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Shenzhen Sichuang New Materials Technology Co., Ltd.

Test Requirements and Methods for CE Certification of Motorcycle Riders' Protective Gear

www.scxc-esa.com

Joint Brace

Back Protection Gear

Chest Protector

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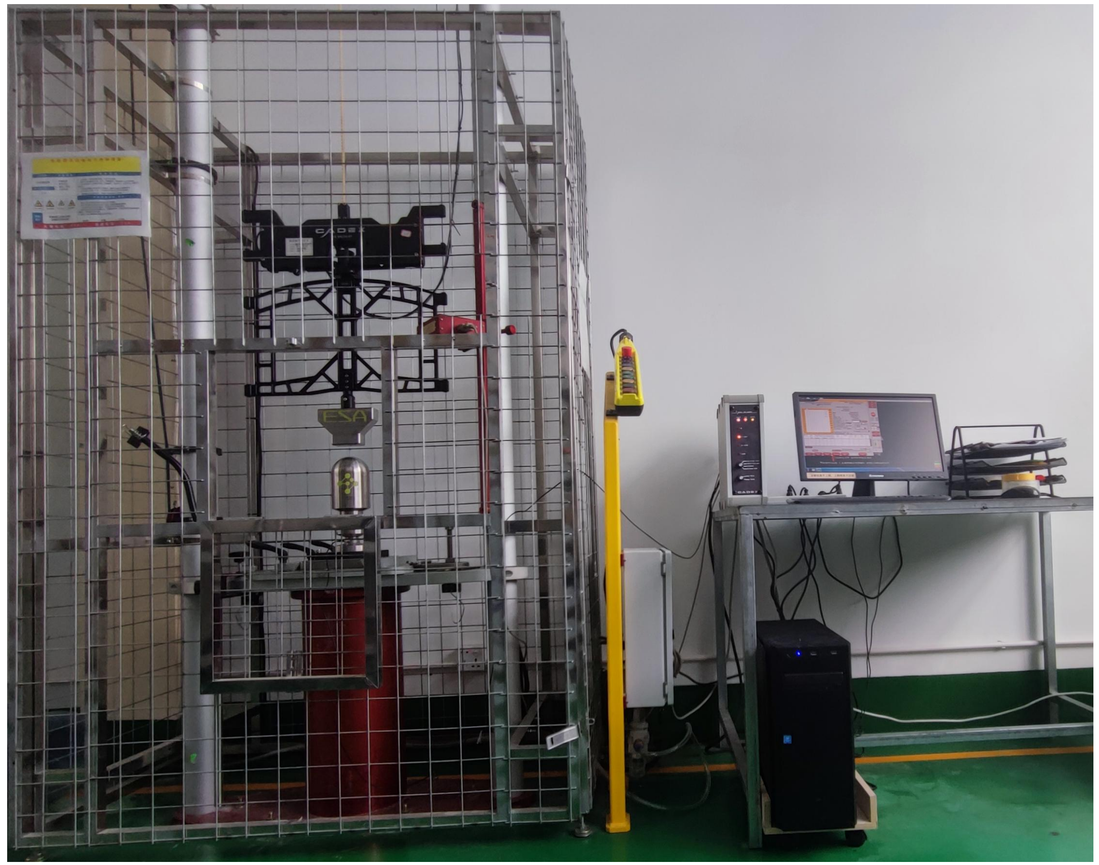
Joint Prostheses

EN 1621-1：2012

Motorcyclist Impact Protection Suit-Part 1:
Experimental Requirements and Testing Methods for Impact Protection Clothing at Limb Joint Connections.

Joint Brace Testing Instrument



Dual Linear Guide 1000kg Collision Testing Machine

According to the testing standard EN1621-1: 2012

The Hammer and Anvil of Joint Braces

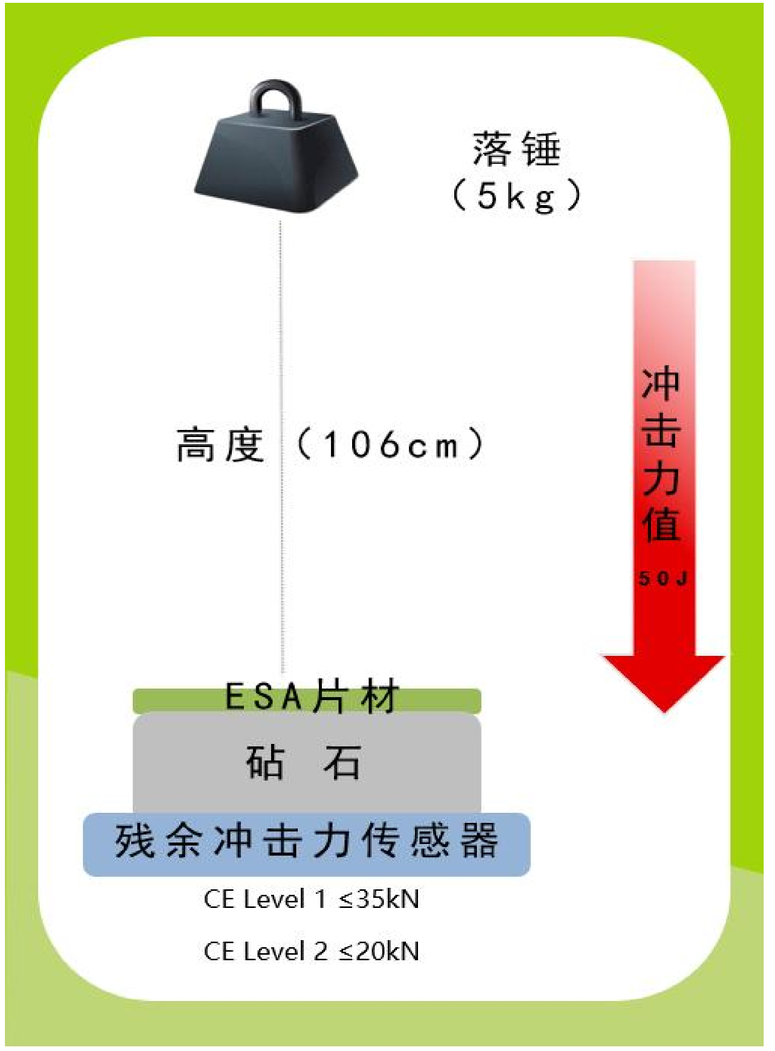
test method

Principle and Procedures of Joint Protector Testing Instrument

The **drop hammer method** was used for testing

Place the sample on a cutting board and impact it with a hammer head of 50J energy.

The test results indicate the energy transmitted to the cutting board after being absorbed by the protective gear, measured in kN.



Environmental Conditions for Joint Brace Testing

Ambient Temperature Testing (mandatory)

Treatment was conducted for (48±0.5) h under conditions of temperature (23±2)℃ and relative humidity (50±5)%

Hydrolysis Test (mandatory)

1. Store the samples in a sealed chamber maintained at (70±2)℃ and 95% humidity for (72± 0.5) hours.
2. Collect the samples, seal them in a moisture-proof bag, and store them at an ambient temperature of (23±2)°C for (24±0.5) hours.
3. Remove the sample from the bag and initiate the impact test on the pre-prepared impact tester within 5 minutes.

