



ASEAN
NCAP
www.aseancap.org

ASEAN NCAP PROTOCOL



2021
2025

VEHICLE SELECTION,
SPECIFICATION, TESTING AND
RETESTING

Version 1.0
November 2019

Preface

Where text is contained within square brackets this denotes that the procedure being discussed is currently being trialled in ASEAN NCAP. Its incorporation in the Test Protocol will be reviewed at a later date.

During the test preparation, vehicle manufacturers are encouraged to liaise with the laboratory and to check that they are satisfied with the way cars are set up for testing. Where a manufacturer feels that a particular item should be altered, they should ask the laboratory staff to make any necessary changes. Manufacturers are forbidden from making changes to any parameter that will influence the test, such as dummy positioning, vehicle setting, laboratory environment etc.

It is the responsibility of the test laboratory to ensure that any requested changes satisfy the requirements of ASEAN NCAP. Where a disagreement exists between the laboratory and manufacturer, the ASEAN NCAP secretariat should be informed immediately to pass final judgement. Where the laboratory staff suspect that a manufacturer has interfered with any of the setup, the manufacturer's representatives should be warned that they are not allowed to do so themselves. They should also be informed that if another incident occurs, they will be asked to leave the test site.

Where there is a recurrence of the problem, the manufacturer's representatives will be told to leave the test site and the Secretariat should be immediately

informed. Any such incident may be reported by the Secretariat to the manufacturer and the persons concerned may not be allowed to attend further ASEAN NCAP tests.

DISCLAIMER: ASEAN NCAP has taken all reasonable care to ensure that the information published in this protocol is accurate and reflects the technical decisions taken by the organisation. In the unlikely event that this protocol contains a typographical error or any other inaccuracy, ASEAN NCAP reserves the right to make corrections and determine the assessment and subsequent result of the affected requirement(s).

In addition to the settings specified in this protocol, the following information will be required from the manufacturer of the car being tested in order to facilitate the vehicle preparation. A vehicle handbook should be provided to the test laboratory prior to the assessment.

VEHICLE SELECTION, SPECIFICATION, TESTING AND RETESTING PROTOCOL

Table of Contents

1 INTRODUCTION	2
2 THE ASSESSMENT YEAR	3
3 SPONSORSHIP AND MODEL NOMINATION	3
4 SPECIFICATION OF TEST VEHICLES	4
5 VEHICLE SELECTION AND STATUS OF TEST VEHICLE	6
6 TESTING, RETESTING AND REASSESSMENT...	12
7 PUBLICATION OF RESULTS	16
APPENDIX.....	20

**NEW CAR ASSESSMENT PROGRAM FOR
SOUTHEAST ASIAN COUNTRIES
(ASEAN NCAP)**

**VEHICLE SELECTION, SPECIFICATION,
TESTING AND RETESTING PROTOCOL**

1 INTRODUCTION

This document shall explain ASEAN NCAP's procedures in regard to the sponsorship, nomination and selection of vehicle models to be assessed by ASEAN NCAP. In addition, it shall provide the details regarding the specification of vehicles to be tested, their testing arrangements, the circumstances when retesting is allowed and the rules of publication.

1.1 Definitions

1.1.1 In this document, frequent references are made to terms including model release date, variant, model range, safety equipment, etc. A list of definitions for these terms in regard to the protocol can be found in the Appendix.

1.1.2 'The market' refers to all current Member States of the Association of South East Asian Nations or ASEAN, namely Brunei, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

2 THE ASSESSMENT YEAR

The Assessment Year is defined as the calendar year in which the rating is first published by ASEAN NCAP, if the result is being republished.

3 SPONSORSHIP AND MODEL NOMINATION

Vehicle manufacturers often wish to sponsor a vehicle so that the results may be published at a preferred time, such as the vehicle's public launch. ASEAN NCAP applies a set of rules to address the most common situations where conflicts may occur.

3.1 ASEAN NCAP Preconditions

3.1.1 Vehicle models can be nominated for inclusion in ASEAN NCAP's assessment program by an ASEAN NCAP Member, a vehicle manufacturer or any third party. By nominating a model, the party agrees to accept the costs related to the assessment and publication of the result.

3.1.2 Subject to 3.1.3, any vehicle model currently sold in Southeast Asian countries can be nominated.

No consideration is given to:

- Sales volume;
- Method of type-approval (whole vehicle, low volume, etc.).

