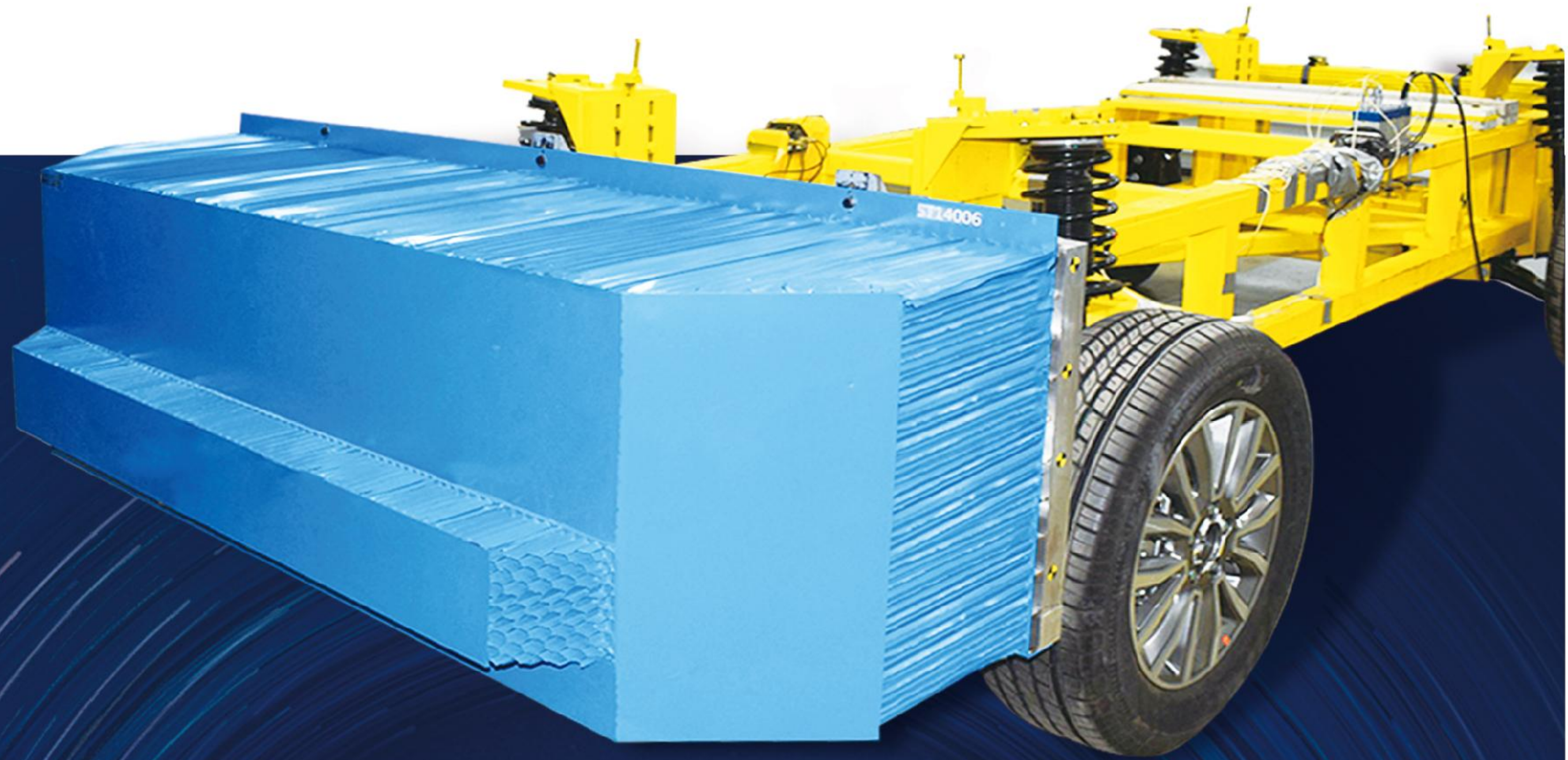




乾行达科技  
CANSINGA

TECCON  
heart of engineering



# Aluminum Honeycomb Barrier for Safety Test of New Vehicles

# Company Profile

Shenzhen CANSINGA Technology Co., Ltd, led by academicians of Chinese Academy of Engineering, is a national level specialized enterprise that produces cutting-edge products, also nicknamed “little giant”. We are committed to becoming the world’s leading provider of aluminum honeycomb materials and light-weight structural solutions. We provide aluminum honeycomb products and technology development services for new car evaluation, aerospace and maritime, national defense and military industry, rail transportation, automobile safety, transportation infrastructure, intelligent traffic safety and other fields. The products and services have covered more than ten countries and regions in the world, including Europe and the United States.

CANSINGA has successively won such honors as the National High-tech Enterprise, the Application Model Enterprise, the “little giant” Enterprise by the MIIT of the People’s Republic of China, China Patent Excellence Award, etc. Relying on the Academician Workstation, Postdoctoral Innovation Practice Base, Traffic Safety Protection Laboratory and other innovation carriers, CANSINGA has made efforts to build a diversified innovation platform. Taking the internationally leading safety protection technology as the goal, we have broken the monopoly of many foreign products and technologies.

In 2020, the Company completed round A financing and obtained the capital from China Merchants Group and Shenzhen High-tech Investment. The company has always adhered to the corporate mission of “making travel safer with scientific and technological innovation”, and is committed to becoming an outstanding company that contributes to the “zero death” of transportation.



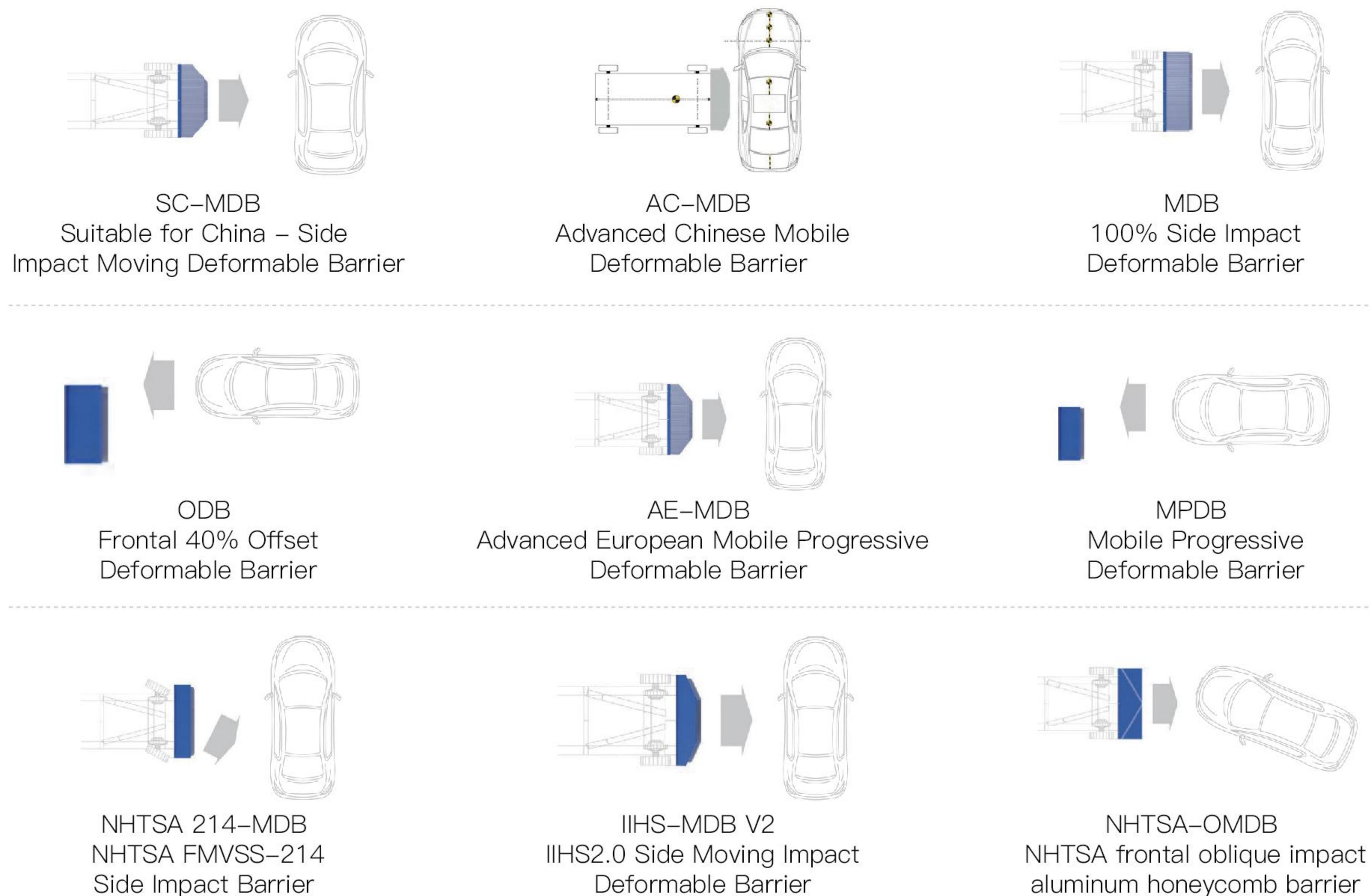
## Automotive Testing Aluminum Honeycomb Barrier Solution

The aluminum honeycomb barrier used for automotive testing is a material that simulates real collision scenarios, used to evaluate the passive safety performance of vehicles. It can absorb and dissipate collision energy, providing a controllable collision environment to assess the safety performance of new vehicles under different collision conditions.

Currently, Cansinga has designed a series of products, including the series of testing aluminum honeycomb barriers, RCAR low-speed collision bumper barriers for cars, dummy calibration honeycombs, high-energy bottom impact testers, and automotive undercarriage scraping test equipment.