Environmental Sim-
ulation Instrument

test method

Environmental Conditions for Joint Brace Testing

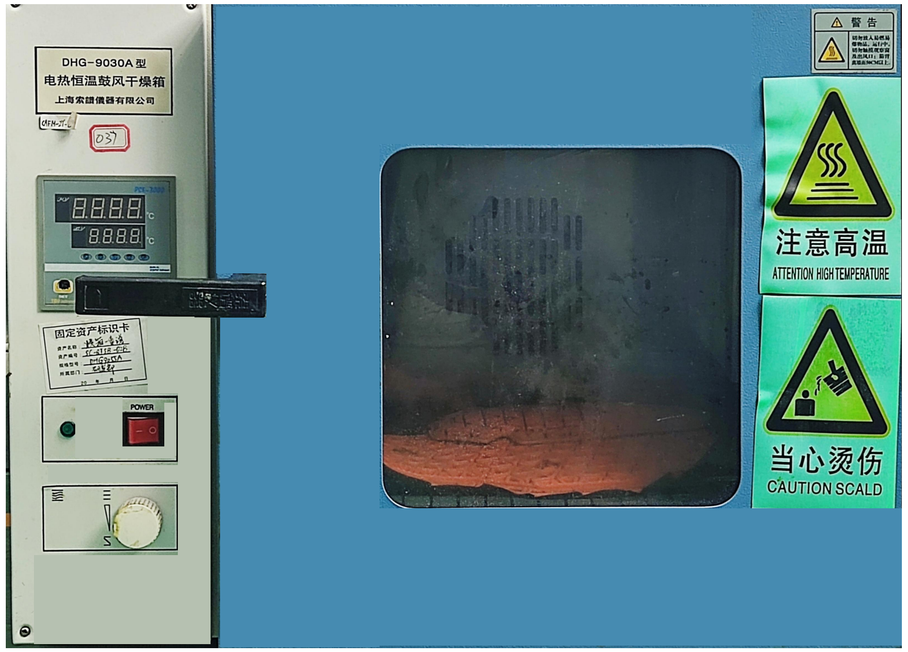
Environmental Simulation Instrument

Low-Temperature Testing (optional)

Samples should be maintained at (−10±2)°C for at least (24±0.5) hours; the impact test shall be performed within 2 minutes after removal from the freezer.

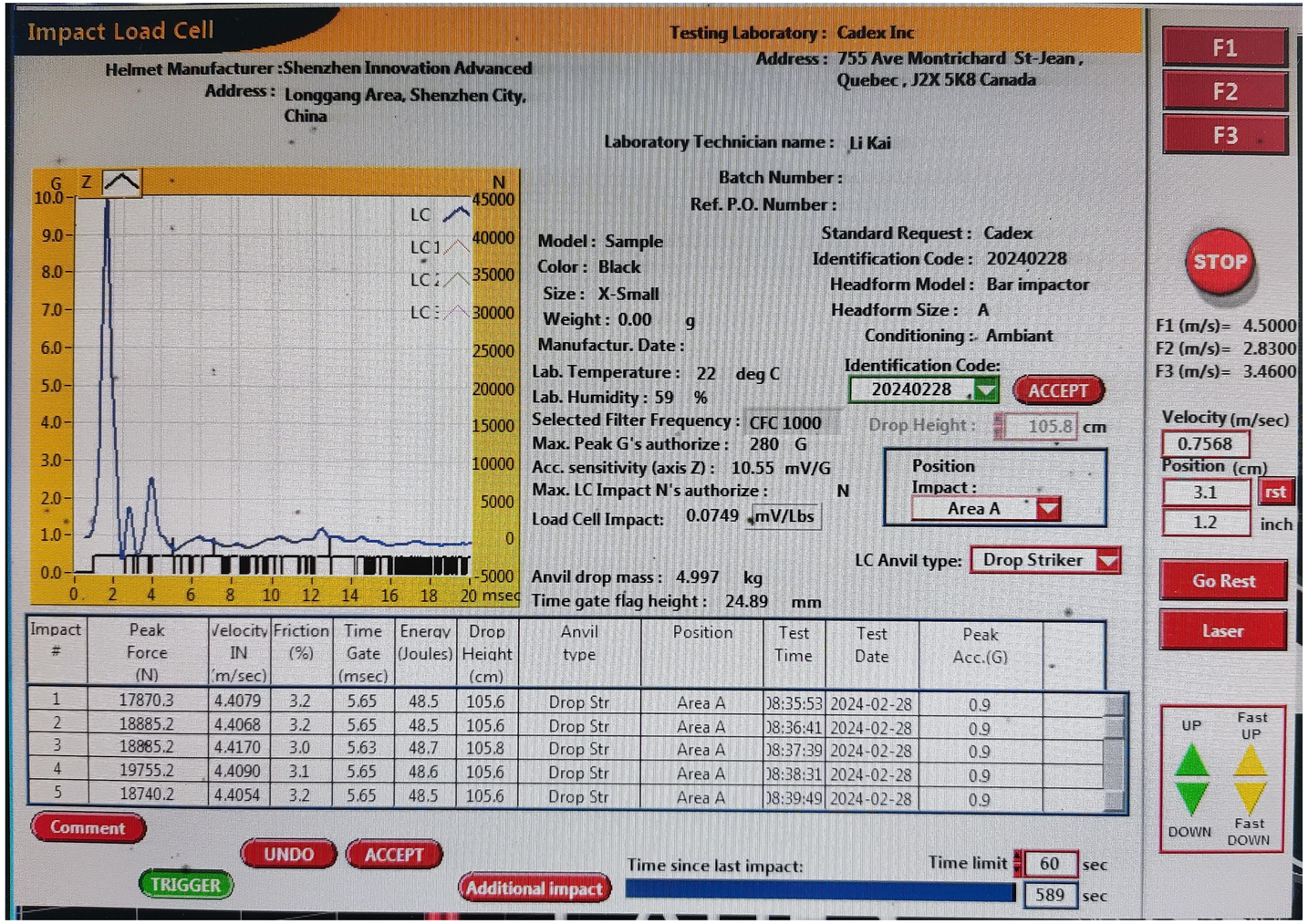
High-Temperature Testing (optional)

Samples should be processed at (40±2)℃ for (24±0.5) hours; the impact test shall be conducted within 2 minutes after removing the samples from the oven.



Oven

Display of Joint Protector Test Results



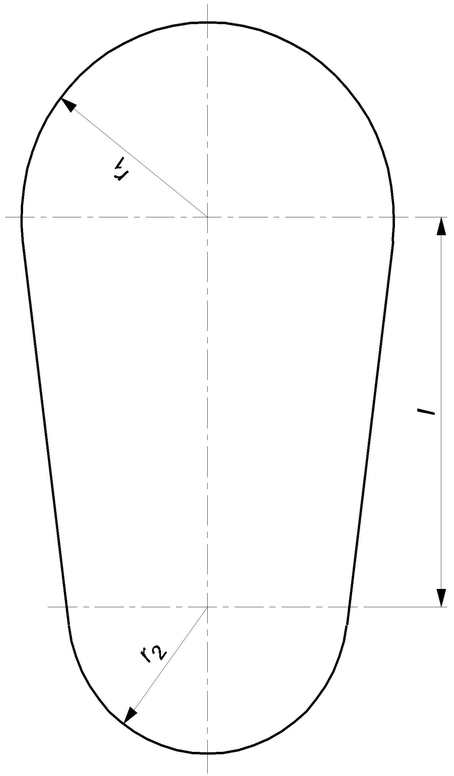
Impact Result Evaluation of Joint Braces

Impact Force Value and Performance Level

	Level 1	Level 2
Average value	≤35 kN	≤20 kN
A distinguish	≤35 kN	≤20 kN
Area B and Area C	≤50 kN	≤30 kN
[1]	Regions A, B, and C correspond to the regions in the figure above.	

Impact protection tests such as environmental shock tests, wet shock tests after hydrolytic aging, and high-temperature shock tests and/or low-temperature shock tests shall only be granted when the experimental data reaches Level 1 or Level 2.