3.1.3 Vehicles that have a valid rating cannot be nominated, except in the case of re-assessment (see 6.3).

3.1.4 The choice of vehicle model to be assessed by ASEAN NCAP shall be made by the sponsor.

3.2 Manufacturer Sponsored Models

3.2.1 Where a third party wishes to sponsor the testing of any vehicle model already nominated by a manufacturer, the manufacturer will have the first right.

3.2.2 Up to 12 months before the model release date, the manufacturer has exclusive rights to sponsor the testing of that vehicle. Once the formal agreement to sponsor the vehicle is made, it cannot be cancelled and the manufacturer is obliged to inform ASEAN NCAP of any changes in the model release date.

3.3 Third Party Sponsored Models

3.3.1 Where a third party (for example an organization wishing to sponsor the testing of a vehicle or vehicle type that is of particular relevance to its activities) wishes to sponsor the testing of a vehicle model already nominated by a manufacturer or Member, the manufacturer or Member will have the first right.

4 SPECIFICATION OF TEST VEHICLES

Although different vehicle variants may offer different levels of protection, it is not always possible for ASEAN NCAP to rate all variants of a vehicle model available in Southeast Asian countries individually. The star rating is

intended to represent the lowest safety specification. For this reason, the test variant of the model is derived from manufacturers' data that includes model range availability and safety equipment fitted in Southeast Asian countries.

ASEAN NCAP reserves the right of final choice of test variant for vehicles included in its test programme.

4.1 Basic Level Safety

4.1.1 The base test variant will have Basic Level Safety Equipment. The Basic Level will comprise items that are fitted as standard across the model range. Only safety equipment which is part of the Basic Level will be eligible for assessment and may contribute towards the scoring of the vehicle.

4.1.2 Notwithstanding paragraph 4.1.1, some protocols also consider equipment that does not qualify as Basic Level Safety Equipment. This might apply, for example, where optional equipment might compromise the ability of the vehicle to accommodate certain occupants in certain positions (e.g. optional front passenger airbag), or where optional equipment is relevant to a full assessment of the vehicle (e.g. optional third row seats).

4.1.3 The Basic Level will be determined as follows. The manufacturer will be asked to complete an OEM form, which will be supplied by ASEAN NCAP. In the form, the manufacturer must identify all safety equipment items

available in the model range and state whether they are standard on all variants or optional on some.

5 VEHICLE SELECTION AND STATUS OF TEST VEHICLE

To ensure that the rating remains credible at all times, it is essential that all vehicles selected for testing are exactly the same as those vehicles offered for sale to consumers. Ideally this means that test vehicles are taken from the production line. Many times, however, this is conflicting with the manufactures' time line where ratings must be available at model release date and small adjustments to production are made during ramp up of production. The following provides guidance on these matters.

5.1 Status of Test Vehicle

5.1.1 The vehicles tested must be of the same production status as for those offered for sale to consumers at or before the time of publication of the new result.

5.1.2 The method of procuring test vehicles of the correct specification will be decided by ASEAN NCAP. The vehicles selected for testing must be:

Fully type-approved (i.e. a certificate of conformity should be available for the vehicles, if requested) from serial production.

Capable of being legally sold, new or in the aftermarket, to the general public without modification

Selected at random.

Note: New models are generally produced in a small number during the early stages of production (“ramp-up”), leading to full-volume production within a few months. Vehicles from such early production phases are acceptable, so long as they comply with the requirements set out above.

5.1.3 The manufacturer may advise ASEAN NCAP that a vehicle scheduled for testing will have certain safety components changed prior to the expected publication date. Where this happens, the updated components may be retrofitted to the test vehicles, provided the following requirements are met:

- The components are installed to the same standard as used in production.
- The components are manufactured using production procedures. Prototype components are not allowed.
- Where the component has to be certified by an approval authority, such a certification has been produced.

Once a vehicle has been tested, assessment and testing of modified components are subject to the requirements of section 6.2.

5.2 Fitment of Non-Standard Components

5.2.1 The fitment of prototype components, or any parts not fitted to mainstream production vehicles, is not allowed, whether safety-related or not. Where non-standard or prototype components are thought to have been fitted to any of the vehicles tested (e.g. ‘sample’ or ‘prototype’ labels are found during inspection), the following will apply:

Selection using the 20 VIN method will not be allowed for the next two vehicle models from the manufacturer concerned. Selection by other methods will be required (selected from dealer stock, plant visit etc.) and will be done no sooner than [1] month after customers first take delivery of cars.

