HALO™

INTERNATIONAL CATALOG

ROLLOVER OCCUPANT PROTECTION SYSTEM

www.halorops.com


HALO™
LDV 077
THE BEST LEVEL OF PROTECTION

SEI

Safety Engineering International

Safety Engineering International is a vehicle safety engineering company. Our design engineers have years of experience in rollover accident investigation and dynamic vehicle testing which allows them to gain a better understanding of how injuries occur in rollovers and what precautions can be taken to prevent serious injuries. These findings are the building blocks for our HALO Rollover Occupant Protection System (ROPS).

OUR CLIENTS

AngloAmerican
bhpbilliton
Bonatti
De Beers Group
KOMATSU
MADISA CAT
PEMEX
RioTinto
SEMPRA
TC Energy
VALE

THE BEST LEVEL OF PROTECTION

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HALO CHARACTERISTICS

The HALO consists of a geometrically optimized tubular structure mounted on the vehicle roof and a system of internal reinforcement plates below the internal trim panels.

HALO distributes the force across the vehicle's vertical pillars, while drawing on the vertical support added by internal reinforcements.

HALO doesn't interfere with any internal safety equipment such as side or curtain airbags, or seat belt pretensioners.

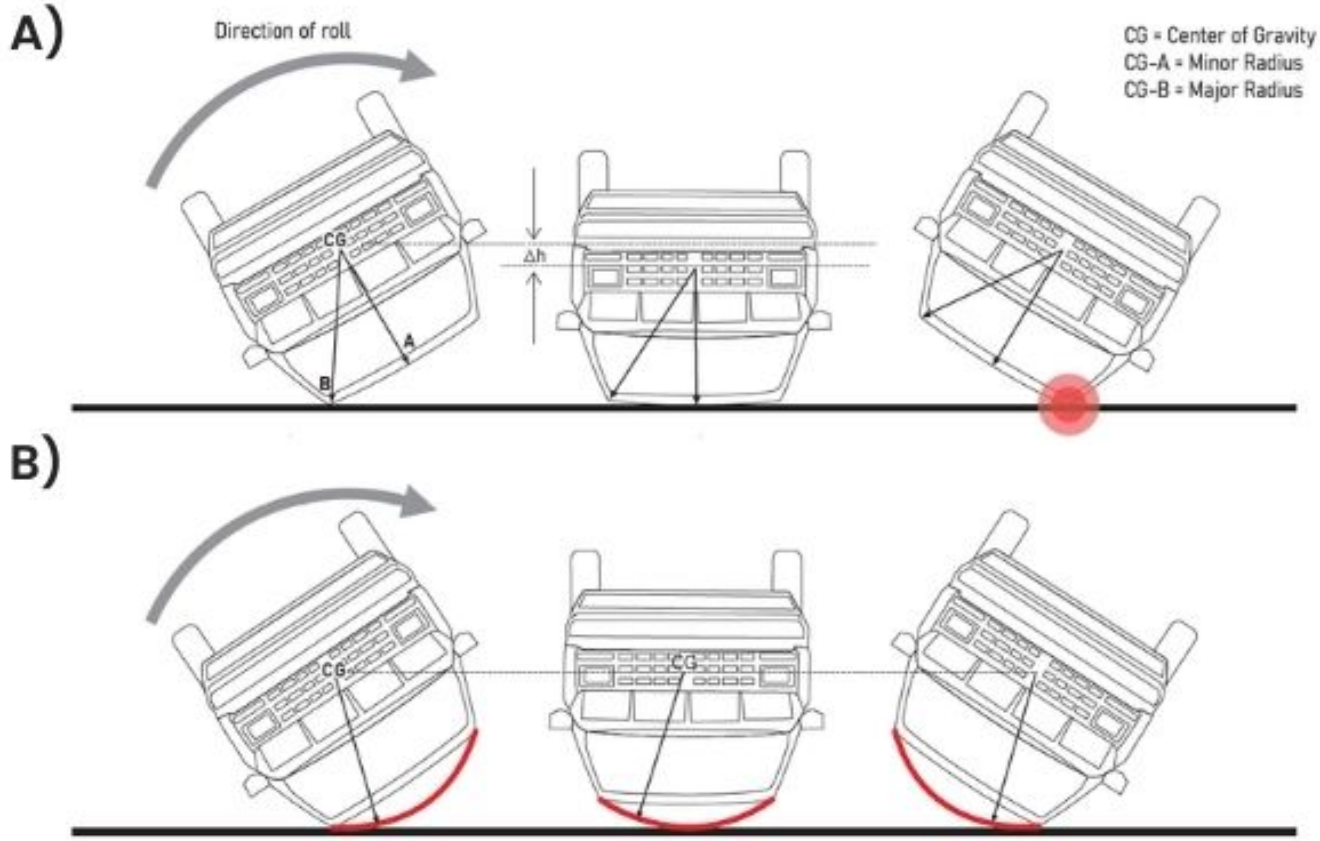
Weighing between 40 to 50 kilograms, the HALO doesn't affect the vehicle's center of gravity or reduce fuel efficiency.

