

Road Safety Products

Steel Guardrail / Bridge Railing / Haco Guardrail
Crash Cushion / Noise Barrier / Temporary Barriers



COMPANY OVERVIEW

ISO 9001:2015 CERTIFICATION



CAHAYA AULIA SDN. BHD.

Cahaya Aulia Sdn Bhd: Malaysia's newest "glory and shining light" - SIRIM certified guardrail and system scaffolding manufacturing company.

Just like how star forming regions fuse together to create stars, Cahaya Aulia Sdn Bhd was born from the collaboration of several leading companies, each mastering in one of the utmost integral company that produces high quality guardrails, high quality noise barriers, and high quality system scaffolding etc.

Cahaya Aulia Sdn Bhd offers expertise from all the above industries and knowledge in both international and Malay standards. With the support of its Korean partner who, has 40 years experience in production . With the support of its Malay partners, Cahaya Aulia is well equipped with knowledge and experience with local standards in product finishes and installation processes.

Cahaya Aulia Sdn Bhd is ready to share its glorious light and expertise with you.

BUSINESS AREA

Guardrail



Crash Cushion



Noise Barrier



Temporary Noise Barrier



System Scaffolding



Temporary Barriers

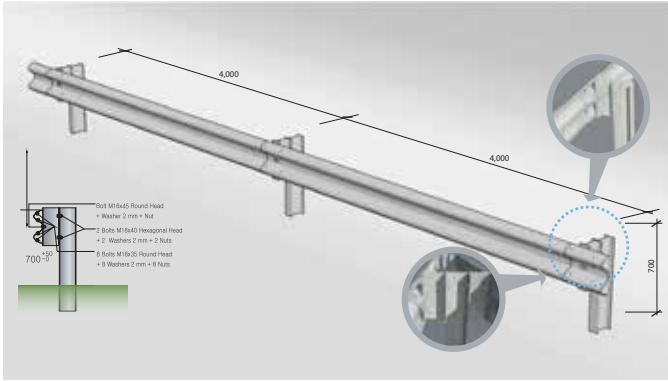


GUARDRAILS

Dependable Quality & Durability
Customizable & Cost Effective

MS Standard (AASHTO M180)

W-Beam/Thrie-Beam



SPECIFICATIONS

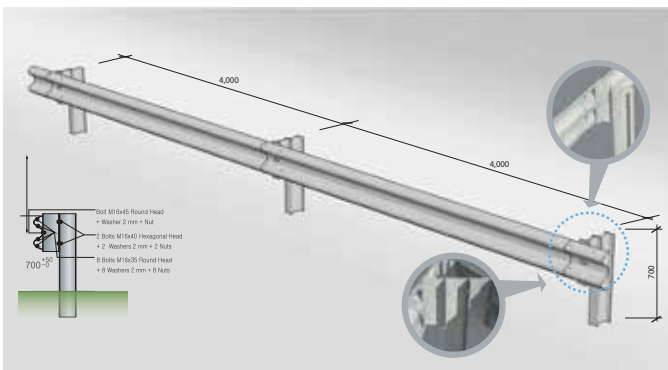
Type	Dimensions (mm)	Thickness Base Metal (JIS G 3444, STK 490)		Zinc Coating (Prime Western)	
		Class A	Class B	Type I	Type II
W-Beam	4320x312x2.74t	2.67mm	3.43mm	550g/m2	1100g/m2
Thrie-Beam	4320x504.9x2.74t	2.67mm	3.43mm	550g/m2	1100g/m2

*Tolerance Follow MS Standard AASHTO M180
*We offer a variety of thicknesses according to the buyer's request.