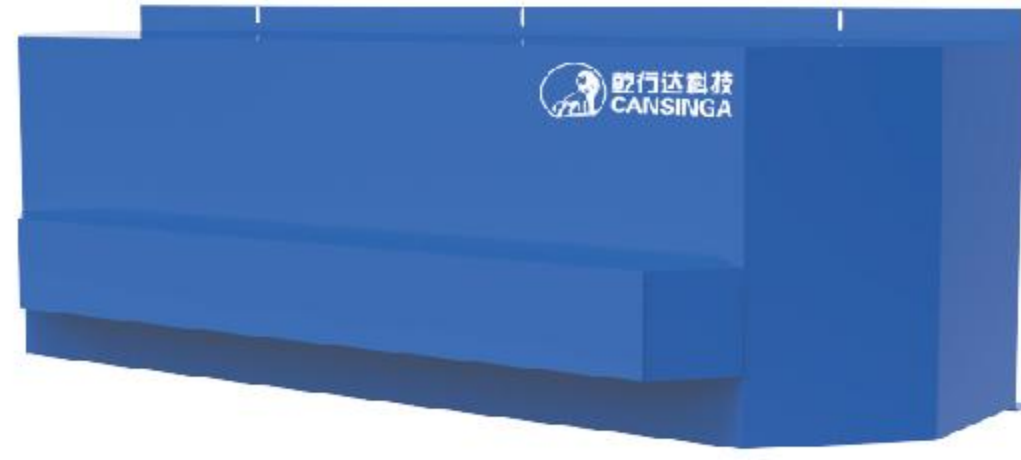


### New Car Safety Testing Aluminum Honeycomb Barrier Collision Scenario

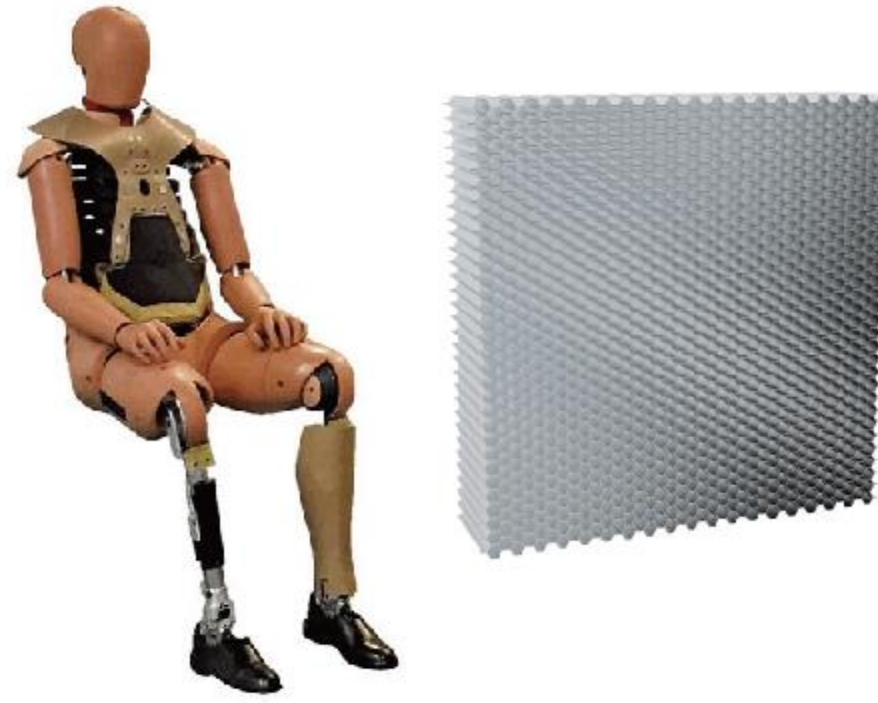


## Series of Products

### Safety Testing Series Products



SC-MDB  
Suitable for China – Side  
Impact Moving Deformable Barrier

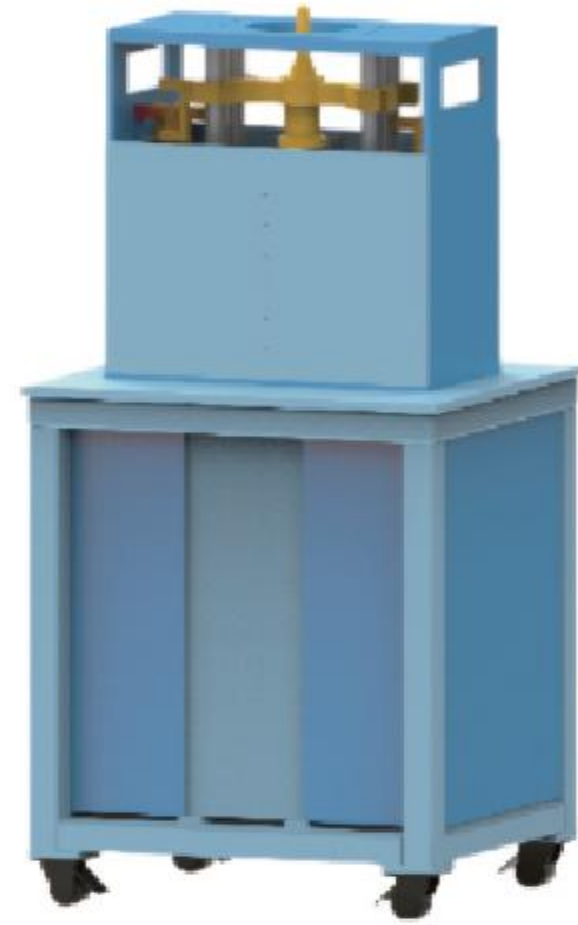


Dummy Calibration  
Honeycomb



RCAR  
Vehicle Low-Speed  
Collision Bumper Barrier

### Customized Equipment

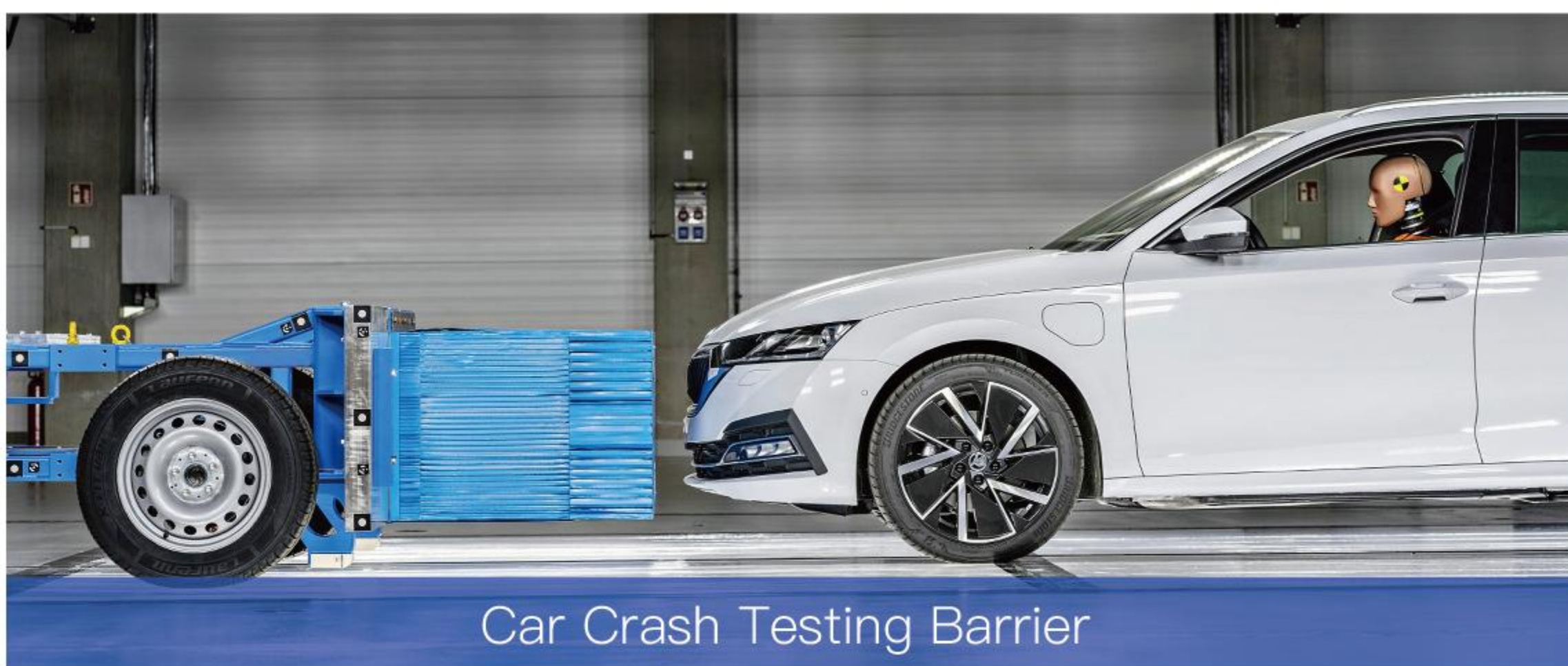


Bottom Impact  
Tester



Car Underbody  
Scraping Test Equipment

## Application Cases



Car Crash Testing Barrier



Partial View of Car Testing Barrier



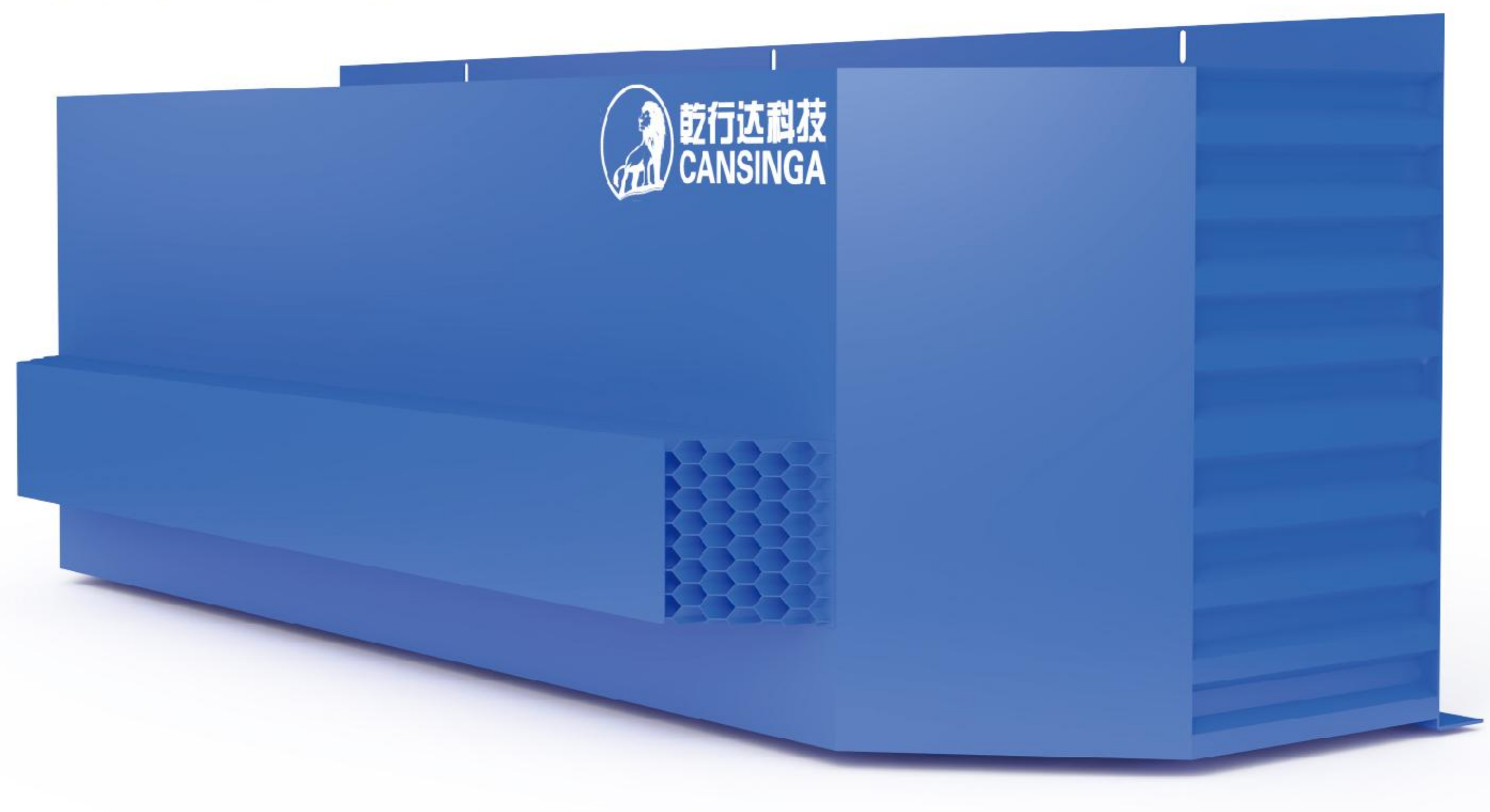
Bumper for Car Crash Testing



Dummy Calibration  
Honeycomb

# SC-MDB

## Suitable for China – Side Impact Moving Deformable Barrier



### Description

China Automotive Technology and Research Center, through research on traffic accidents over the years, found that the proportion of SUVs in traffic accidents has been increasing year by year. Through a comprehensive analysis of the front-end dimensions of 43 car models and the front-end stiffness curves of 25 car models in accidents, the final model for the development of this barrier was determined.

Cansinga is the only company that has participated in the entire development process, responsible for the realization of the barrier's mechanical properties and the production of prototypes. The product development has been completed, and the supply has been realized.