ASEAN NCAP may carry out an audit of the production plant to understand the cause of the anomalous parts or labels.

The manufacturer may be required to sponsor one or more audit tests. These will be repeats of at least one of the main impact tests using vehicles known to have come from mainstream production. The results of the tests will be compared with the original results. Guidance regarding audit testing and the use that is made of the results are given in section 5.2.2.

The star rating will not be published until the results of the audit test are known. If this delays publication of the rating

to the following calendar year, the manufacturer will be required to sponsor any additional or repeat testing that may be needed to generate a valid rating for that following year.

Where the manufacturer does not agree to sponsor testing of the standard specification vehicle, its testing may be sponsored by ASEAN NCAP and the presence of prototype components will be published.

5.2.2 It is not possible to foresee every circumstance in which ASEAN NCAP may need to repeat tests in order to confirm results and vehicle ratings. The following is intended as a guide to when audit tests are likely to be required and the use that will be made of the results of those tests.

5.2.3 The need for an audit test depends on the method by which the original test vehicles were obtained. Where cars were originally selected from a list of VINs supplied by the manufacturer or selected in person from a limited number of pre-prepared cars, the need for an audit test will be considered high in any of the circumstances outlined in section 5.2.1. Where cars were bought anonymously from dealers, the need for an audit test will be considered low. In other cases, consideration will be given to the methods used and the possibility of interference by the OEM with the test vehicles.

5.2.4 Audit tests may be required even if the labels found are not on safety-specific components. The presence of

labels stating, for example, ‘prototype’ or ‘sample’ throws into question the production status of the vehicles, regardless of the specific components on which they are found.

Where labels have been found on a safety-related component, an audit test may be required for the crash configuration to which that component relates (e.g. frontal impact tests where a label has been found on the driver’s frontal airbag). However, it may also be necessary to perform audit tests in other configurations not directly related to the safety function of the labelled component if, for example, there is reason to question the broader production status of the original test vehicles.

5.2.5 Cars for audit testing will be obtained either:

- From a dealer

- From pre-built stock vehicles (e.g. at a distribution centre)

- From a production line

All cars must be transported immediately to the test laboratory.

5.2.6 Where possible, the test laboratory for the audit test shall be the same one used for the original tests.

5.2.7 Where an audit test has been performed, the results will be compared with those of the original tests.

The following will apply:

The original test results will be used if the audit test shows:

Scores for all adult body-regions and relevant child dynamic scores no poorer than $0.85 \times$ original test result, and

No differences in structural behaviour or safety equipment performance (such as door opening, incorrect airbag deployment etc.) from the original test.

It will be concluded that a non-production component was used in the original test and the results of the audit test will be published where the audit test shows:

A score for an adult body-region relevant to the suspect component (or the relevant child dynamic score) less than $0.85 \times$ original test result and all other values are within 15% of the original, or

Differences in relevant structural behaviour or relevant safety equipment performance (such as door opening, incorrect airbag deployment etc.) from the original test.

Where the score for an adult body-region relevant to the function of the suspect component (or the relevant child dynamic score) is within 85% of the original test result but an unrelated body region differs by more than 15%, or where a safety issue has been found which is or is not related to the original reason for the audit test, the

requirements governing re-testing will be applied (section 6.2). Where a manufacturer does not comply with these rules, the result of the audit test will be published. Where a manufacturer chooses to improve the performance of the vehicle, publication of a result will be postponed until the modified vehicle can be tested and a valid rating established.

Note: The fitment of non-standard components is not the only reason for which audit tests may be conducted. Audit tests may be conducted on any make or model at any point in the life of a vehicle or its existing rating, as determined by ASEAN NCAP.

6 TESTING, RETESTING AND REASSESSMENT

6.1 Testing

6.1.1 ASEAN NCAP will be ultimately responsible for choosing the test laboratory for all vehicles. A vehicle will be tested at the laboratory chosen by the sponsor unless there are compelling reasons to do otherwise. Such reasons could include cost or operational factors influencing the timing of publication or over-use of a single laboratory by the same manufacturer.