SIRIM CERTIFIED

No Lesen	Standard (s)	Type	Size
PC004220	AASHTO M 180:2012	Type II-Zinc Coated 1100g/m ²	Thickness Base Metal=2.67T

Posts and blocks



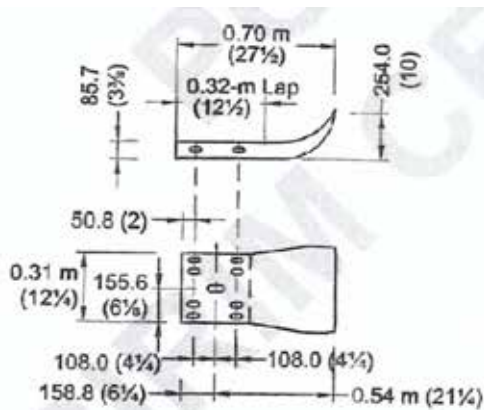
SPECIFICATIONS

Type	Dimensions (mm)	tensile strength and yield strength (Mpa)		Zinc Coating (Prime Western)	
		YS	TS	Type 1	Type 2
Post	178x76x1830x6t	Min 345	Min 483	550g/m2	1100g/m2

*Tolerance Follow MS Standard AASHTO M180
*We offer a variety of thicknesses according to the buyer's request.

End Treatments

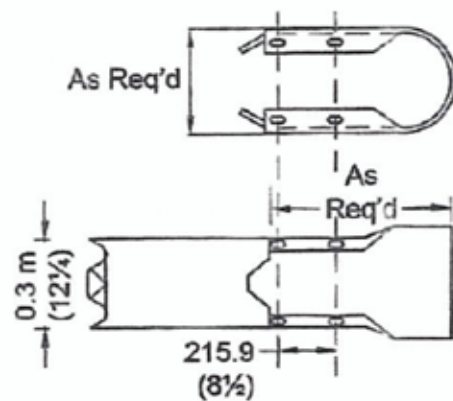
END SECTION



Type	Dimensions (mm)	Thickness Base Metal (JIS G 3444, STK 400)		Zinc Coating (Prime Western)	
		Class A	Class B	Type 1	Type 2
End Section	750x312x2.74t	2.67mm	3.43mm	550g/m2	1100g/m2

*Tolerance Follow MS Standard AASHTO M180
*We offer a variety of thicknesses according to the buyer's request.

BUFFER END



Type	Dimensions (mm)	Thickness Base Metal (JIS G 3444, STK 400)		Zinc Coating (Prime Western)	
		Class A	Class B	Type 1	Type 2
Buffer End	2200x406x2.74t	2.67mm	3.43mm	550g/m2	1100g/m2

*Tolerance Follow MS Standard AASHTO M180
*We offer a variety of thicknesses according to the buyer's request.

Bridge Railing

Bridge Railing Type



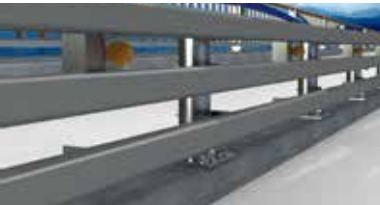
Two Railing Road Side Type

Test Level	Size(mm)	Rail Thickness	Span	Stage
TL2 Equivalent	H850*W3000*D150	3.2mm	5995mm	Two-Stage Beam



Two Railing Median Type

Test Level	Size(mm)	Rail Thickness	Span	Stage
TL3 Equivalent	H850*W3000*D150	3.2mm	5995mm	Two-Stage Beam x 2



Three Railing Road Side Type

Test Level	Size(mm)	Rail Thickness	Span	Stage
TL4 Equivalent	H900*W2000*D150	4.0mm & 3.2mm	5995mm	Three-Stage Beam

INSTALLATION CASES IN MALAYSIA

SIEERAMS , JKR ROAD



Ramp A & B , 4th WIDENING PROJECT , PLUS EXPRESSWAY



Km 28 , JALAN DUTA , PLUS EXPRESSWAY



Km 275 , IPOH PLUS EXPRESSWAY



HACO Guardrail



Specification	
Material	High Anti Corrosion Steel
Surface Treatment	ZN - MG - AL Coated
W Beam Size	4,320mm x 312mm x 2.67mm
C Channel Post Size	178mm x 76mm x 6mm
W Beam Weight	45.5 kg

*Tolerance Follow MS Standard AASHTO M180

*We offer a variety of thicknesses according to the buyer's request.