### Technical Specifications

C-NCAP Management Rules (2024 Edition)  
Appendix C Deformable Mobile Barrier Side  
Impact Test Procedure

### Usability

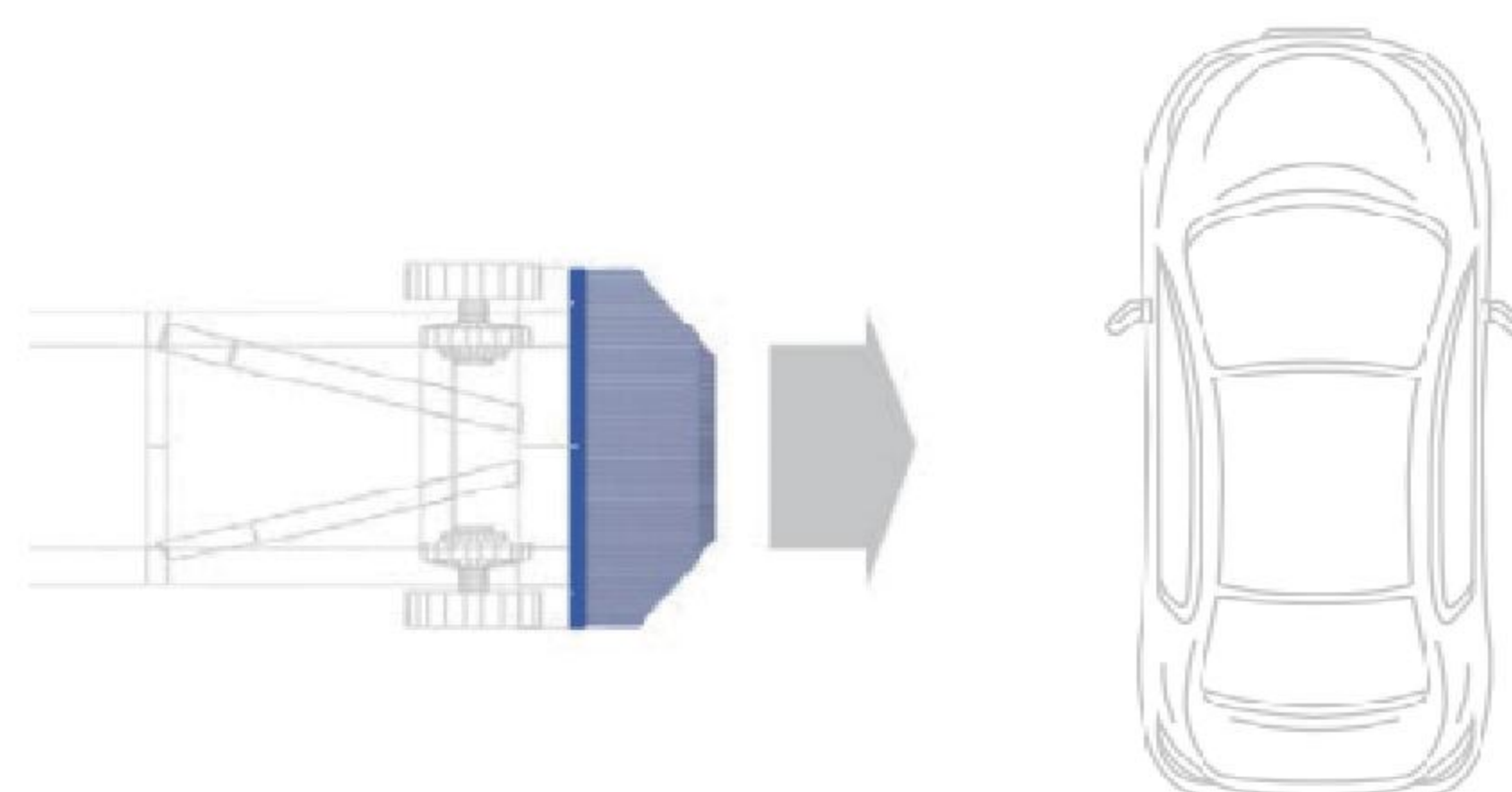
Comes with a certificate of compliance  
and test data in the box  
Paint: Customizable upon request  
Packaging: Single carton dimensions 1870\*670\*720mm  
Overall weight: 42kg

### Structure

Consists of a main honeycomb and a bumper honeycomb  
The main honeycomb is composed of six honeycomb cores

### Collision Instructions

Curb Weight: 1700±20kg  
Bumper Ground Clearance: 450mm  
Impact Angle: 90°      Impact Speed: 60km/h



# AC-MDB

## Advanced Chinese Mobile Deformable Barrier



### Description

Developed specifically for the “China Insurance Automobile Safety Index Regulations (2C23 Edition)”, this is a brand-new domestic barrier with independent intellectual property rights. It aims to provide a measurement tool with sufficient precision to ensure repeatable and highly relevant results under similar test conditions, and to reflect the safety performance of a motor vehicle or a part of a motor vehicle when occupied.

### Technical Specifications

C-IASI China Insurance Automobile Safety Index Regulations  
Part 2: In-Vehicle Occupant Safety Index Side  
Impact Test Procedure

### Usability

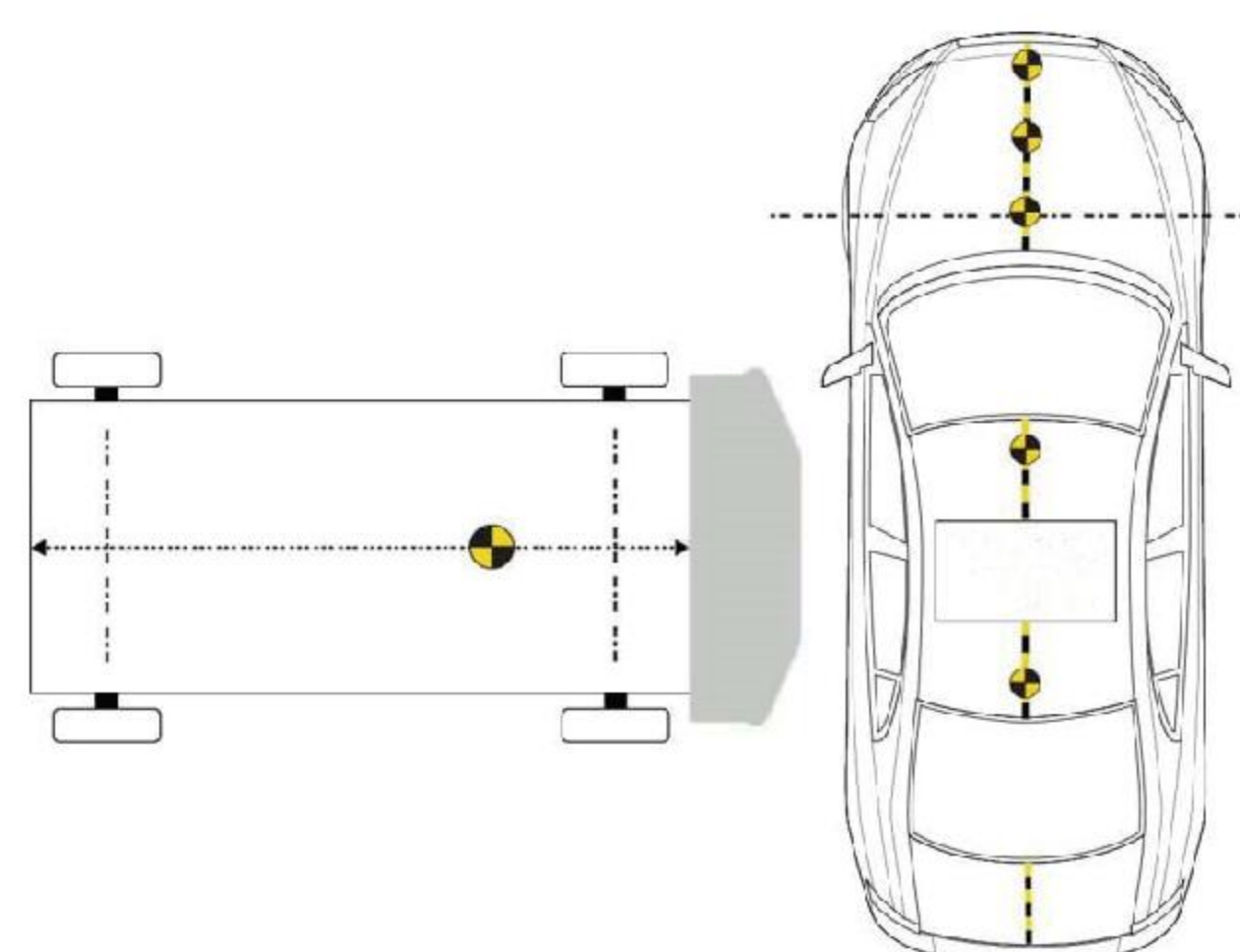
Comes with a certificate of compliance and test data in the box  
Paint: Customizable upon request  
Packaging: Single carton dimensions 1870\*780\*660mm  
Overall Weight: 37kg

