7 TEST SETUP Determine loads required for weighing performance with a minimum of 5 up and 3 down. Include min, max and MPE change points and substitution points. Work out where the loads will be positioned during testing

Answered: 9 Skipped: 1

Survey on the test procedure for verification of weighbridges using substitution



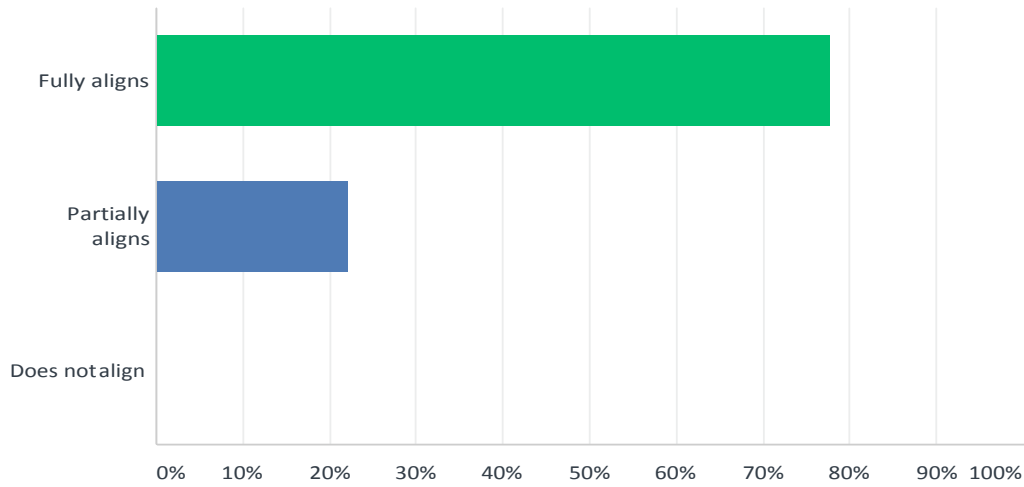
| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|----------|
| Fully aligns | 55.56% | 5 |
| Partially aligns | 44.44% | 4 |
| Does not align | 0.00% | 0 |
| TOTAL | | 9 |

| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|-------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |

Q8 TEST SETUP Determine the load for eccentricity test. $1/(n-1)$. e.g. 40 t WB with 6 load cells = 8 t of load, close to the value of a fork lift. Divide the platform into equal sections based on the number of load cells. Fork lift is suitable for eccentricity as the load must fit between boundaries for each section.

Answered: 9 Skipped: 1

Survey on the test procedure for verification of weighbridges using substitution



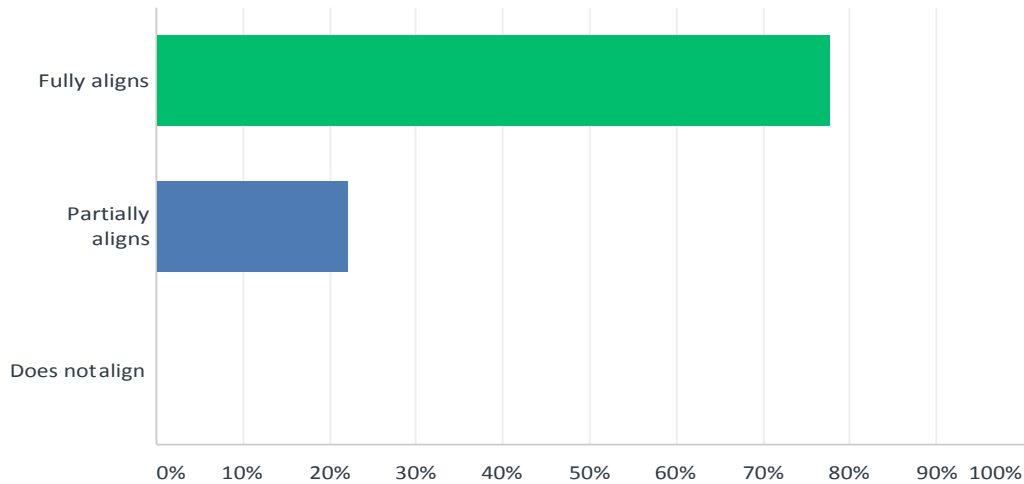
| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|----------|
| Fully aligns | 44.44% | 4 |
| Partially aligns | 44.44% | 4 |
| Does not align | 11.11% | 1 |
| TOTAL | | 9 |

| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|--------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 2 | Australia has some specific requirements for the use of a forklift or similar for eccentricity testing and it is only a screening test. If an error is identified using the forklift then masses must be used. | 6/19/2018 12:21 PM |

Q9 TEST SETUP Determine the load for repeatability (2/3 max or 0.8 max) If a truck is used for substitution this can be used forrepeatability load.

Answered: 9 Skipped: 1

Survey on the test procedure for verification of weighbridges using substitution



| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|----------|
| Fully aligns | 33.33% | 3 |
| Partially aligns | 55.56% | 5 |
| Does not align | 11.11% | 1 |
| TOTAL | | 9 |

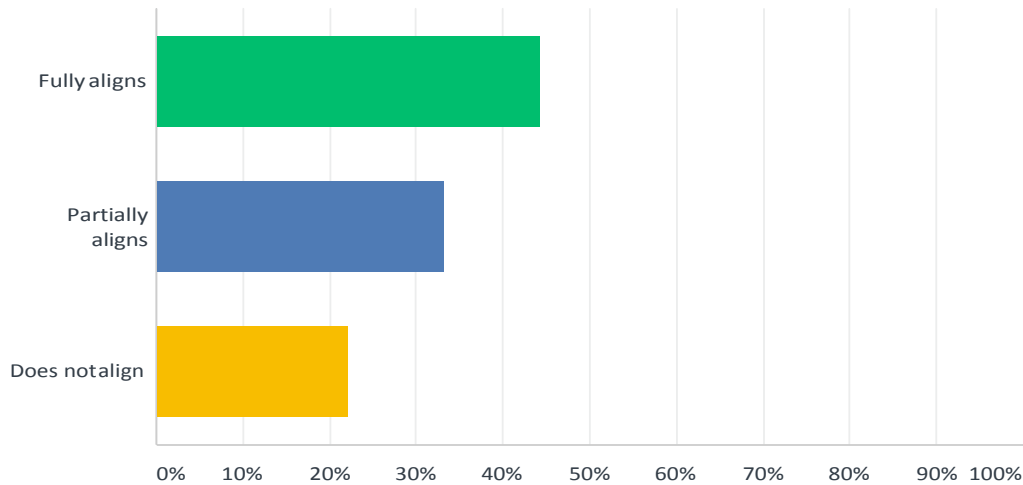
| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|--------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 2 | repeatability tests in NZ are done to meet legislative requirements of : 1 set of 3 weighing's at 40% to 60% of half maximum capacity 1 set of weighings at Max ,to Max - 10% | 7/23/2018 4:20 PM |
| 3 | repeatability can be done with a load between 25% and 50% of max cap. It's ok to use substitution truck for repeatability. | 6/22/2018 7:34 AM |
| 4 | Repeatability on a weighbridge is completed at 2/3 max capacity not 0.8 of maximum capacity | 6/19/2018 12:21 PM |

Q10 DETERMINING THE VALUE OF THE SUBSTITUTION

LOAD Method A – value within 1 tonne or 10%(a) Calculate the error in the weighbridge (E) for the load applied using: $E = I + 0.5e - DL - L$ (b) Remove the standard weights and DL. For electronic instruments make sure that a suitable load (e.g. 10e) is left on the load receptor to avoid zero-tracking. (c) Add substitution material until the indication (I_{sub}) is within -10% or $-1 t$, whichever is smaller, of the standard weights applied previously. The substitution material should be placed as close as possible to the same position on the load receptor. (d) Record the indication for the substitution load (I_{sub}). (e) Add additional standard weights of $0.1e$ until the indication changes up and stabilises. Leave these additional standard weights (DL) with the substitution load. (f) Calculate the actual mass of the substitution load (L_{sub}) using the

formula: Note: The error may be positive or negative.(g) Use L_{sub} plus standard weights to make the next load required for this test.