HOW THE HALO WORKS

The HALO's patented design adds an external roll hoop that changes the rolling geometry of the vehicle.

A) Without HALO, the CG drops to the Minor Radius and the weak roof collapses on the trailing side corner.

B) With HALO: The CG maintains the Major Radius and prevents collapse on the trailing side corner.



- Maintains the vehicle's roll radius characteristic allowing the vehicle body to roll more smoothly.
- Distributes the roof loads across the roof surface allowing for smooth and even roof structure ground loading.
- Minimizes roof intrusion and speed at the A and B Pillars which keeps the roof up and away from the occupants.

RESEARCH AND TESTING

FINITE ELEMENT ANALYSIS

Crew Cab Truck Roll Over Simulation Testing

Without HALO | With HALO

DYNAMIC PROTOTYPE TESTING

50th Percentile Dummy - Live Roll Over Test

Before | After

HALO SAVES LIVES

REAL WORLD RESULTS

Thousands of trucks all over the world are equipped with our products protecting lives. In over 80 rollover accidents, there were no injuries to the belted occupants of these vehicles. The HALO keeps the occupant survival space intact and your workers safe.

SAFETY BY DESIGN

BRAND MODELS

Ford

ISUZU

Mahindra

mazda

MITSUBISHI

NISSAN

RAM

TOYOTA

DESIGN SERVICES

We can design a HALO ROPS for any type of vehicle. If you don't see a brand model that you wish to purchase, please contact us with your inquiry: info@safetyei.com

DOUBLE CAB TRUCKS

HR15D - DODGE RAM 1500 DOUBLE CAB

H16 - TOYOTA HILUX DOUBLE CAB

H51 - MITSUBISHI L200 DOUBLE CAB

H19 - NISSAN NAVARA DOUBLE CAB

SINGLE CAB TRUCKS

H14 - TOYOTA LANDCRUISER 79 SINGLE CAB

H11 - ISUZU DMAX SINGLE CAB

HR15D - DODGE RAM 1500 SINGLE CAB

H17 - TOYOTA HILUX SINGLE CAB

HALO MODELS

MAKE	YEAR RANGE	MODEL
DODGE RAM 1500/2500 SINGLE CAB	2016 - 2022	HR15SXL
DODGE RAM 1500/2500 DOUBLE CAB	2016 - 2022	HR25DXL
FORD RANGER DOUBLE CAB	2013 - 2022	H9AKIT
FORD RANGER SINGLE CAB	2016 - 2022	H24AKIT
FORD RANGER SINGLE CAB	2023 +	H25AKIT
FORD RANGER DOUBLE CAB	2023 +	H26AKIT
FORD F-250/F-350 DOUBLE CAB	2018 - 2022	HF35DXL
ISUZU KB250 DMAX SINGLE CAB	2014 - 2022	H11AKIT
ISUZU KB250 DMAX DOUBLE CAB	2014 - 2022	H12AKIT
ISUZU GEN 7 DOUBLE CAB	2023 +	H22AKIT
ISUZU GEN 7 SINGLE CAB	2023 +	H23AKIT
MAZDA BT-50 DOUBLE CAB	2015 - 2022	H3AKIT
MIHANDRA PIK UP DOUBLE CAB	2019 +	H18AKIT
MITSUBISHI L200 DOUBLE CAB	2010 - 2015	H5AKIT
MITSUBISHI L200 DOUBLE CAB	2016 +	H51AKIT
NISSAN NP300 HARDBODY DOUBLE CAB	2015 +	H13AKIT
NISSAN NP300/NAVARA DOUBLE CAB	2016 +	H19AKIT
NISSAN NP300/NAVARA SINGLE CAB	2016 +	H21AKIT
TOYOTA HILUX DOUBLE CAB	2010 - 2015	H6AKIT
TOYOTA HILUX SINGLE CAB	2010 - 2015	H10AKIT
TOYOTA HILUX DOUBLE CAB	2016 +	H16AKIT
TOYOTA HILUX SINGLE CAB	2016 +	H17AKIT
TOYOTA LANDCRUISER 79 SINGLE CAB	2014 +	H14AKIT
TOYOTA LANDCRUISER 79 DOUBLE CAB	2015 +	H15AKIT

Scan the QR code to see the full details about each model.