6.1.2 All tests will be carried out according to the latest protocols published on ASEAN NCAP's website. The laboratory is responsible for accurate application of the protocols and keeping test equipment up to date.

6.1.3 Before each test, the laboratory must check that the vehicles and other components scheduled for testing meet the vehicle test specification (see 4.2). Testing of vehicles that do not meet the test specification may invalidate the result and lead to retesting at the expense of the laboratory.

6.1.4 The ASEAN NCAP Steering Committee will approve the accreditation of the crash laboratory used for ASEAN NCAP test. This approval will be based on the recommendation from ASEAN NCAP Technical Committee (refer Guideline for Crash Laboratory Selection Version 2.0).

6.2 Retesting

6.2.1 In some cases, a retest may be requested or be allowed under the following circumstances:

Where a test does not meet ASEAN NCAP Test Protocol requirements it will be repeated unless the failure does not materially affect the rating of the vehicle.

Where the failure is the responsibility of the test laboratory, they shall be responsible for carrying out the retest without charge.

The responsibility for funding the replacement vehicle and components is that of the test's sponsor.

Modification and retesting are allowed if an Unexpected or Undesired Vehicle Performance problem is identified at an ASEAN NCAP test carried out not later than four months

from the test date. In such cases, the following conditions must be met for a re-test to be allowed:

The manufacturer has identified deficiencies and can satisfy ASEAN NCAP and inspectors that the proposed modifications will significantly improve safety.

The improvement will be incorporated in all production vehicles by the time ASEAN NCAP publishes its assessment of the vehicle.

By an official recall or by equivalent market action acceptable to ASEAN NCAP, the manufacturer has the provision to update all vehicles already in use in Southeast Asia. This includes vehicles which have not been offered for sale to the public but have been provided on loan to the press, management etc. The recall must be specific to the identified problem and must be initiated by the time the assessment is published.

The results of the retested vehicles are available prior to the vehicle being first offered for sale in Southeast Asian countries.

Publication of the vehicle's assessment is not delayed by more than 3 months. The manufacturer shall fund all work related to the retest.

Note: Where there is a failure, or partial failure, of safety related equipment, ASEAN NCAP may withhold

publication of the test results, pending investigation of the failure.

6.3 Reassessment

6.3.1 A vehicle model which has previously been rated may be reassessed under one or other of the following circumstances:

A manufacturer wishes to have the vehicle reassessed to reflect changes which have been made to the performance of the vehicle. Reassessment in such circumstances is allowed if:

The result of the vehicle has not been re-calculated in the same calendar year;

The manufacturer can demonstrate that there has been a significant improvement to safety, either through better performance (e.g. improved knee protection or airbag response) or to fitment (e.g. standardisation of ESC)

Note: A vehicle model is not eligible for reassessment if, at all annual and facelift reviews, its original rating is considered valid for the current vehicle.

7 PUBLICATION OF RESULTS

7.1 General Guidelines

7.1.1 Under normal circumstances, once the vehicle has been tested and the data are available and verified, the results will be published by ASEAN NCAP. Manufacturers will not be able to propose further modifications leading to a retest and may not make use of the star rating, or refer to it, until the result has been published by ASEAN NCAP.

7.1.2 The rating with the details of the test vehicle specification will be published as part of the normal release schedule on the date agreed with the sponsor. ASEAN NCAP will publish the base star rating (and optional rating if available) and additional information (percentage scores, etc.) on its website.

7.1.3 ASEAN NCAP will inform the vehicle manufacturer in advance of the target date for publication of the result on the website. In general, this target date will be no later than two months from the date of arrival of test vehicles at the laboratory.

7.1.4 Where a vehicle has been retested, the following applies:

The rating will, if possible, be published as originally intended. If the original release date cannot be met, the result will be published as soon as possible after the

originally-intended launch date (but not delayed more than 3 months).

If all the above conditions are met and ASEAN NCAP is satisfied that no member of the public will receive a vehicle of the specification originally tested, ASEAN NCAP will not publish information about the problem identified or the manufacturer's actions. Where specific market action has been required by the manufacturer as part of the retest, ASEAN NCAP reserves the right to bring this to the attention of the consumer at the time of the publication of the result.

7.1.5 Where a vehicle has been re-assessed, the following applies:

The rating will be published as part of the normal release schedule.