Sample Size Requirements for Joint Braces

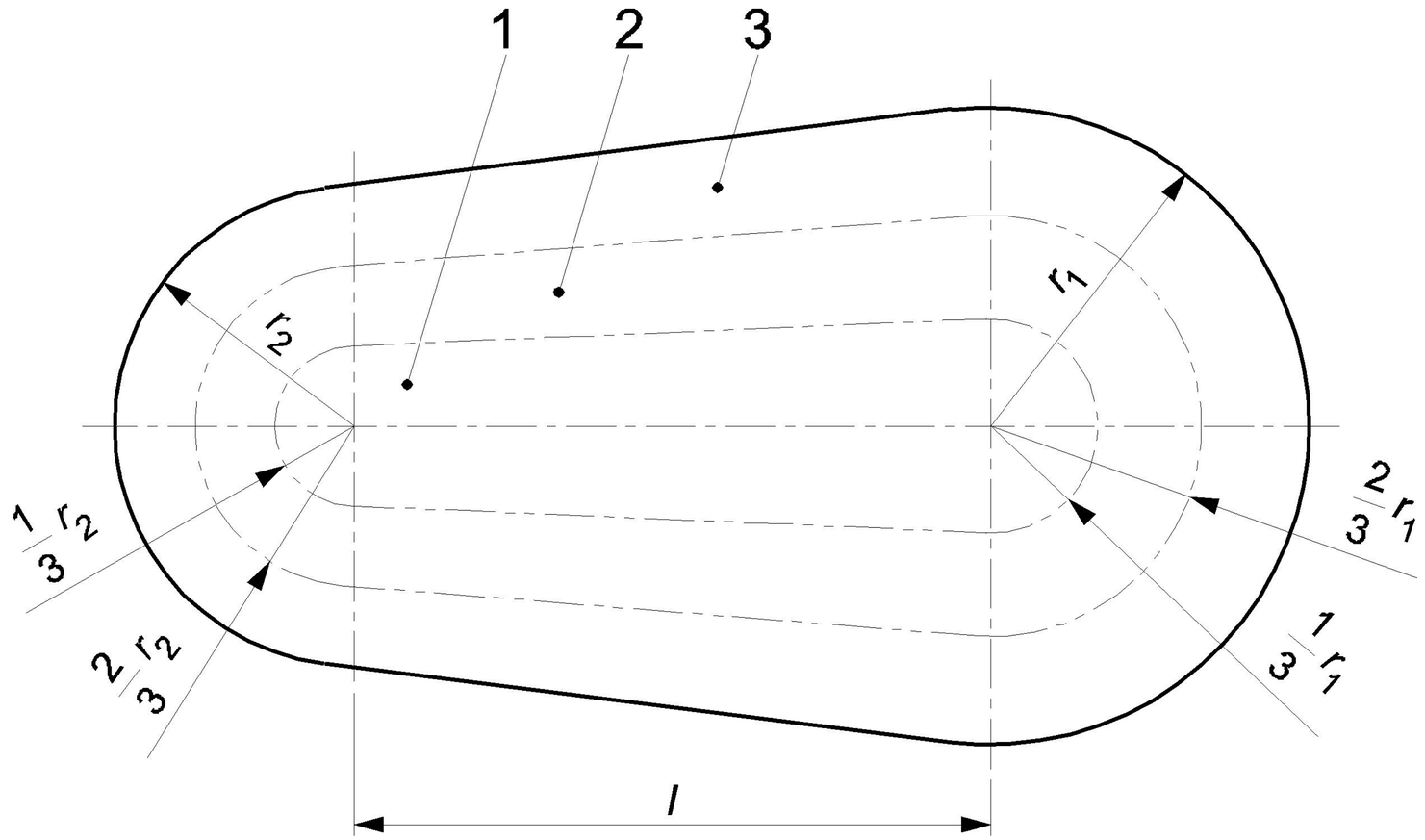


a) Joint protection device

Protective clothing	Type A protective gear (mm)			Type B protective gear (mm)		
	r_1	r_2	l	r_1	r_2	l
Shoulder	55	32	64	70	40	80
Elbow	45	24	118	50	30	150
Knee	55	24	100	70	30	130
Cross	35	26	70	44	33	88

Type A protective gear: Used by smaller riders; Type B protective gear: Used by larger riders

Division of Joint Brace Areas

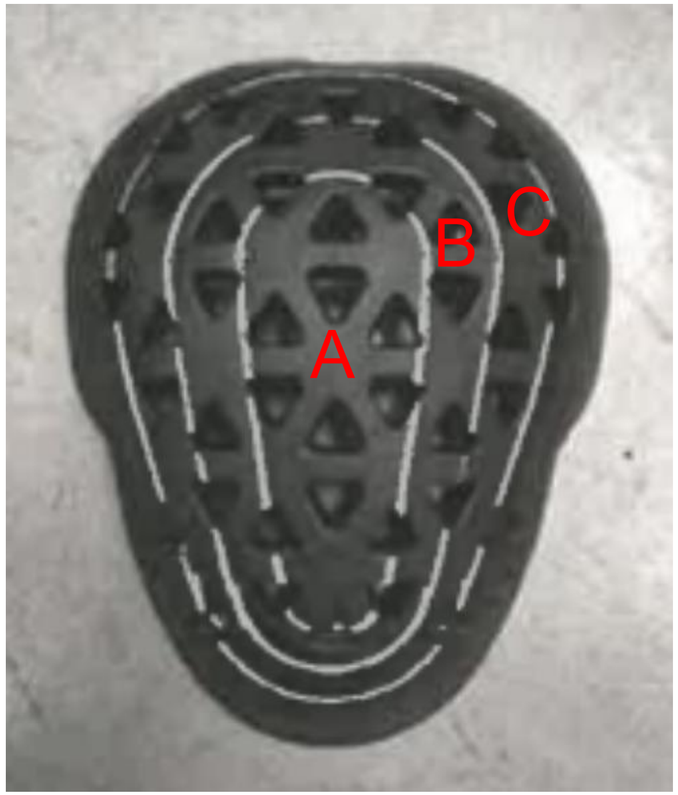


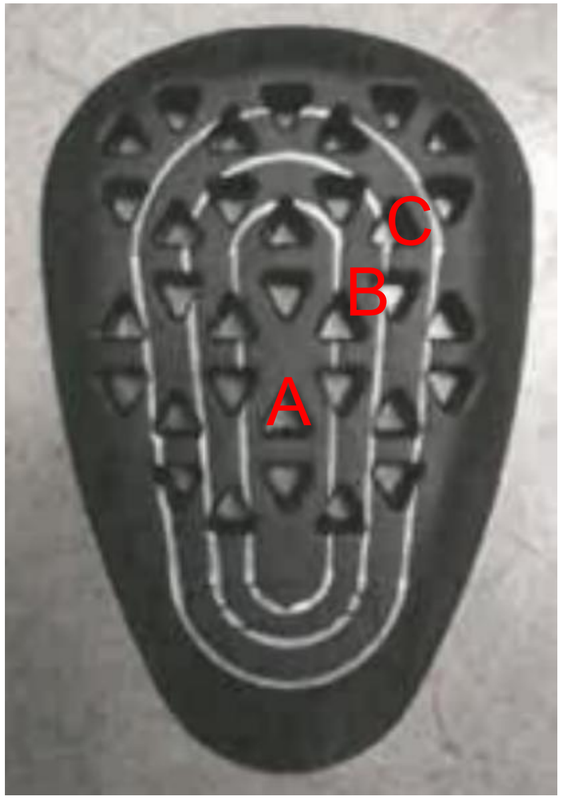
1 test zone A

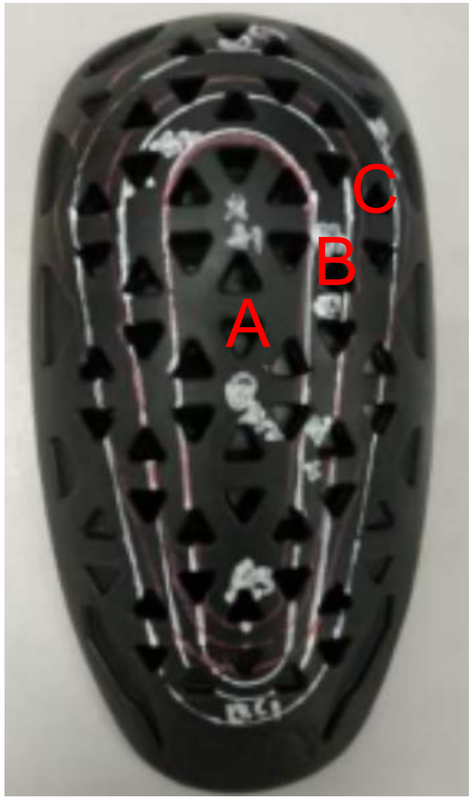
2 test zone B

3 test zone C

Area Division Before Joint Brace Testing







The joint brace is divided into Area A, Area B, and Area C.