Answered: 9 Skipped: 1



| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|---|
| Fully aligns | 44.44% | 4 |
| Partially aligns | 33.33% | 3 |
| Does not align | 22.22% | 2 |
| TOTAL | | 9 |

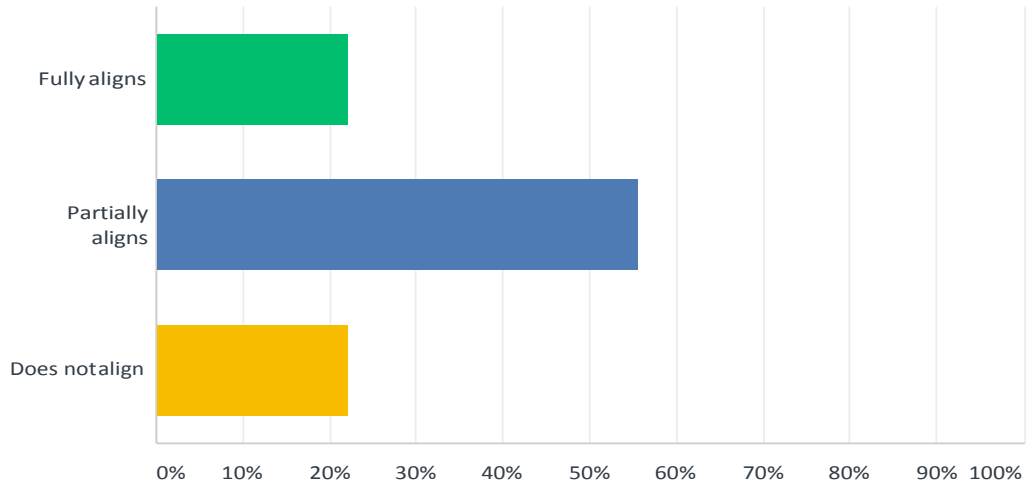
| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|-------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 2 | only method B for substitution | 6/22/2018 7:34 AM |

Q11 DETERMINING THE VALUE OF THE SUBSTITUTION

LOAD Method B – exact value(a) Remove the standard weights. For electronic instruments make sure that a suitable load (e.g. 10e) is left on the load receptor to avoid zero-tracking.(b) Leave DL on the load receptor(c) Replace the standard weights with substitution material. The substitution material should be placed as close as possible to the same position on the load receptor. Continue to add substitution material to the substitution load in sufficiently small increments ($\leq 0.1e$) until the indication changes up and stabilises at the same indicated value determined previously.(d) Remove DL. The substitution material (L_{sub}) will then be equal to the standard weights (L) it is replacing, i.e. $L_{sub} = L$. (e) Use L_{sub} plus standard weights to make the next load required for

Survey on the test procedure for verification of weighbridges using substitution
this test.