3 x higher corrosion resistant properties



Self healing mechanisms



High corrosive resistance against neutral salt & acid rain

WHY HACO GUARDRAIL



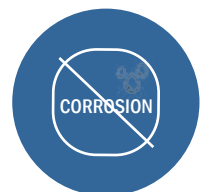
Lower cost factor than existing guardrails as it reduces maintenance and replacement costs due to corrosion as time progresses.



A longer replacement period, achieving a greater economic benefit. HACO will extend the life of any road asset up to 20 years.

HACO Guardrail Main Feature

- High Corrosion resistant allow coating steel sheet
- Magnesium(Mg) + Aluminium(Al) + Zinc (Zn)
- Excellent corrosion resistance on planar portion
- Self healing on areas with minor afflicted abrasions (scrape, scratch)
- Protective and durable against acid rain
- Protective and durable against salt
- Protective and durable calcium chloride
- It surface more smooth & shinny (self clean)



HACO Guardrail

Corrosion Resistance comparison between HACO and HDG Guard rail



Elimination of surface rusted areas are impossible to remove Even if the rusted surface has been removed, the rust has already infiltrated inside, weakening the strength of the steel.

HACO Warranty 20 Years



EuroSMART CUSHION

AVAILABLE FOR SPEEDS:
50km/h, 80km/h, 100 km/h and 110km/h

EN1317 Crash Cushion



Type	Length(mm)	Width(mm)	Height(mm)	Weight(kg)
euroSMART 110	9,200	840	940	1,300



Type	Length(mm)	Width(mm)	Height(mm)	Weight(kg)
euroSMART 100	5,900	840	940	880

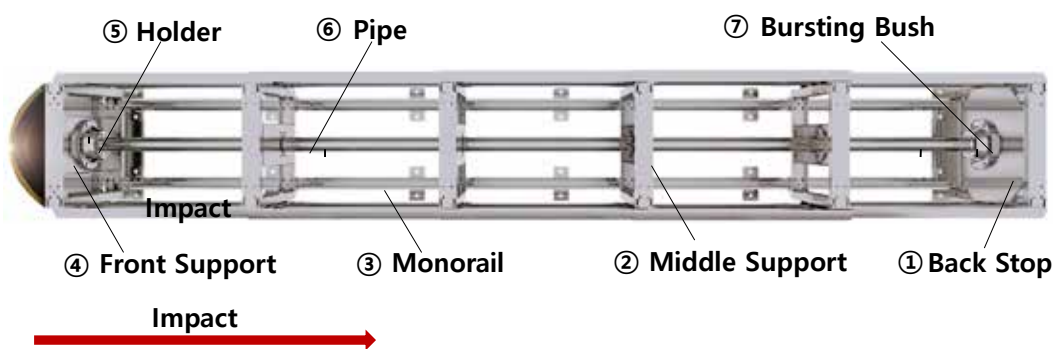


Type	Length(mm)	Width(mm)	Height(mm)	Weight(kg)
euroSMART 80	4,800	840	940	740



Type	Length(mm)	Width(mm)	Height(mm)	Weight(kg)
euroSMART 50	2,600	840	940	460

SMART CUSHION'S CORE TECHNOLOGY



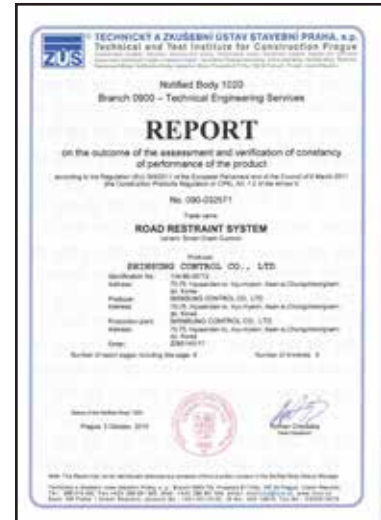
Pipe Maintenance



EN1317 Crash Cushion

TESTED PERFORMANCE & CERTIFICATION

SSC's euroSMART systems have been fully tested using EN 1317-1 and 3 for performance speeds of 50km/h, 80km/h, 100km/h and 110km/h.