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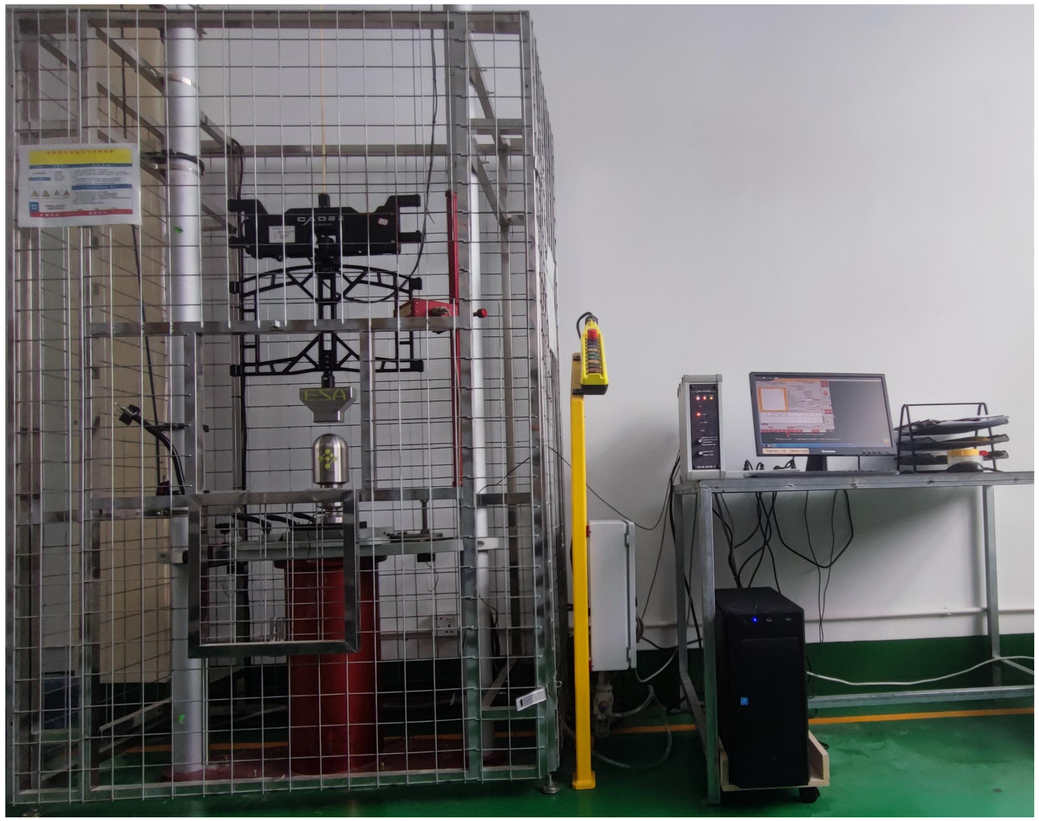
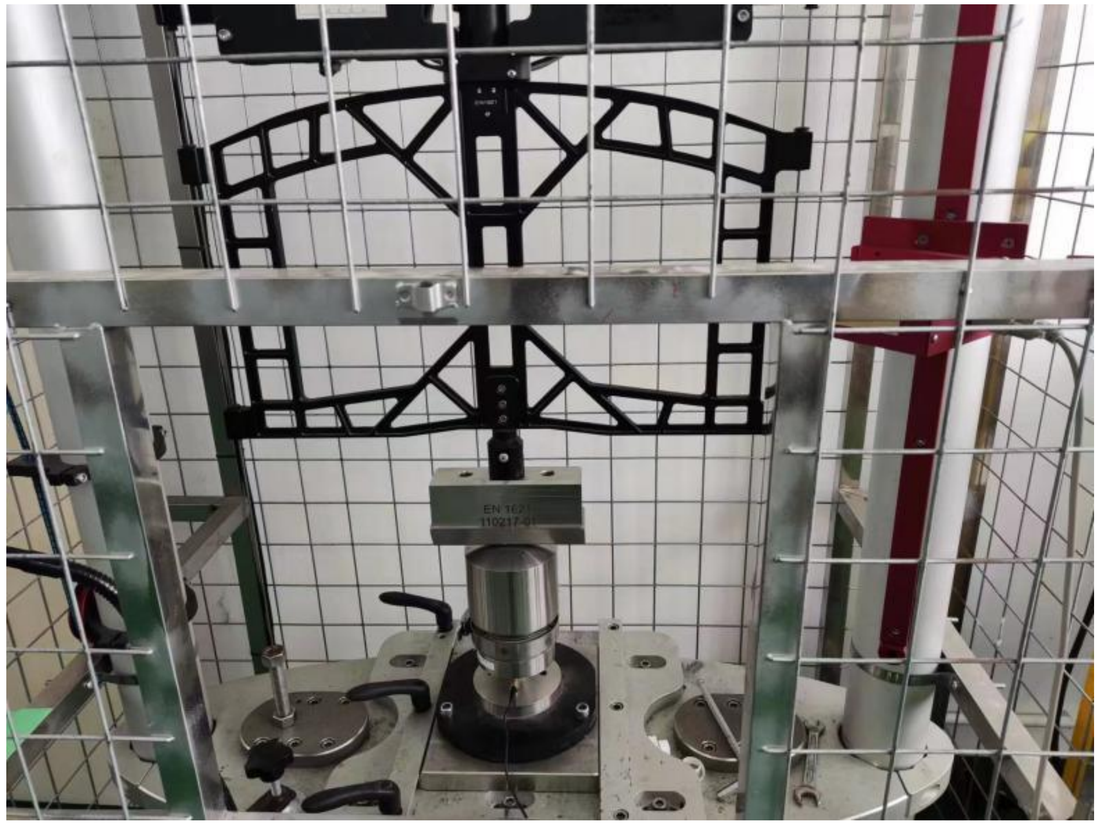
Back Protection Device

EN 1621-2：2014
Motorcyclist Impact Protection Suit-Part 2: Experimental Requirements and Testing Methods for Back Impact Protection Clothing for Motorcycle Drivers

Back Protection Device Testing Instrument





Dual Linear Guide
1000kg Collision
Tester

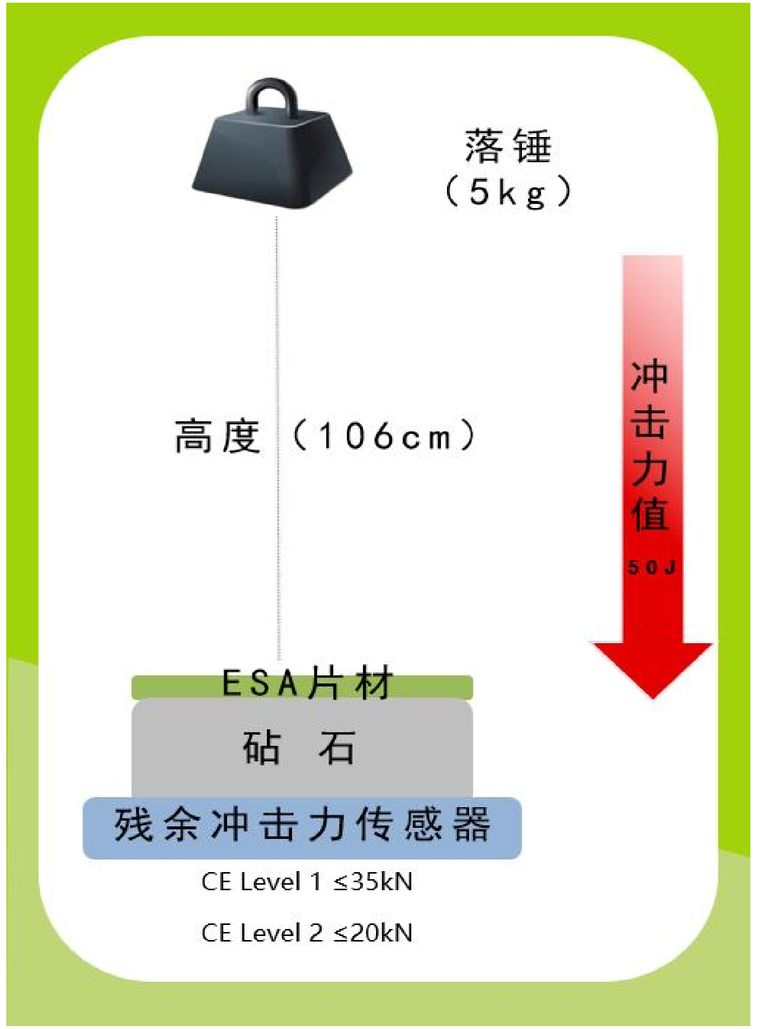
According to the testing standard EN 1621-1:2012 for impact tests of joint braces-Fall hammer and anvil

test method

Principle and Procedures of Back Protection Gear Testing Instrument

Testing was performed using the drop hammer method

Place the sample on a cutting board and impact it with a hammer head of 50J energy. The test results indicate the energy transmitted to the cutting board after being absorbed by the protective gear, measured in kN.