Answered: 9 Skipped: 1



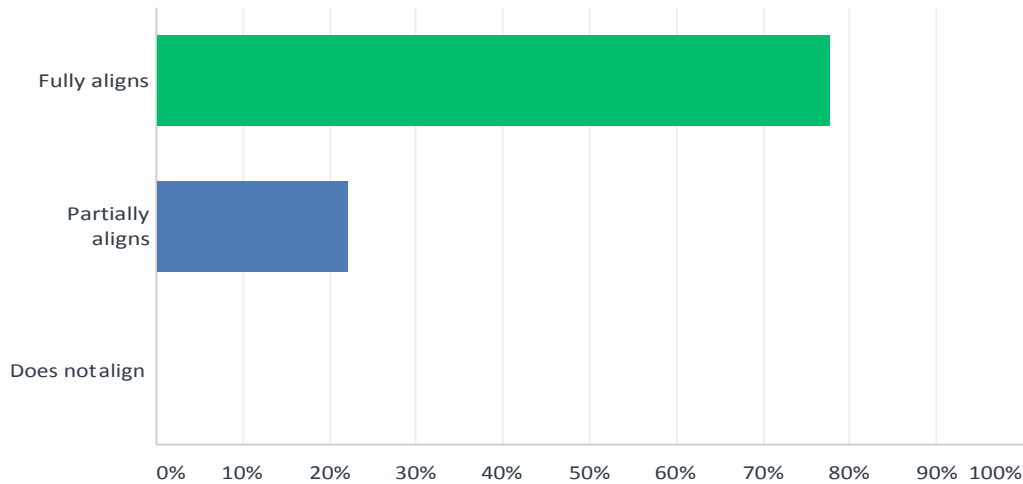
| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|----------|
| Fully aligns | 22.22% | 2 |
| Partially aligns | 55.56% | 5 |
| Does not align | 22.22% | 2 |
| TOTAL | | 9 |

| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|--------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 2 | This method is not used , only method A | 7/23/2018 4:20 PM |
| 3 | This is the substitution procedure we use but we don't typically use it for weighbridge | 6/22/2018 7:34 AM |
| 4 | The procedure described here has not used masses or other material to bring the electronic indication to a change point when the reference standard masses are on the weighbridge. | 6/19/2018 12:21 PM |

Q12 VISUAL INSPECTION Carry out a visual inspection

Answered: 9 Skipped: 1

Survey on the test procedure for verification of weighbridges using substitution



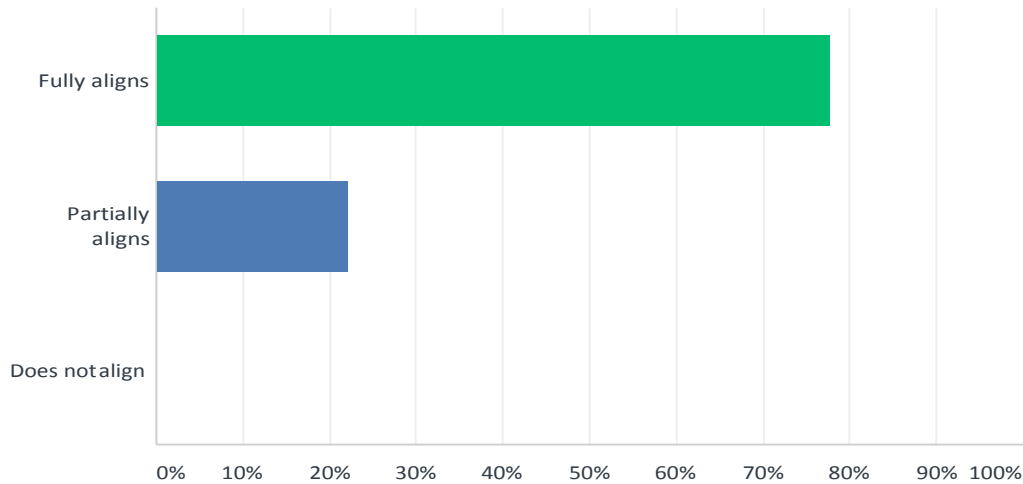
| ANSWER CHOICES | RESPONSES |
|------------------|-----------|
| Fully aligns | 77.78% 7 |
| Partially aligns | 22.22% 2 |
| Does not align | 0.00% 0 |
| TOTAL | 9 |

| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|-------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |

Q13 ZERO1. Activate the zero-setting device.(a) Load the instrument using a standard weight that is within the zero-setting range (this range varies between 0 to 4% of Max, in most cases this is $\pm 2\%$ around zero).(b) Add additional standard weights to take the total load just below the next changeover point.2. Re-set the indication to zero using the zero-setting device.3. Apply a suitable load (e.g. 10e) to the load receptor to avoid zero-tracking.4. Apply an additional 0.25e. If the indication:- remains unchanged, go to step 5;- changes and stabilises at +1e from the original indication: FAIL5. If the indication remains unchanged in step 4, apply an additional 0.5e. If the indication:- changes and stabilises at +1e from the original indication: PASS.- remains unchanged: FAIL

Answered: 9 Skipped: 1

Survey on the test procedure for verification of weighbridges using substitution



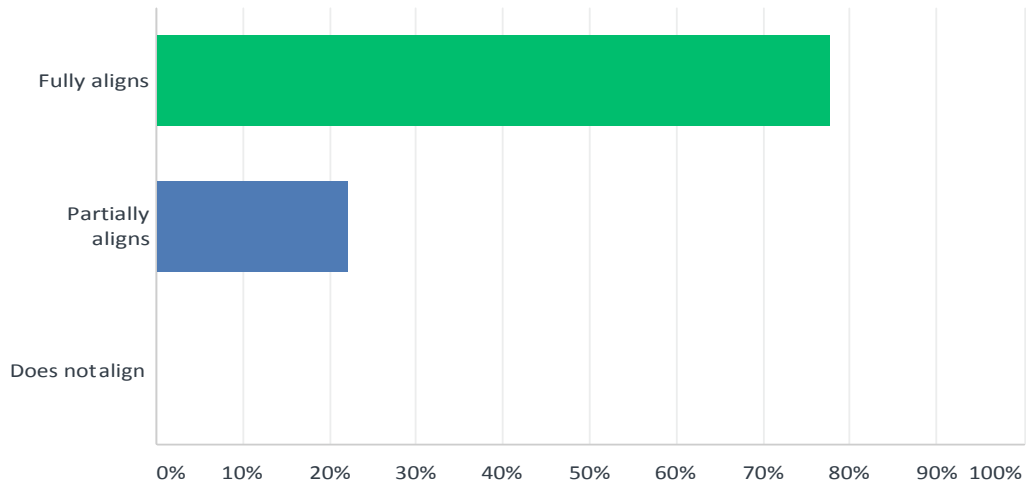
| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|----------|
| Fully aligns | 22.22% | 2 |
| Partially aligns | 66.67% | 6 |
| Does not align | 11.11% | 1 |
| TOTAL | | 9 |

| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|--------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 2 | we have 5 different zero setting mechanism test procedures. This proposed procedure is an hybrid of a few of them. | 6/22/2018 7:34 AM |
| 3 | Australia applies an additional check to determine if the zero tracking exceeds +/- 0.5 e | 6/19/2018 12:21 PM |

Q14 ZERO TARE1. Activate the zero-setting device.(a) Load the instrument a weight that is within the tare setting range.(b) Add additional standard weights to take the total load just below the next changeover point.2. Re-set the indication to zero using the tare-setting device.3. Apply a suitable load (e.g. 10e) to the load receptor to avoid zero-tracking.4. Apply an additional 0.25e. If the indication:-
 remains unchanged, go to step 5;- changes and stabilises at +1e from the original indication: FAIL5. If the indication remains unchanged in step 4, apply an additional 0.5e. If the indication:- changes and stabilises at +1e from the original indication: PASS.- remains unchanged: FAIL

Answered: 9 Skipped: 1

Survey on the test procedure for verification of weighbridges using substitution



| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|----------|
| Fully aligns | 44.44% | 4 |
| Partially aligns | 33.33% | 3 |
| Does not align | 22.22% | 2 |
| TOTAL | | 9 |