SAFETY BY DESIGN

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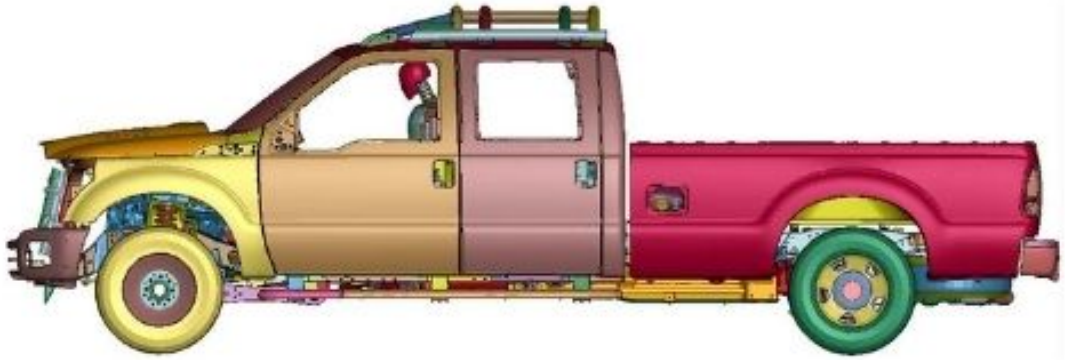
QUALITY TEST REPORTS

ISO 3471:2008 Test Report

Performance requirements for Heavy Machinary ROPS



Test Results and Criteria

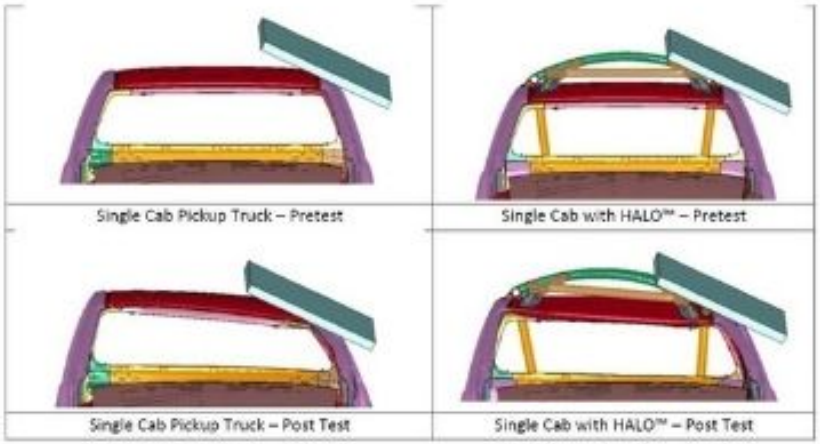
Lateral Loading	Attained	Min required	Max allowed
Max force	23400 N	9818 N	
Absorbed energy	750 J	709.5 J	
Max displacement	51.3 mm		250 mm
Vertical Loading			
Maximum force	32300 N	32100 N	
Max displacement	2.5 mm		117 mm
Longitudinal Loading			
Maximum force	10400 N	7909 N	
Max displacement	10.1 mm		450 mm

ANAB ACCREDITED ISO/IEC 17065 MANAGEMENT SYSTEMS CERTIFICATION BODY

ISO 9001:2015 Quality Management Certified Manufacturing

SWR Analysis Report

Evaluation of FMVSS No. 216a, Roof Crush Resistance Standard



Vehicle Weight		Lbs/Kg
Single Cab		4032/1829
	Base Vehicle	**HALO Equipped**
Force lbs withstood	9441	24728
Resultant SWR	**2.34**	**6.13**

Scan the QR code to access and read the full reports.

WORLD WIDE DISTRIBUTION

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INTELLECTUAL PROPERTY

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