Test Environmental Conditions for Back Protection Gear

Ambient Temperature Testing (mandatory)

Treatment was conducted for (48±0.5) h under conditions of temperature (23±2)℃ and relative humidity (50±5)%

Hydrolysis Test (mandatory)

1. Store the samples in a sealed chamber maintained at (70±2)℃ and 95% humidity for (72± 0.5) hours.
2. Collect the samples, seal them in a moisture-proof bag, and store them at an ambient temperature of (23±2)°C for (24±0.5) hours.
3. Remove the sample from the bag and initiate the impact test on the pre-prepared impact tester within 5 minutes.

Environmental Sim-
ulation Instrument

Test Environmental Conditions for Back Protection Gear

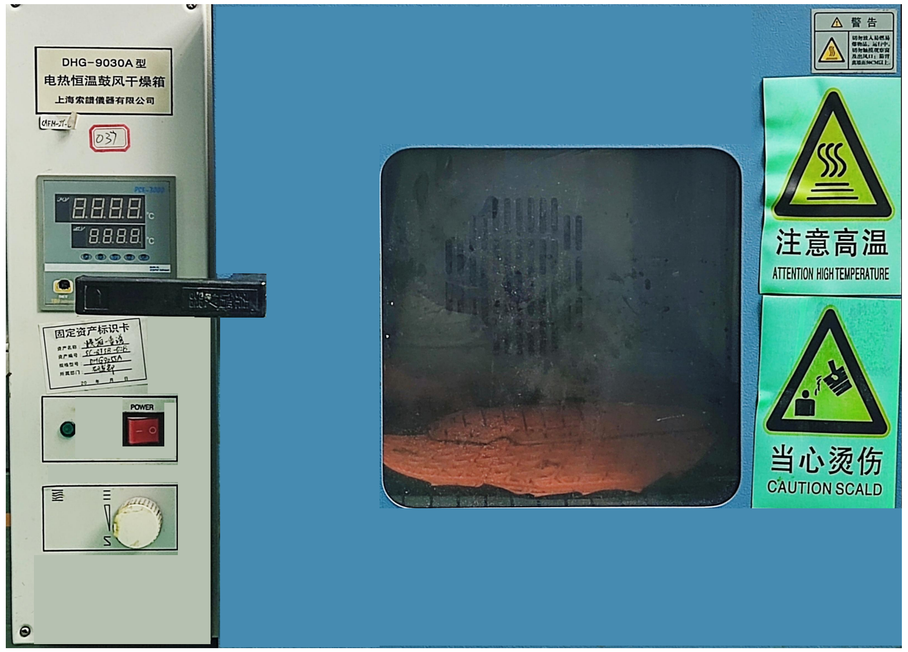
Environmental Simulation Instrument

Low-Temperature Testing (optional)

Samples should be maintained at (−10±2)°C for at least (24±0.5) hours; the impact test shall be performed within 2 minutes after removal from the freezer.

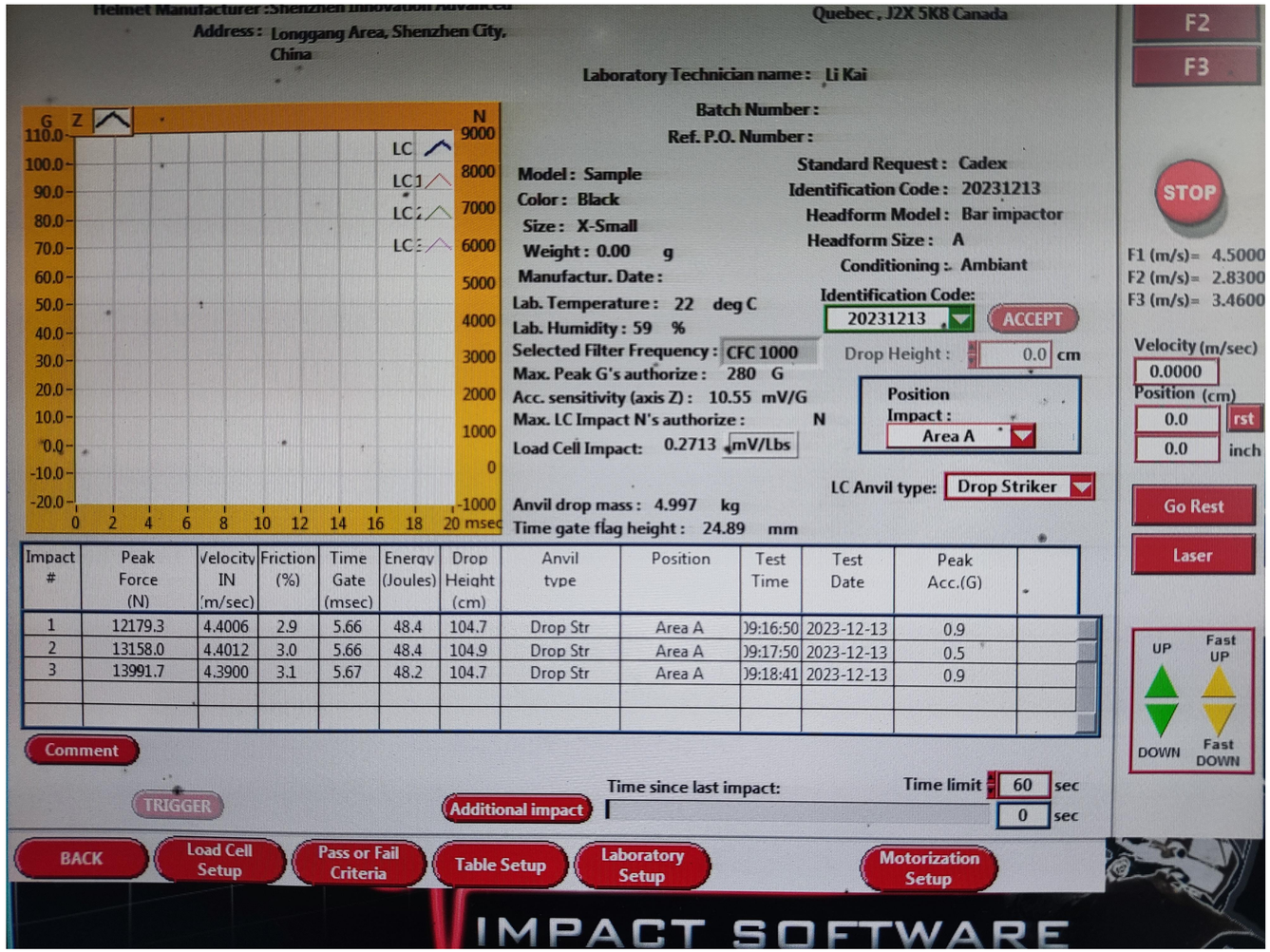
High-Temperature Testing (optional)

Samples should be processed at (40±2)℃ for (24±0.5) hours; the impact test shall be conducted within 2 minutes after removing the samples from the oven.



Oven

Results of Back Protection Device Testing



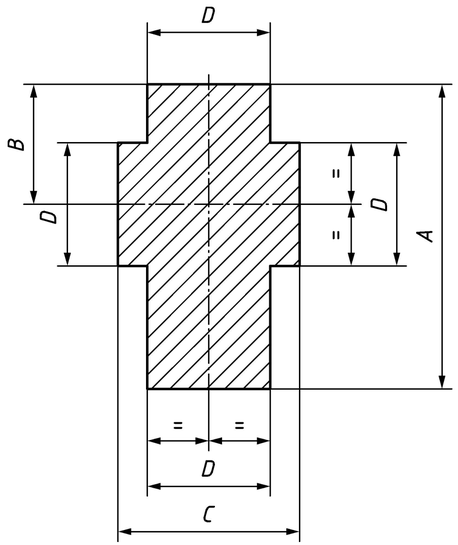
Assessment of Impact Results for Back Protection Gear

Impact Force Value and Performance Level

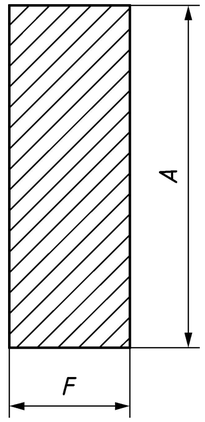
Level 1	Level 2
Mean value: ≤ 18 kN	Average value: ≤ 9 kN
Click: ≤ 24 kN	Click: ≤ 12 kN

Impact protection tests such as environmental shock tests, wet shock tests after hydrolytic aging, and high-temperature shock tests and/or low-temperature shock tests shall only be granted when the experimental data reaches Level 1 or Level 2.