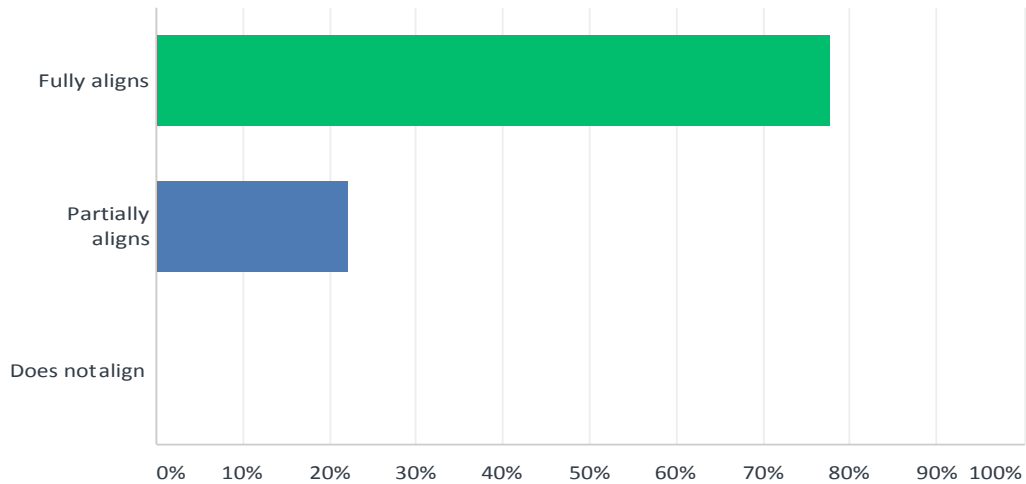
| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|-------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |

Q15 DISCRIMINATION

1. Zero the instrument.
2. Apply a load to the load receptor.
3. Apply additional standards weights of 0.1e until the indication changes up and stabilises.
4. Record this indication.
5. Gently apply a load of 1.4e. The indication should increase by 1e to the next scale interval.
6. Determine whether the instrument has passed or failed

Answered: 9 Skipped: 1

Survey on the test procedure for verification of weighbridges using substitution



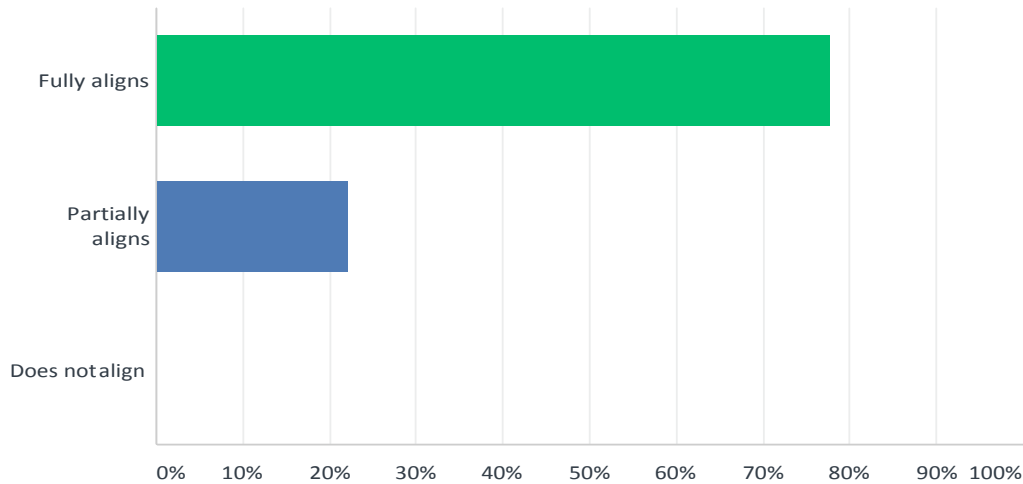
| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|---|
| Fully aligns | 44.44% | 4 |
| Partially aligns | 44.44% | 4 |
| Does not align | 11.11% | 1 |
| TOTAL | | 9 |

| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|--------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 2 | This procedure is only applicable to digital indicating instruments. There are different discrimination tests for non-self-indicating and analogue instruments. | 6/19/2018 12:21 PM |

Q16 REPEATIBILITY1. Drive the substitution load on to the weighbridge and record the indication. 2. Determine the position (P) by adding small weights (delta loads) $P = I + 0.5e - DL3$. Repeat step 2 twice more4. Check if the difference between any two readings is within the absolute value of the MPE.