### Structure

Consists of a main honeycomb and a bumper honeycomb  
The main honeycomb is composed of seven honeycomb cores  
The bumper honeycomb is composed of three honeycomb cores

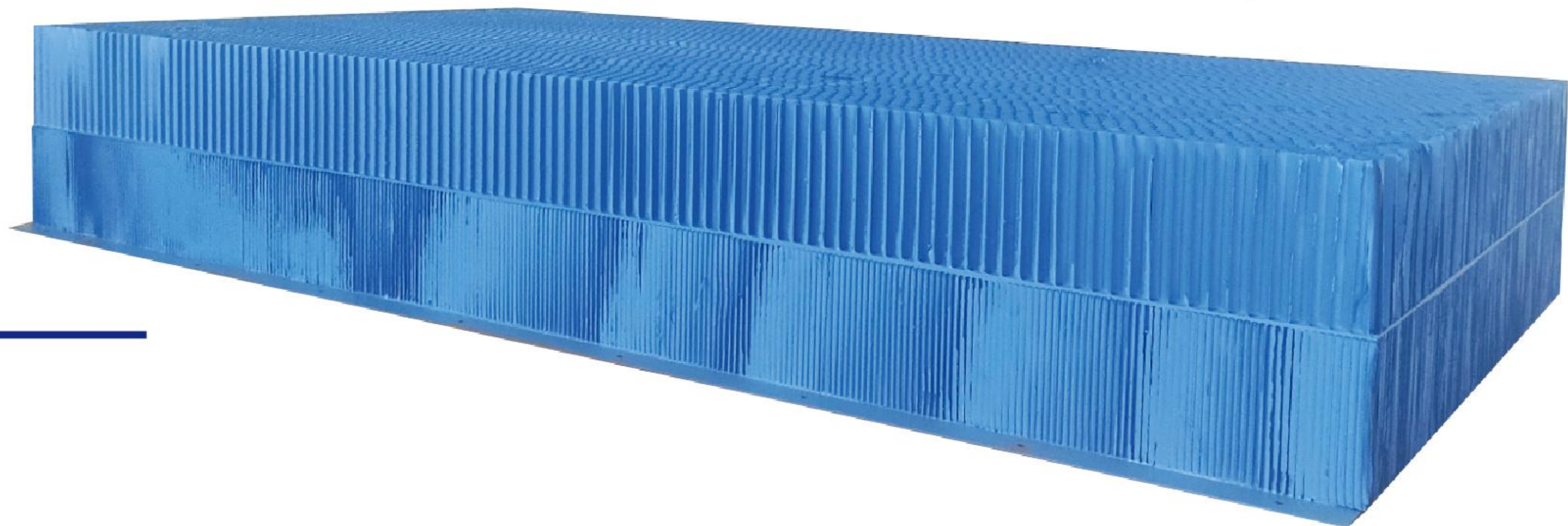
### Collision Instructions

Curb Weight: 1650±20kg  
Bumper Ground Clearance: 510mm  
Impact Speed: 50km/h Impact Angle: 90°



# FWDB

## Full Width Deformable Barrier



### Description

Designed for Euro NCAP (European New Car Assessment Programme), this deformable barrier is developed and manufactured in accordance with the \*EURO NCAP Full Width Deformable Barrier Face Specification\* Version 1.0. It features a two-layer aluminum honeycomb structure that simulates deformation behavior during vehicle collisions through honeycomb layers with different crushing strengths, thereby evaluating vehicle safety performance in full-width impact tests. Its structural design strictly controls dimensions, materials, and mechanical properties to ensure test repeatability and accuracy.

### Technical Specifications

《EURO NCAP Full Width Deformable Barrier Face Specification》Version 1.0

### Structure

Composed of front and rear sections of aluminum honeycomb with varying strengths, combined with a backplate to form a unified impact surface.

### Usability

A certificate of conformity and test data are included with the packaging.  
Paint: Customizable upon request  
Packaging: Individual carton dimensions 2060\*1140\*350mm  
Packaging Weight: 90kg

# AC-mpdb

## Advanced Chinese Mobile Progressive Deformable Barrier



### Description

The product is an innovative automotive crash testing device independently developed by China Automotive Engineering Research Institute (CAERI). Based on comprehensive Chinese domestic vehicle data, it accurately simulates vehicle-to-vehicle frontal collision scenarios through precise stiffness design and structural optimization. The waveform similarity to real vehicles is  $\geq 82\%$ , and its well-calibrated mass design better represents the characteristics of mainstream Chinese vehicle models. It addresses the core limitation of the European standard MPDB in accurately simulating real-world collision conditions in China, providing a more precise evaluation benchmark for automotive safety development.

### Structure

The AC-MPDB barrier is a modular crash test structure specifically designed for Chinese vehicle models. Its core consists of six aluminum honeycomb blocks arranged in a multi-zone configuration. The overall design is strictly based on measured data from hundreds of domestic vehicle front-end structures, with reinforced craftsmanship and optimized corner cuts to ensure stable reproduction of real vehicle-to-vehicle deformation and mechanical responses during collisions.

### Collision Instructions

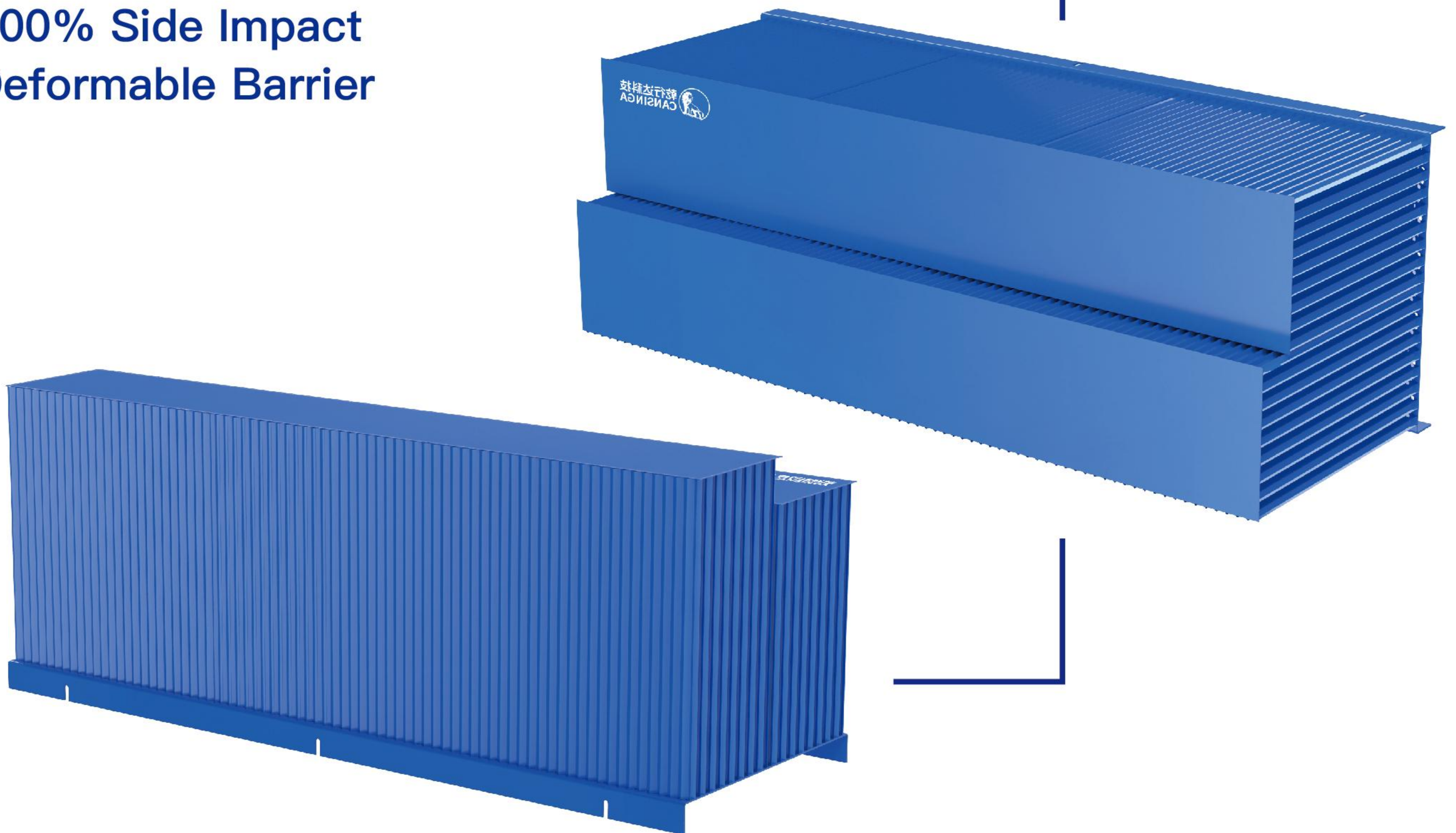
Speed: 50 km/h  
Curb Weight:  $1650 \pm 5$  kg  
Ground Clearance: 120 mm  
Impact Speed: 50 km/h  
Impact Type: Offset Frontal Impact

### Usability

A certificate of conformity and test data are included with the packaging.  
Paint: Customizable upon request  
Packaging: Individual carton dimensions 1250\*890\*900mm  
Packaging Weight: 80 kg

# MDB

## 100% Side Impact Deformable Barrier



### Description

The side impact mobile deformable barrier is one of several certified honeycomb barriers used for comprehensive crash testing in the field of automotive safety. The performance of this product is designed to provide a measurement tool with sufficient precision to ensure repeatable and relevant results that reflect the protective nature of motor vehicles for occupants.