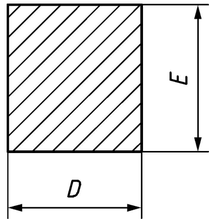
Sample Dimensions of Back Protection Gear



a) Full back protection gear



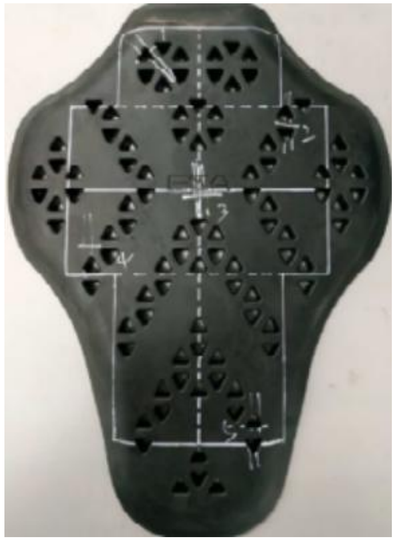
b) Central back brace

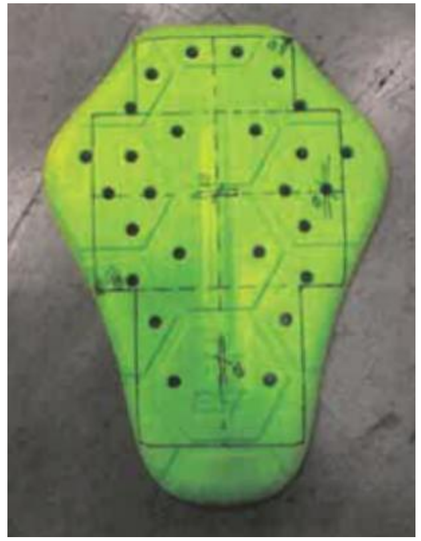
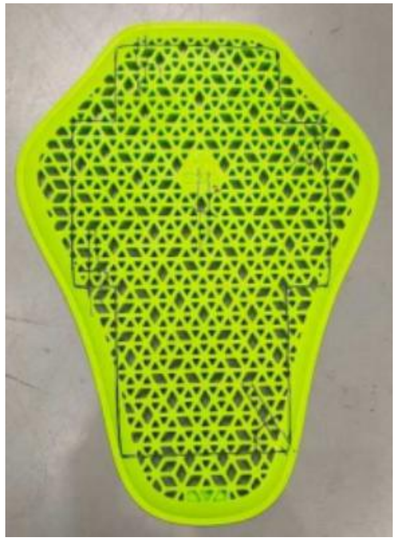


c) Lower back brace

Dimensions in the image					
A	B	C	D	E	F
72%	29%	44%	29%	32%	25%
Pour ： All measurements refer to the waist circumference of the largest user (100%).					

Area Division Before Back Protection Device Testing



Divide the back protection device into zones and select five points.

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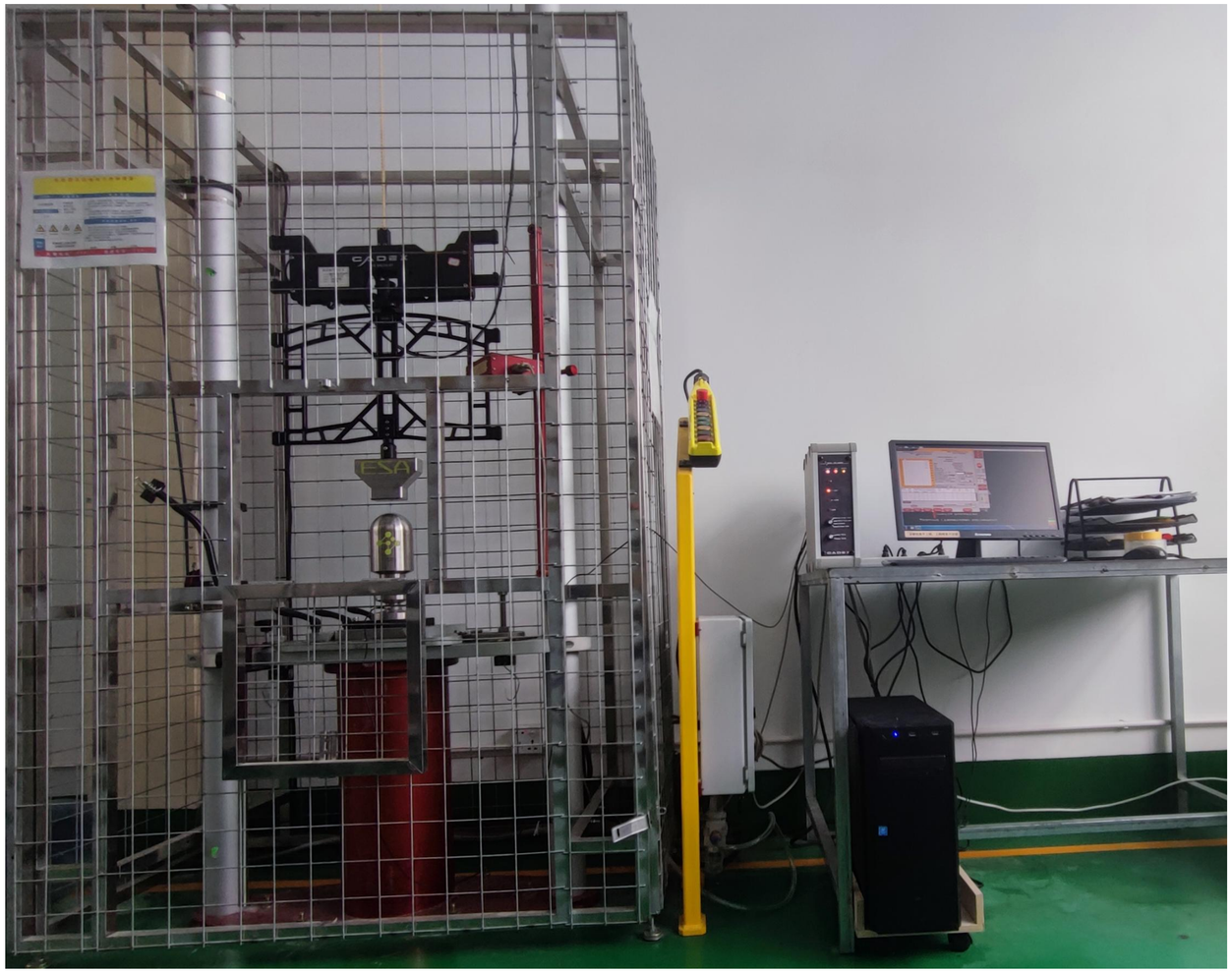
Thoracic Protective Equipment

EN 1621-3：2018
Motorcyclist Impact Protection Suit-Part 2: Experimental Requirements and Testing Methods for Chest Impact Protection Clothing for Motorcycle Drivers