Answered: 9 Skipped: 1

Survey on the test procedure for verification of weighbridges using substitution



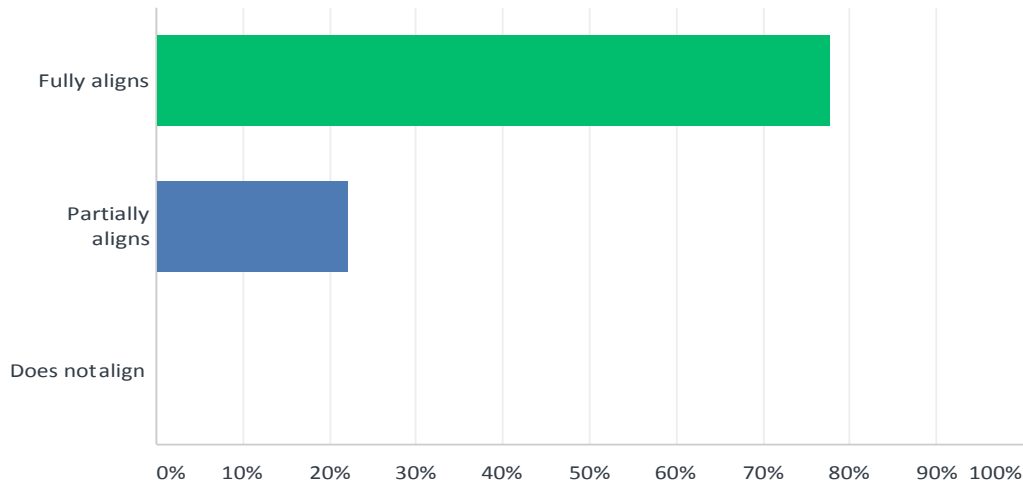
| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|----------|
| Fully aligns | 66.67% | 6 |
| Partially aligns | 33.33% | 3 |
| Does not align | 0.00% | 0 |
| TOTAL | | 9 |

| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|--|-------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 2 | In Canada, the device meets the requirements if the difference between the results obtained for the same load does not exceed the absolute value of the in-service limits of error for that load. The reading is taken from the indicator. No calculation required. Each individual result must also be within the prescribed limits of error. | 6/22/2018 7:34 AM |

Q17 ECCENTRICITY Using Forklift as the load
 1. Placing standards weights equal to or greater than the weight of the forklift, provided it is within 0.3 t.
 2. Use method A above to determine the value of forklift.
 3. Drive forklift over each section recording the indication.
 4. Determine if each section is within MPE

Answered: 9 Skipped: 1

Survey on the test procedure for verification of weighbridges using substitution



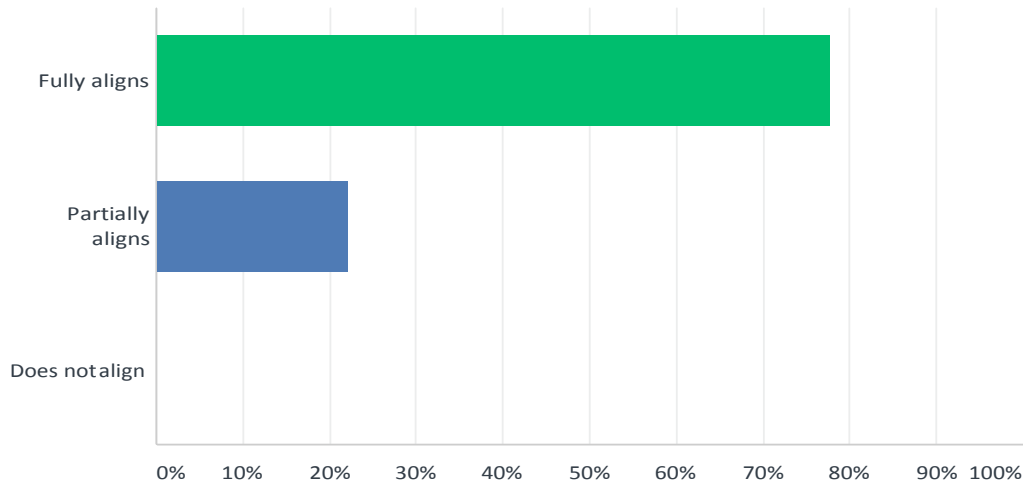
| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|---|
| Fully aligns | 44.44% | 4 |
| Partially aligns | 33.33% | 3 |
| Does not align | 22.22% | 2 |
| TOTAL | | 9 |

| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|--|--------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 2 | 0,3 ton is not sufficient to test eccentricity (sections) of a weighbridge. We try to get a load around 50% of capacity. Interpretation of results also differs: The difference between the results for different positions of the load must not exceed the absolute value of the in-service limit of error for that load. Each individual result must also be within the applicable limits of error for the test. | 6/22/2018 7:34 AM |
| 3 | Australia has some specific requirements for the use of a forklift or similar for eccentricity testing and it is only a screening test. If an error is identified using the forklift then masses must be used. | 6/19/2018 12:21 PM |

Q18 ACCURACY1. Apply either standard weights or substitution materials at each load point determined earlier.
2. Determine the error at each load.
3. Determine if each indication is within MPE
 For a 60 t weighbridge with 20 t of standard weights and e value of 20 kg
 Example of suitable test points
 Min = 400 kg standard weights
 10 t = standard weights
 20 t = standard weights
 20 t substitution 1 (truck)
 40 t = substitution 1 + 20 t standard weights
 40 t substitution 2 (2 trucks)
 60 t = substitution 2 + 20 t standard weights

Answered: 8 Skipped: 2

Survey on the test procedure for verification of weighbridges using substitution



| ANSWER CHOICES | RESPONSES | |
|------------------|-----------|----------|
| Fully aligns | 50.00% | 4 |
| Partially aligns | 37.50% | 3 |
| Does not align | 12.50% | 1 |
| TOTAL | | 8 |

| # | NONE OF ABOVE (PLEASE SPECIFY) | DATE |
|---|---|--------------------|
| 1 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 2 | Because TS NZ have a minimum requirement of 10T for testing weighbridges we would generally have 1 more substitution load for the example capacity of 60Tkg. Test points , min , 500e , 1500e (for n=3000 instruments) 2000e , Max , Max +10e | 7/23/2018 4:20 PM |
| 3 | These loads would also be used for decreasing load test at three points | 6/19/2018 12:21 PM |

Q19 Please detail any additional test required

Answered: 3 Skipped: 7

| # | RESPONSES | DATE |
|---|---|--------------------|
| 1 | None | 7/31/2018 7:49 PM |
| 2 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 3 | There is an additional sensitivity test for non-self indicating instruments such as a steelyard. | 6/19/2018 12:21 PM |

Q20 Additional comments

Answered: 3 Skipped: 7

Survey on the test procedure for verification of weighbridges using substitution

| # | RESPONSES | DATE |
|---|---|-------------------|
| 1 | In Japan, we conduct only initial verification and verification of repaired weighbridges. Periodical verification is replaced with periodical inspection. We provided replies only for verification. | 7/31/2018 7:49 PM |
| 2 | The Philippines will be implementing the ASEAN NAWI Guidelines which aligned to OIML R76. The National Metrology Laboratory has the knowledge and capacity to train authorities and verifiers on verification of weighbridges, however the Philippines does not conduct verification of weighbridges at the moment. | 7/30/2018 4:26 PM |
| 3 | Our technical staffs are really skillful in this area. We need more training courses. | 7/13/2018 2:38 PM |