### Technical Specifications

United Nations ECE R95 Amendment 3  
European Directive 96/27/EC  
GB/T20071-2006

### Usability

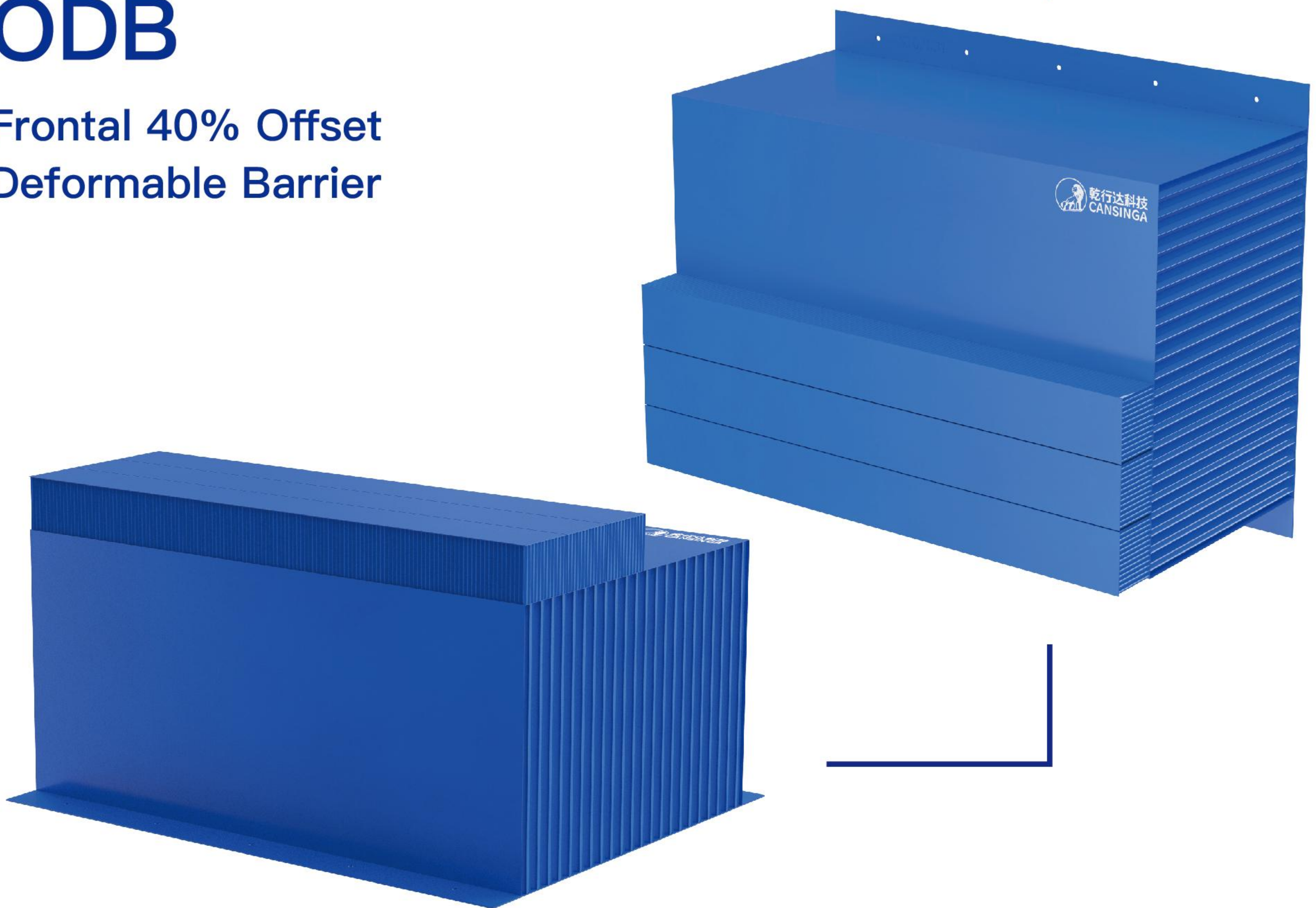
Comes with a certificate of compliance and test data in the box  
Paint: Customizable upon request  
Packaging: Single carton dimensions 1600\*560\*600mm  
Packaging weight: 30kg

### Structure

Lower honeycomb core (composed of blocks 1-3 and 2)  
Upper honeycomb core (composed of blocks 4, 5, and 6)  
Aluminum backplate  
Panel

# ODB

## Frontal 40% Offset Deformable Barrier



### Description

The front offset deformable barrier is used in the field of automotive crash testing safety. The performance of the barrier is designed to provide a measurement tool with sufficient precision to ensure repeatability and reflect the protective performance of motor vehicles.

### Technical Specifications

NHTSA Lab Test Procedure Dynamic Side  
Impact Protection TP214D Appendix C  
European Directive 96/79/EC  
United Nations ECE R94  
GB/T20071-2006

### Usability

Comes with a certificate of compliance and test data in the box  
Paint: Customizable upon request  
Packaging: Single carton dimensions 1075\*825\*580mm  
Packaging weight: 25kg

### Structure

Main honeycomb core  
Bumper honeycomb core  
Base plate  
Cover plate  
Bumper unit panel

# AE-MDB

## Advanced European Mobile Progressive Deformable Barrier



### Description

The Advanced European Mobile Deformable Barrier (AE-MDB) is one of several certified honeycomb barriers used for crash testing in the field of automotive safety. The performance of this product is designed to provide a measurement tool with sufficient precision to ensure repeatable and relevant results, as well as to reflect the protective nature of motor vehicles for occupants.

### Technical Specifications

Euro NCAP TB014 v1.0

### Usability

Comes with a certificate of compliance and test data in the box

Paint: Customizable upon request

Packaging: Single carton dimensions 1825\*625\*650mm

Packaging weight: 33kg

### Structure

The main honeycomb core structure is composed of blocks A-F

The bumper unit honeycomb core is composed of one piece

Base plate

Panel

Bumper panel

# MPDB

## Mobile Progressive Deformable Barrier



### Description

The Mobile Progressive Deformable Barrier (MPDB), based on aluminum honeycomb technology, is used by automotive manufacturers and testing laboratories worldwide to assess occupant protection in frontal offset crash test procedures (according to the European New Car Assessment Programme's 2020 assessment plan, known as Euro NCAP).