Chest Protector Testing Instrument



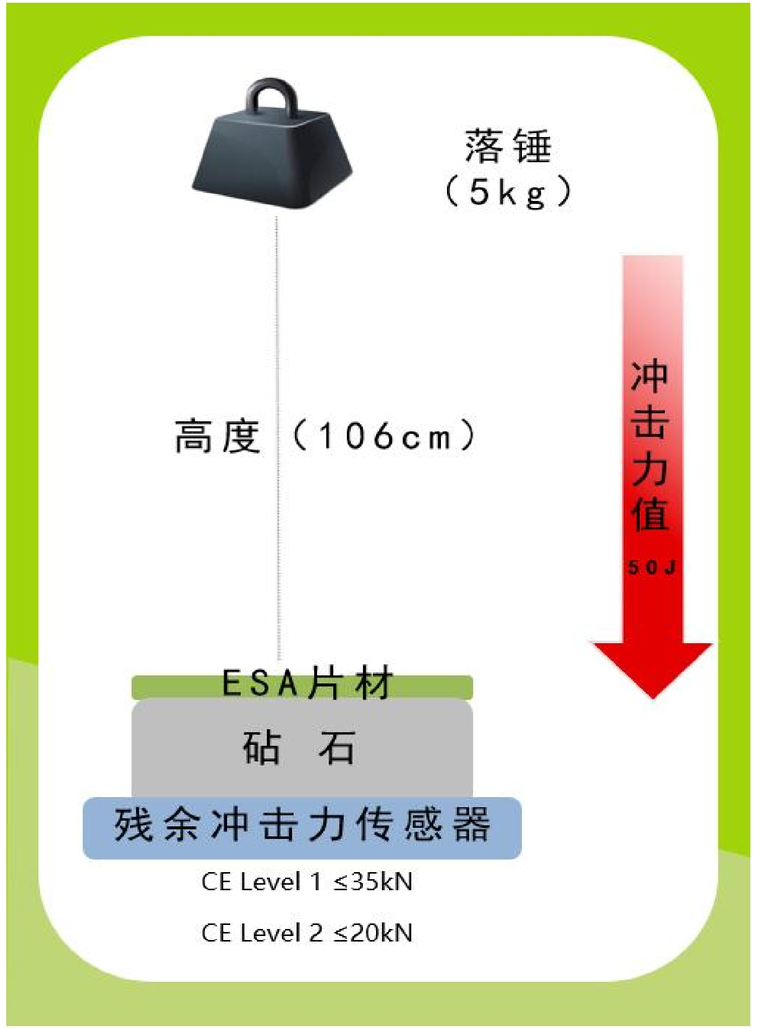
Dual Linear Guide
1000kg Collision
Tester

test method

Principle and Procedures of Chest Protector Testing Instrument

Testing was performed using the drop hammer method

Place the sample on a cutting board and impact it with a hammer head of 50J energy. The test results indicate the energy transmitted to the cutting board after being absorbed by the protective gear, measured in kN.



Test Environmental Conditions for Chest Protective Gear

Ambient Temperature Testing (mandatory)

Treatment was conducted for (48±0.5) h under conditions of temperature (23±2)℃ and relative humidity (50±5)%

Hydrolysis Test (mandatory)

1. Store the samples in a sealed chamber maintained at (70±2)℃ and 95% humidity for (72± 0.5) hours.
2. Collect the samples, seal them in a moisture-proof bag, and store them at an ambient temperature of (23±2)°C for (24±0.5) hours.
3. Remove the sample from the bag and initiate the impact test on the pre-prepared impact tester within 5 minutes.

Environmental Sim-
ulation Instrument

test method

Test Environmental Conditions for Chest Protective Gear

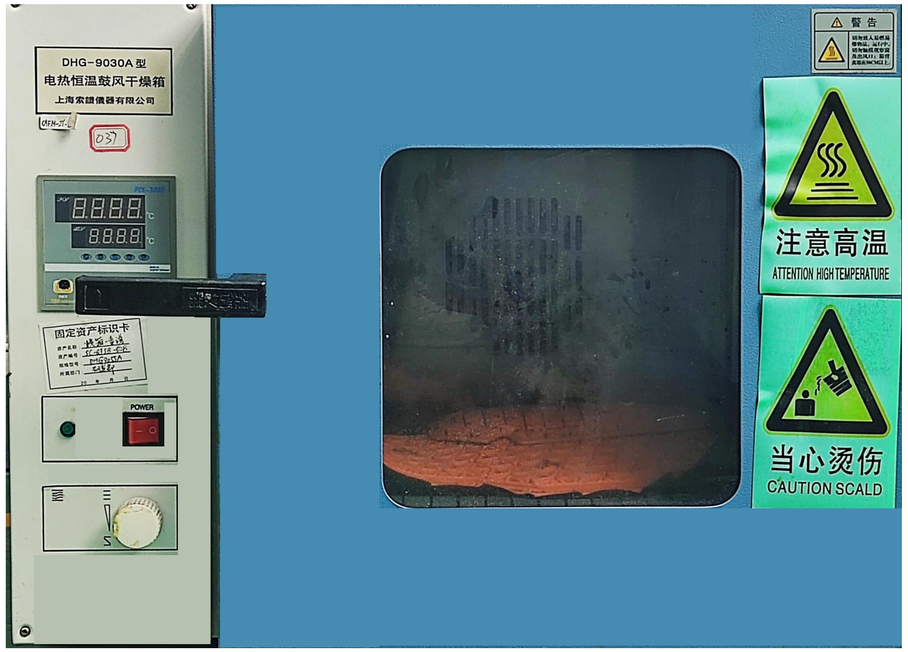
Environmental Simulation Instrument

Low-Temperature Testing (optional)

Samples should be maintained at (−10±2)°C for at least (24±0.5) hours; the impact test shall be performed within 2 minutes after removal from the freezer.

High-Temperature Testing (optional)

Samples should be processed at (40±2)℃ for (24±0.5) hours; the impact test shall be conducted within 2 minutes after removing the samples from the oven.



Oven

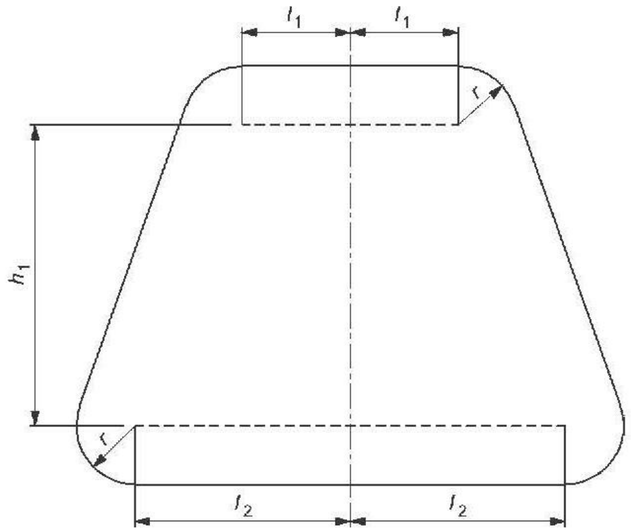
Evaluation of Impact Results for Chest Protective Gear

Impact Force Value and Performance Level

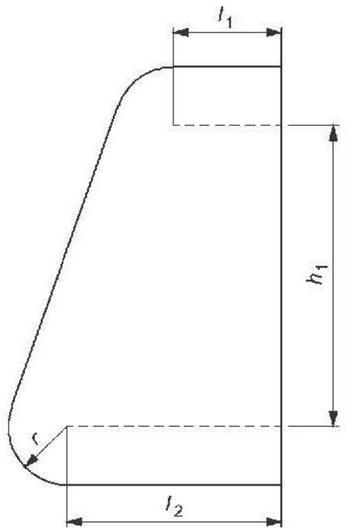
Level 1	Level 2
Mean value: ≤ 18 kN	Mean value: ≤ 15 kN
Click: ≤ 24 kN	Click: ≤ 20 kN

Impact protection tests such as environmental shock tests, wet shock tests after hydrolytic aging, and high-temperature shock tests and/or low-temperature shock tests shall only be granted when the experimental data reaches Level 1 or Level 2.

Sample Size of Chest Protection Gear



a) Full chest protect-ion



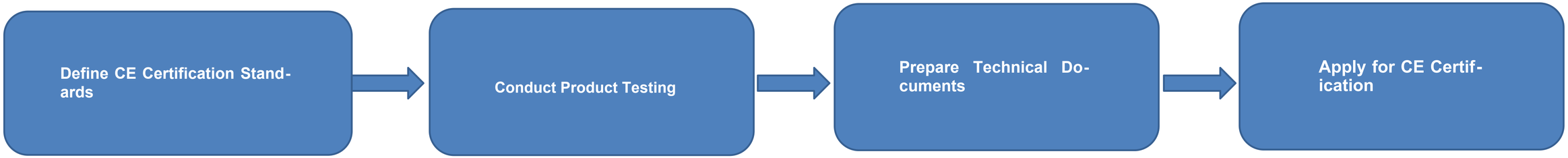
b) Split-type chest protec-tor

Shape	Dimensions in the image			
	r	l_1	l_2	h
A	25	42	84	118
B	30	50	100	140

Sample Size of Chest Protection Gear

Application Process for CE Certification of Personal Protective Equipment

In 2016, the European Union issued the new Personal Protective Equipment (PPE) Regulation (EU) 2016/425-PPE, which will come into effect on April 21,2018, replacing the previous Directive 89/686/EEC. For personal protective products, obtaining the CE mark in accordance with the PPE Directive is mandatory before export to the EU.