The result of a reassessment will be published alongside the original rating, with a VIN identifying the first vehicle produced to which the new assessment applies. The original rating will identify, by means of a VIN, the final vehicle to which it applied.

7.1.6 Where an audit test is required, the following applies:

A vehicle's rating will not be published until the results of the audit test (including inspection) are known and demonstrate good correlation with the original test results.

The rating will be based on the original test data and published as part of the normal release schedule if the results of the audit test demonstrate that the performance difference is acceptable.

If the differences between the results of the audit test differ unacceptably from the original results, ASEAN NCAP may require that all relevant tests be repeated on vehicles whose production status is certain, and publication of the rating will be delayed.

ASEAN NCAP reserves the right to publish information about the presence of non-standard or prototype components.

7.2 Recalculation

7.2.1 ASEAN NCAP affords manufacturers the exclusive right to update a vehicle's rating to a later assessment regime (year) than was originally applied, based on the original test data.

7.2.2 The following conditions shall apply for recalculation:

ASEAN NCAP's assessment scheme has changed with respect to the original rules under which the car was rated.

The safety performance of the vehicle to which the new rating applies has not changed compared to the original tested model.

The original test data are not older than 3 years.

The vehicle to which the new rating applies will be on sale for at least two more years.

7.2.3 The requirements (threshold, balance values etc.) applicable to the year of recalculation will be used to recalculate the result.

7.2.4 By requesting a recalculation, the manufacturer agrees to sponsor the required tests.

7.2.5 The results of recalculations will be released at the first opportunity in the year.

APPENDIX

Definition

Model Range	All the variants (i.e. all body styles, engine and equipment grades) available across Southeast Asian countries under a common model name or designation
Minimum Percentage	The lowest proportion of sales, expressed as a percentage, which an item of safety equipment must meet as standard equipment to be included as part of the Basic Level equipment.
Model release date	The date set by the manufacturer at which a new vehicle is first being offered to consumers in any part of Southeast Asian Countries.
Reassessment	A new assessment by ASEAN NCAP of a vehicle which has previously been rated but has undergone a significant safety update. The re-assessed rating is based on all requirements (Minimum Percentage for Basic Level equipment, threshold, balance values etc.) applicable at the time of reassessment. Depending on the changes made to the vehicle, it may not be necessary to repeat all aspects of the assessment. The results of a re- assessment are published

	alongside the original rating.
Retest	A repeat of one or more parts of a vehicle's assessment which replaces the original result. The original invalid result is not published by ASEAN NCAP.
Safety Equipment	That equipment which is overtly aimed at improving safety. It includes but is not necessarily limited to: Restraint systems, including head restraints, child restraints and anchorages; Knee and leg protection; Breakaway pedal arrangements; Pedestrian friendly devices (unless they are only required for particular engine compartment packages); Seat belt reminder systems, Safety marking/labels and switches. Note: It does not include: Engine/transmission volume; Road wheel/tyre size, Sun roof, etc.
Variant	A unique combination of body style, engine and equipment grade or specification.

Editors

Ir. Dr. Khairil Anwar Abu Kassim (Adjunct. Prof)
Malaysian Institute of Road Safety Research (MIROS)

Yahaya Ahmad
Malaysian Institute of Road Safety Research (MIROS)

Mohd Hafiz Johari
Malaysian Institute of Road Safety Research (MIROS)

Salina Mustaffa
Malaysian Institute of Road Safety Research (MIROS)

Special Acknowledgement:

This protocol is based on Euro NCAP Vehicle Selection, Specification, Testing and Retesting (VSSTR) Version 7.0 which is the intellectual property of Euro NCAP. Permission is granted for this material to be shared for non-commercial and educational purposes. Copying of parts of the original text is by permission of Euro NCAP.



ASEAN NCAP PROTOCOL

2021 - 2025



**ASEAN
NCAP**
www.aseanncap.org

ASEAN NCAP

Ground Floor, Lot 127,
Jalan TKS 1,
Taman Kajang Sentral,
43000 Kajang,
Selangor, Malaysia.



+603-8924 9200 (ext. 425)



+603-8733 2005



enquiries@aseanncap.org



www.aseanncap.org



<https://www.facebook/AseanNcap>



<https://twitter.com/aseanncap>



<https://youtube.com/> (Search: ASEAN NCAP)



<https://www.flickr.com/photos/aseanncap/>