### Technical Specifications

Euro NCAP TB022 v1.2

### Usability

Comes with a certificate of compliance and test data in the box

Paint: Customizable upon request

Packaging: Single carton dimensions 1075\*650\*900mm

Packaging weight: 33kg

### Structure

Composed of honeycomb cores A, B, and C

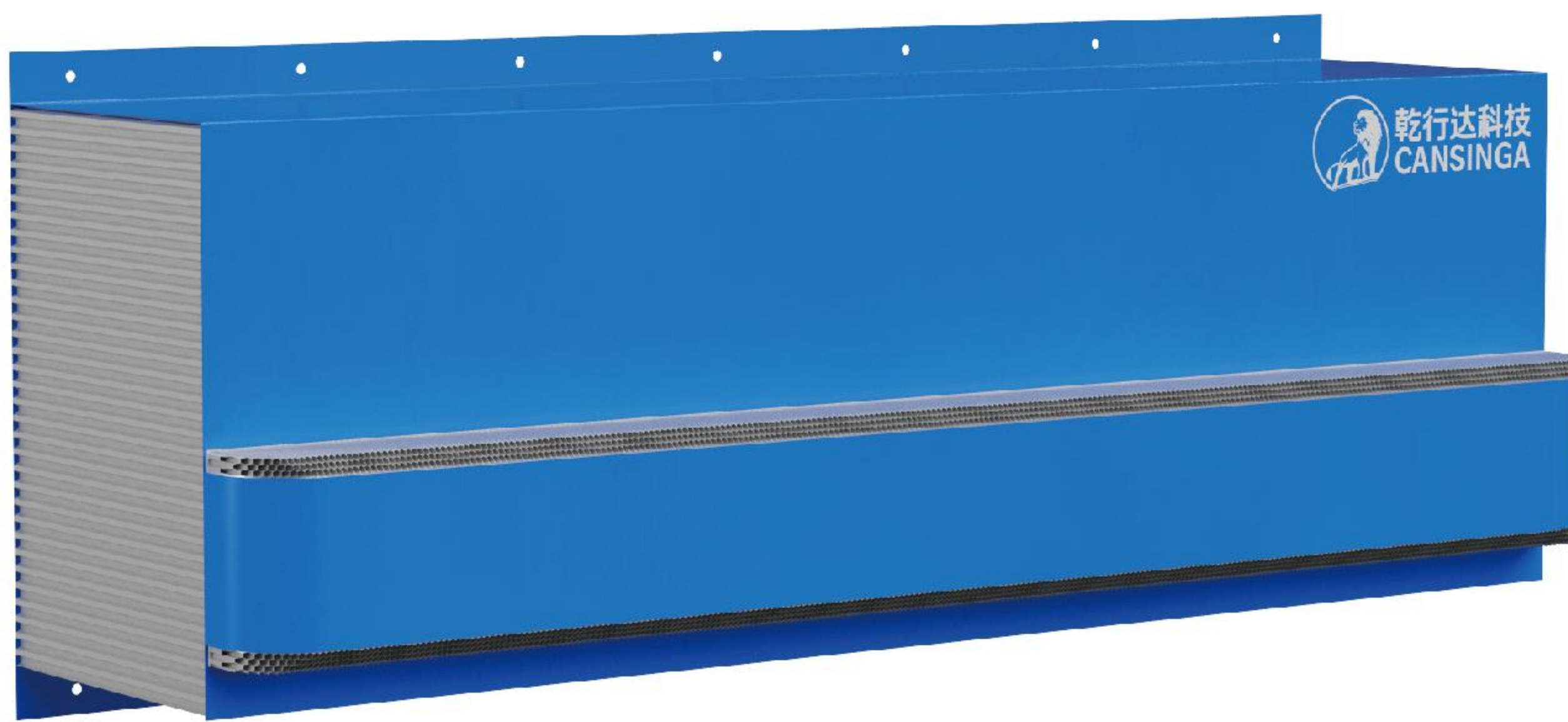
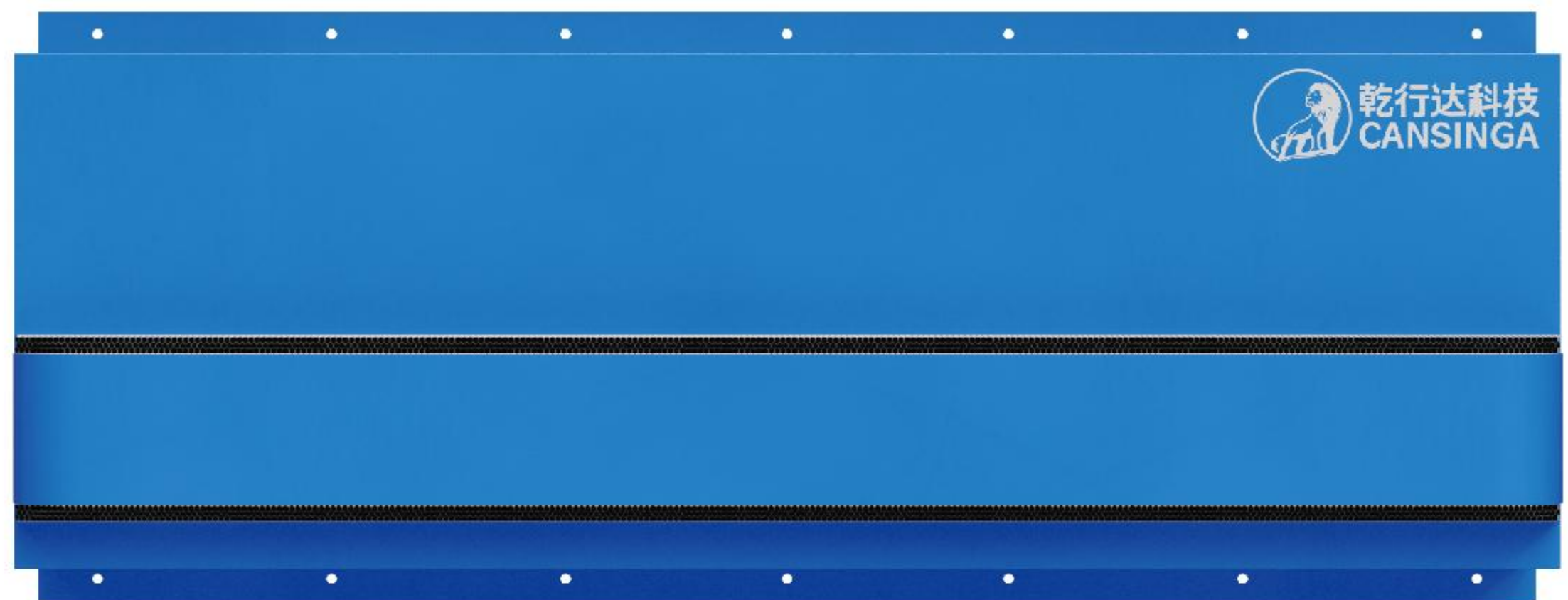
Intermediate plate

Contact plate

Back plate

# NHTSA 214-MDB

## NHTSA FMVSS-214 Side Impact Barrie



### Description

The NHTSA 214 MDB is used for full-scale crashworthiness testing of the side and rear of vehicles. This barrier is designed to provide a measurement tool with sufficient precision to ensure the repeatability of test results and to reflect the protective performance of vehicles for human occupants.

### Technical Specifications

NHTSA TP214-D NHTSA 49CFR571.214  
NHTSA Lab Test Procedure  
Dynamic Side Impact Protection  
TP214D Appendix C

### Usability

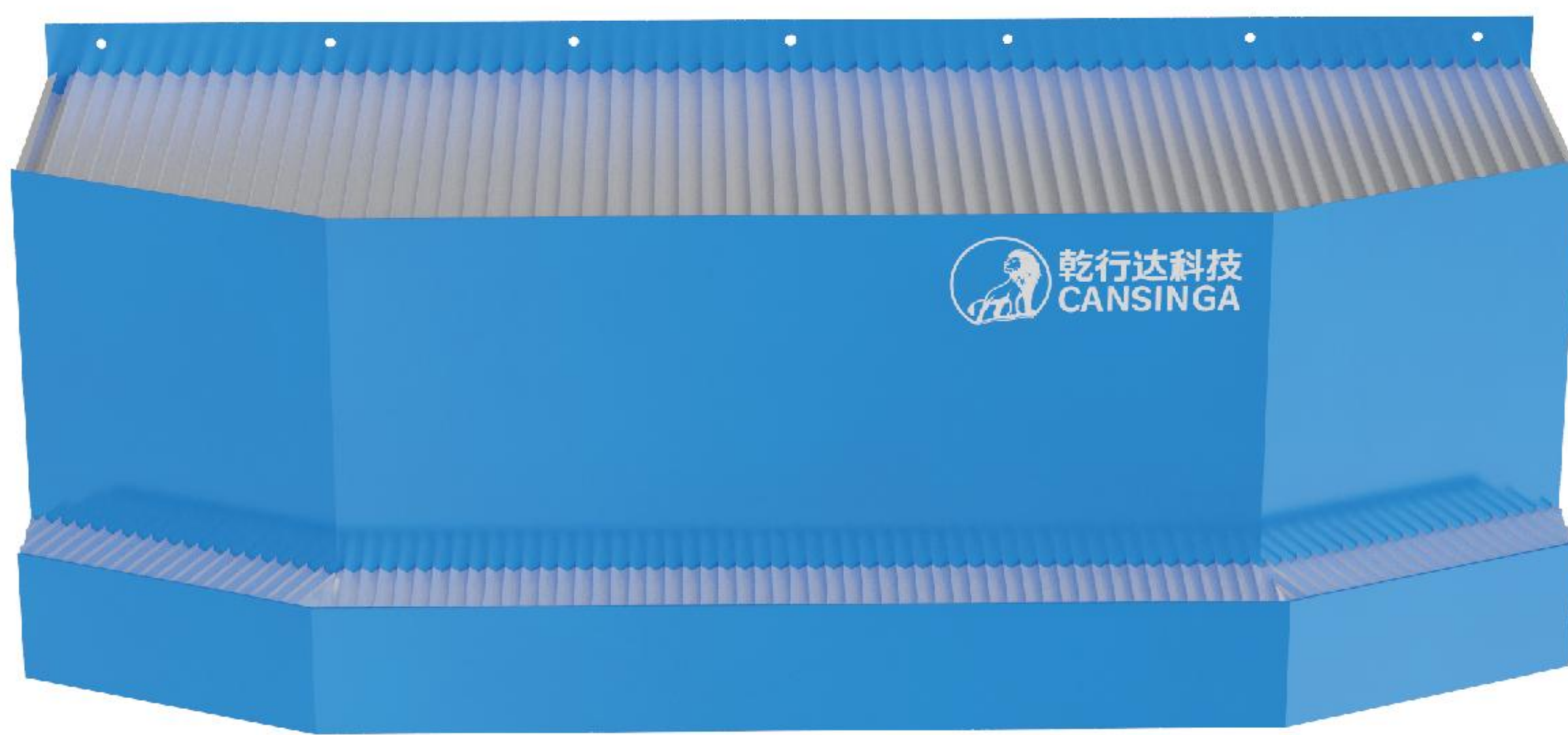
Comes with a certificate of compliance and test data in the box  
Paint: Customizable upon request  
Packaging: Single carton dimensions 1750\*760\*560mm  
Packaging weight: 30kg

### Structure

Main honeycomb core  
Bumper honeycomb core  
Base plate  
Cover plate

# IIHS-MDB V2

## IIHS2.0 Side Moving Impact Deformable Barrier



### Description

The IIHS-MDB V2 is used for full-scale side impact collision testing in the field of automotive safety. This barrier is designed to provide a measurement tool with sufficient precision to ensure the repeatability of test results and to reflect the protective performance of vehicles for human occupants.

### Technical Specifications

Insurance Institute for Highway Safety  
Moving Deformable Barrier  
2 Specification October 2020