CE certification is divided into many standards

Applicants must first select a certification standard that suits their needs.

Enterprises must conduct testing at qualified testing institutions.

To determine whether the product complies with CE certification standards

Enterprises must submit technical documents to relevant authorities.

The document includes information such as the company name, product purpose, product structure, usage instructions, and manufacturer's statement.

After submission, the CE certification authority will conduct an audit.

Upon approval, the CE certification certificate will be issued, and authorization to use the CE mark will be granted.

Personal Protective Equipment CE Certification Body

CE test certification body:

- TUV Rheinland Group, Germany, EU Authorized Declaration Body Number: 0197.
- SATRA Technology Europe, Ltd. (UK), EU Authorized Declaration Body Number: 2777.
- Ricotest, Italy, EU Authorized Declaration Body Number: 0498.

Personal Protective Equipment CE Certification Body

CERTIFICATE
EU Type-Examination Certificate
Regulation (EU) 2016/425
Personal Protective Equipment

TÜVRheinland®

Registration No.: BP 50586616 0001

Report No.: 16087193 001

Holder: Shenzhen Innovation Advanced Materials Co., Ltd
1401, A7 Building Nanshanzhiyuan,
No. 1001 Xueyuan Avenue,
Changyuan Community, Taoyuan Street, Nanshan District, Shenzhen
Guangdong
P.R. China

Product: Protectors

Identification:

Type	Size range [cm]	Level	Weight [g ±5%]
TW-FB1	37-42	1	310

Trademark: ESA
Remark: Zones of protection: FB

The EU type-examination certificate refers to the above mentioned product. This is to certify that the product complies with the essential requirements of Annex II of the Regulation (EU) 2016/425. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder is entitled to use this certificate in connection with the declaration of conformity in accordance with Annex IX. In case of category III products this certificate shall only be used in conjunction with one of the conformity assessment procedures referred to in point (c) of Article 19 of the Regulation (EU) 2016/425.

Valid till: 22.05.2028

Notified Body

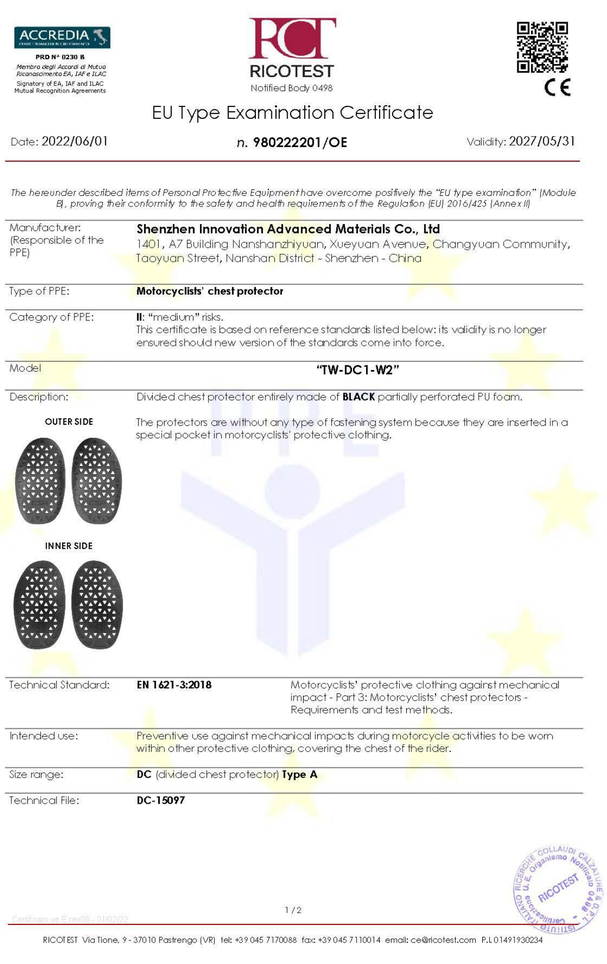
Date 23.05.2023

Tony Yan

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg
Notified by Zentralstelle der Länder für Sicherheitstechnik (ZLS).

Notified under No. 0197 to the EC Commission.

CE The CE marking may be used if all relevant and effective EC Directives are complied with. CE



ACCREDIA
PRD N° 0230 B
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

RICOTEST
Notified Body 0498

CE

EU Type Examination Certificate

Date: 2022/06/01 n. 980222201/OE Validity: 2027/05/31

The hereunder described Items of Personal Protective Equipment have overcome positively the "EU type examination" (Module B), proving their conformity to the safety and health requirements of the Regulation (EU) 2016/425 (Annex II)

Manufacturer: (Responsible of the PPE)	**Shenzhen Innovation Advanced Materials Co., Ltd** 1401, A7 Building Nanshanzhiyuan, Xueyuan Avenue, Changyuan Community, Taoyuan Street, Nanshan District - Shenzhen - China
Type of PPE:	**Motorcyclists' chest protector**
Category of PPE:	**II**: "medium" risks. This certificate is based on reference standards listed below: its validity is no longer ensured should new version of the standards come into force.
Model	**"TW-DC1-W2"**
Description:	Divided chest protector entirely made of **BLACK** partially perforated PU foam. The protectors are without any type of fastening system because they are inserted in a special pocket in motorcyclists' protective clothing.

OUTER SIDE

INNER SIDE

Technical Standard:	**EN 1621-3:2018**	Motorcyclists' protective clothing against mechanical impact - Part 3: Motorcyclists' chest protectors - Requirements and test methods.
Intended use:	Preventive use against mechanical impacts during motorcycle activities to be worn within other protective clothing, covering the chest of the rider.	
Size range:	**DC** (divided chest protector) **Type A**	
Technical File:	**DC-15097**	

1 / 2

RICOTEST Via Tione, 9 - 37010 Pastrengo (VR) tel: +39 045 7170088 fax: +39 045 7110014 email: ce@ricotest.com P.I. 01491930234

IVNAB SATRA TECHNOLOGY

Issued to: Shenzhen Innovation Advanced Materials Co., Ltd.
1401, A7 Building Nanshanzhiyuan
1001 Xueyuan Avenue, Changyuan Community
Taoyuan Street, Shenzhen City
Guangdong Province
China

Notified Body: 2777 SATRA customer number: P21031

EU Type-Examination Certificate

Certificate number: 2777/19261-01/E00-00

This EU Type-Examination Certificate covers the following product group(s) supported by testing to the relevant standards/technical specifications and examination of the technical file documentation:
Following the EU Type-Examination this product group has been shown to satisfy the applicable essential health and safety requirements of Annex II of the PPE Regulation (EU) 2016/425 as a Category II product.

Product Ref:	Protection Area:	Description:
LSC 02 CC	C	Motorcyclists' full chest protector insert consisting of Polyurethane Foam. Protectors are designed for use in specifically designed clothing.

Colour Variations:	Black and Green
Approximate Thickness of Protector	10 mm
Overall Length of Protector:	298 mm
Overall Width of Protector:	234 mm

Classification:
EN1621-3:2018 Type A, Level 1
Ambient Impact Test
Wet Impact Test after Hydrolytic Ageing

Standards/Technical specifications applied:
EN 1621-3: 2018

Technical reports/Approval documents:
SATRA: SPC0314631/2123/1, SPC0302098/2037/JS

Signed on behalf of SATRA: Geoff Graham

Date first issued: 03/11/2021
Date of issue: 03/11/2021
Expiry date: 03/11/2026

Page 1 of 2

SATRA Technology Europe Limited, Bracetown Business Park, Clonee, D15YN2P, Republic of Ireland.

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Thank You for Viewing!