### Usability

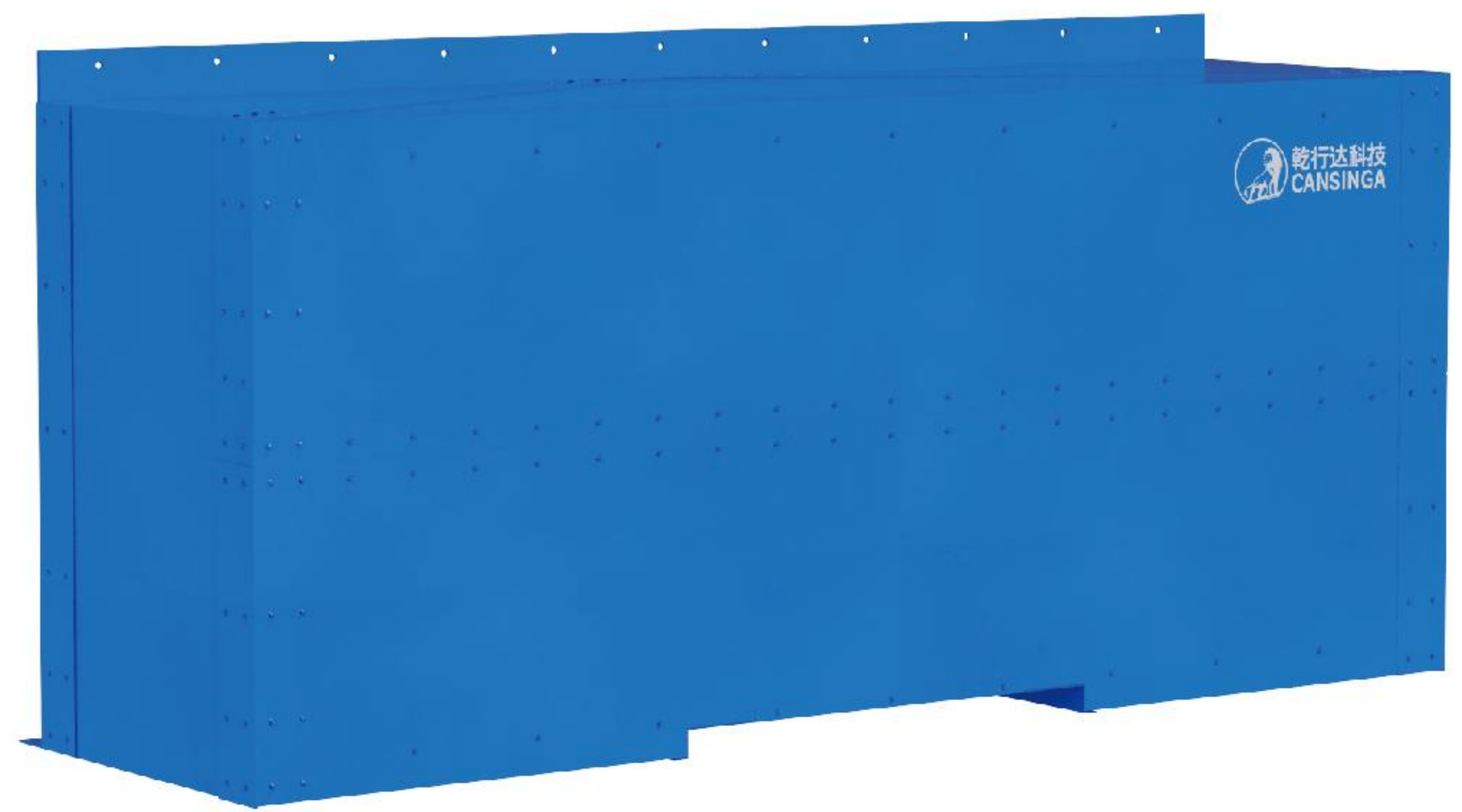
Comes with a certificate of compliance and test data in the box  
Paint: Customizable upon request  
Packaging: Single carton dimensions 1780\*780\*680mm  
Packaging weight: 25kg

### Structure

The main honeycomb unit is composed of blocks A-D  
The bumper unit is composed of blocks E-F  
Base plate  
Cover plate  
Bumper unit base plate

# NHTSA-OMDB

NHTSA frontal oblique  
impact aluminum  
honeycomb barrier



## Description

The NHTSA-OMDB is used for full-scale frontal oblique crashworthiness testing of vehicles. This barrier is designed to provide a measurement tool with sufficient precision to ensure the repeatability of test results and to reflect the protective performance of vehicles for human occupants.

## Technical Specifications

NHTSA OMDB v2015

## Usability

Comes with a certificate of compliance and test data in the box

Paint: Customizable upon request

Packaging: Single carton dimensions 2280\*1200\*75mm

Packaging weight: 135kg

## Structure

Rear honeycomb core

Front honeycomb core

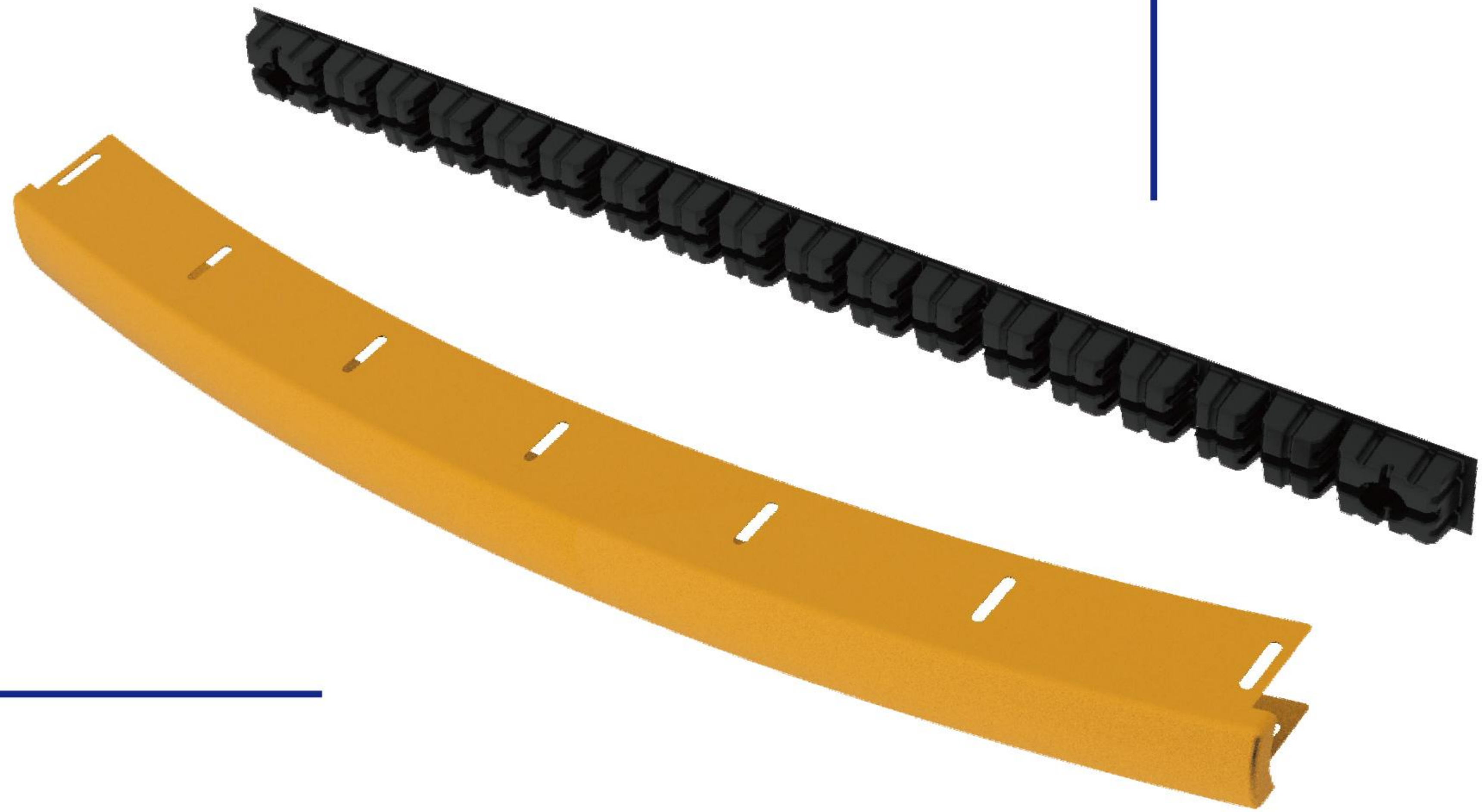
Back plate

Intermediate plate

Contact plate

# RCAR

## Vehicle Low-Speed Collision Bumper Barrier



### Description

A structure that is fixed to a collision barrier or a moving platform and can represent the mechanical response characteristics of the opposing vehicle's bumper and crash beam during a collision, whether it is deformable or non-deformable.

### Technical Specifications

RCAR 《Low-Speed Structural Crash Test Protocol》 Issue 2.3

RCAR 《RCAR Bumper Test》 Issue 2.2

C-IASI China Insurance Automobile Safety Index – Damageability and Repairability Index 2020

### Structure

Consists of a bumper cover plate and an energy absorber

Overall dimensions:

Length: 1530mm

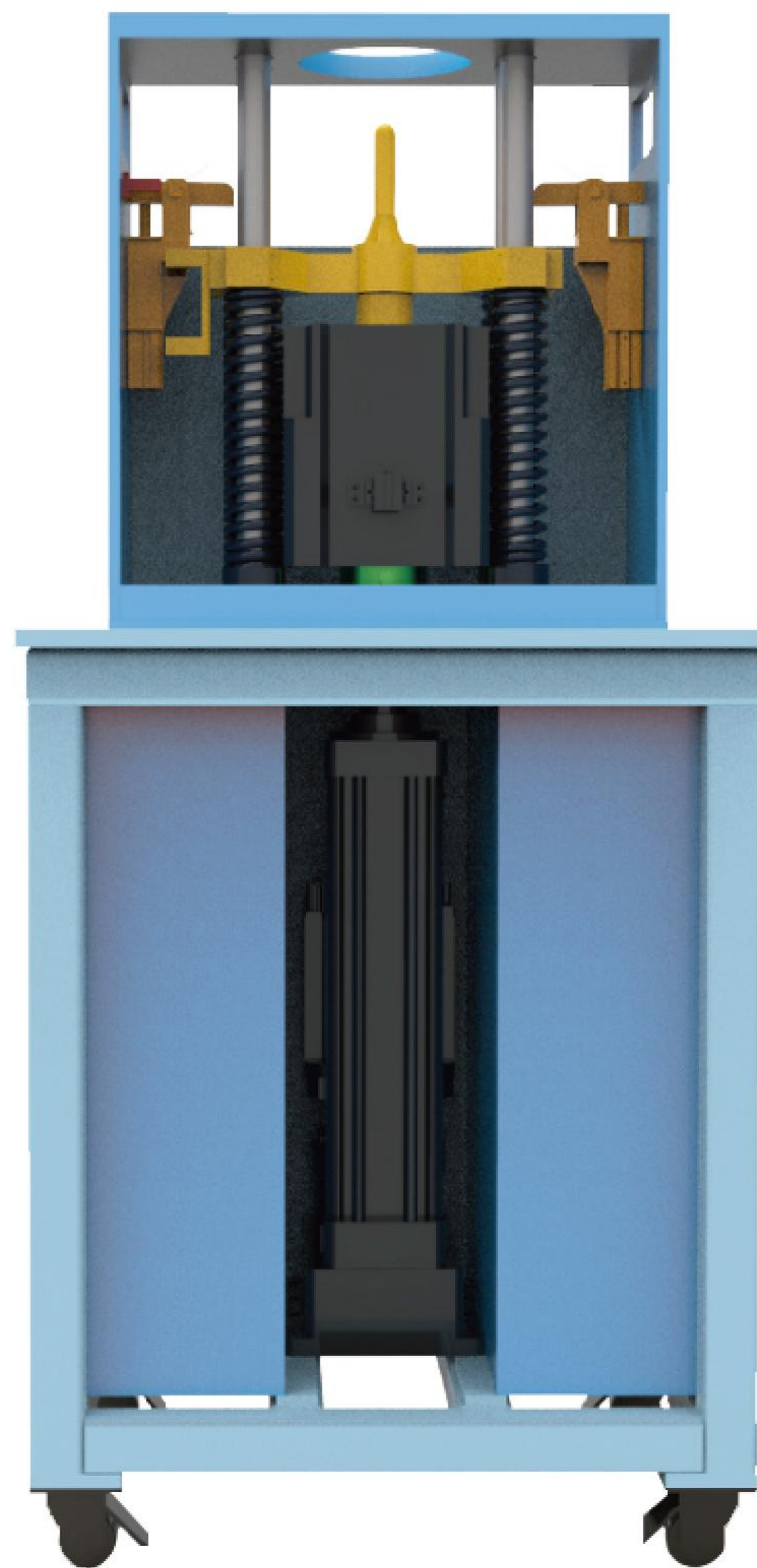
Width: 103mm

Height: 226mm

### Test



# High-Energy Bottom Impact Testing Machine



## Technical Specifications

Impact Energy	100–150J±3J 151–600J±2%J
Fixture Size	Impact surface is $\phi 25\text{mm}$ , 45# steel with a weight of $10\text{kg}\pm 0.1\text{kg}$ solid hemisphere
Impact Direction	Along the vertical direction upward
Equipment Dimensions	1700*800*600
Equipment Power Supply	Industrial electricity 380V
Tensile Testing System	50000N±0.05%
Speed Detection	1%
Hammer Head Extension Height from Equipment	100mm
Equipment Fixing Method	Swivel wheels with brakes

## Description

The High-Energy Bottom Impact Testing Machine is a device used to test the impact resistance of materials or products. It is mainly used to evaluate the load-bearing capacity and durability of materials when subjected to high-energy impacts at the bottom. With this testing machine, various bottom impact scenarios such as drops and collisions can be simulated to assess the conditions that materials or products may encounter in actual use.

## Automotive Undercarriage Scraping Test Equipment



### Description

Automotive undercarriage scraping test is a method used to evaluate the design of the vehicle's undercarriage and the suspension system. In this test, the car is placed on a specific test platform and then passes through obstacles of different heights and shapes at a certain speed, simulating the conditions the car may encounter under different road conditions.

The equipment consists of several parts including the frame system, impact system, lifting system, sensing system, electrical system, and operating system. Through the test, the strength and durability of the vehicle's undercarriage structure, as well as the performance of the suspension system, can be evaluated. This helps manufacturers to improve car design, ensuring that the car can withstand the challenges of various road conditions in actual use, enhancing the durability and safety of the vehicle.

### HEBITM

**Frame System:** Used to fix and install various functional modules, with the ramp connected and fixed to existing pre-embedded parts and equipped with a lifting system for easy hoisting and handling.

**Impact System:** Provides the power for the impact head to scrape the bottom; and realizes scraping tests with different height requirements.

**Lifting System:** Used to adjust the scraping height of the impact head to meet the requirements of scraping tests at different heights.

**Sensing System:** Used to control the start and recovery of the impact head scraping action.

**Electrical System:** Used to control and monitor the normal operation of various functional units.

**Control System:** Used for equipment operation, detection of various unit parameters, and monitoring of equipment operating conditions.

## Group Patents



Until Jun 2022, CANSINGA has applied more than 200 patents and 3 PCT.



## Honors

CANSINGA has passed the ISO9001: 2015 quality management system certification. The aluminum honey-comb barrier developed by CANSINGA for the safety test of new vehicles has passed the authoritative test conducted by China Automobile Research Institute Automobile Inspection Center (Tianjin) Co., Ltd., and other relevant testing institutions in Europe, which means the relevant performance indicators meet the test requirements.



## Cooperative partner

### Chinese Market Partners

#### Testing Institutions

China Automotive Technology and Research Center (Tianjin) Co., Ltd.  
China Automotive Engineering Research Institute Co., Ltd.  
China Merchants Testing Vehicle Technology Research Institute Co., Ltd.  
Xiangyang Daan Automotive Testing Center Co., Ltd.  
Shanghai Motor Vehicle Testing and Certification Technology Research Center Co., Ltd.

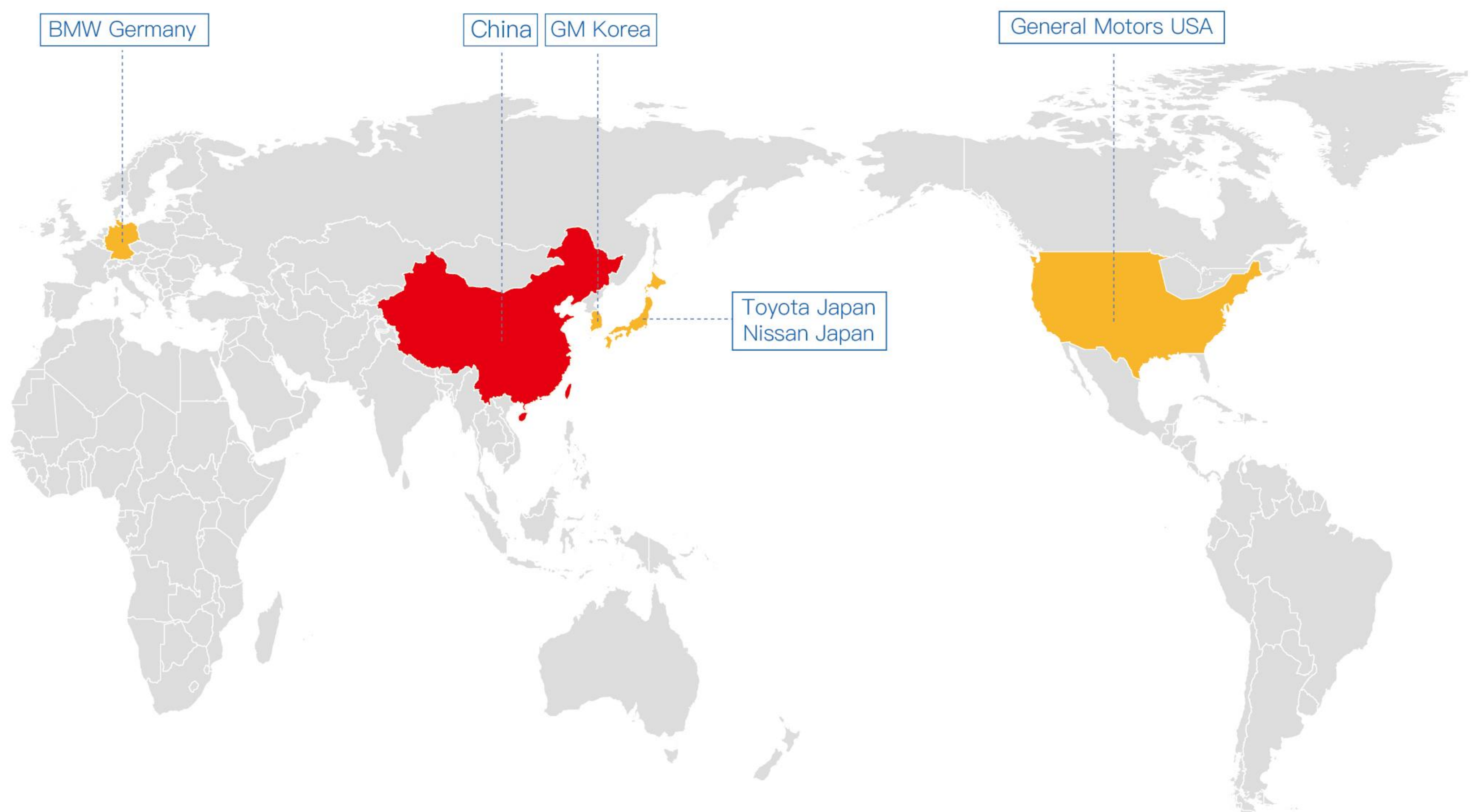
### International Market Partners

BMW Germany  
GM Korea  
Toyota Japan  
Nissan Japan  
General Motors USA

#### OEMs

BYD Company Limited	BYD Company Limited
Great Wall Motor Company Limited	Great Wall Motor Company Limited
Zhejiang Geely Holding Group Co., Ltd.	Zhejiang Geely Holding Group Co., Ltd.

### Products meet international standards with global coverage



Cooperative partner



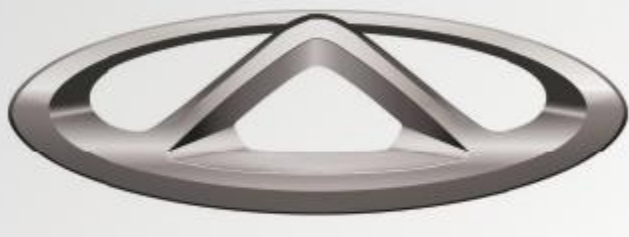
中国汽研  
CAERI



中汽中心



上汽大众  
SAIC VOLKSWAGEN



CHERY



吉利汽车  
GEELY AUTO



比亚迪汽车



广汽传祺  
GAC MOTOR

protech



长安汽车  
CHANGAN AUTO



一汽-大众



上海机动车检测认证  
技术研究中心有限公司

Autoliv



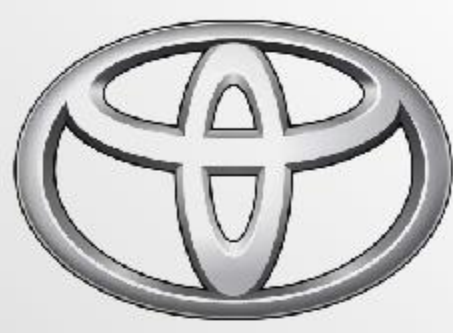
长城汽车



HYUNDAI



锦恒汽车安全系统



TOYOTA



招商车研  
CMVR

检致精 · 行致远



# Aluminum Honeycomb Barrier

## For Safety Test Of New Vehicles

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Wexhat  
Official  
Accounts