Impact Energy Absorbing Technology

Third-Party Products



VS

SSC Products



INSTALLATION CASES



MALAYSIA
Bayan Lepas Expressway, Toll Plaza Ainsdale, Kuala Kangsar Interchange



NOISE BARRIERS



Absorptive Noise Barriers

SPECIFICATIONS

PERFORATED TYPES



GALLERY TYPE



PUNCHING TYPE



RIBBED SHELL PUNCHING TYPE

HIGH PERFORMANCE TYPES

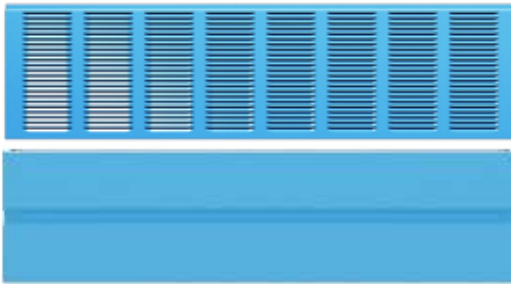


DOUBLE FACE TYPE



HIGH SPEED RAILWAY TYPE

Front Panel



Rear Panel

Component	Material Selection	SPEC
Front Plate	Aluminum, High Anti Corrosion Steel	0.6T ~ 1.2T
Rear Plate	Galvanized steel, High Anti Corrosion Steel	1.0T ~ 1.6T
Side Plate	Galvanized steel, High Anti Corrosion Steel	1.2T ~ 1.6T
Rivet Fastener	Blind rivet: Aluminum	4Φ x 10
Absorptive Infill	Glass wool, Polyester, Mineral wool	Varying thickness and densities
Encapsulating Film	PE, PVF, ETFE	
Finish	PVDF, Powder Coating (Light reflectance 10% max)	

	Length (mm)	Width (mm)	Thickness (mm)
SIZE	1960 / 2960 / 3960 / 400-5000	500	60~100T

TESTED PERFORMANCE



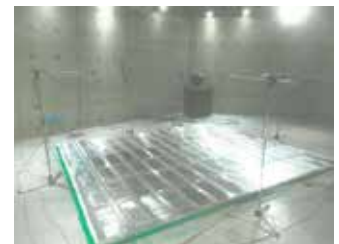
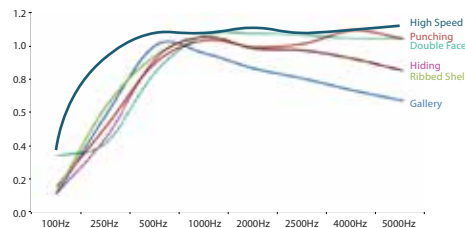
Sound absorption and sound insulation tests will be conducted by the Korean Marine Equipment Research Institute, an accredited and authorized testing laboratory by KOLAS (a member of ILAC MRA)



Sound Absorption Performance
Test Standard: ISO 354:2003 and ASTM C 423:17

	100Hz	250Hz	500Hz	1000Hz	2000Hz	2500Hz	4000Hz	5000Hz	NRC
Gallery	0.13	0.60	1.01	0.96	0.87	0.81	0.74	0.68	0.86
Punching	0.17	0.53	0.91	1.04	1.00	1.02	1.10	1.05	0.87
Ribbed Shell	0.14	0.65	0.95	1.06	0.99	0.98	0.93	0.86	0.91
Double Face	0.35	0.43	0.85	1.07	1.08	1.07	1.05	1.05	0.86
Hiding	0.13	0.46	0.93	1.06	0.99	0.98	0.93	0.86	0.86
High Speed	0.38	0.93	1.08	1.08	1.11	1.08	1.10	1.12	1.05

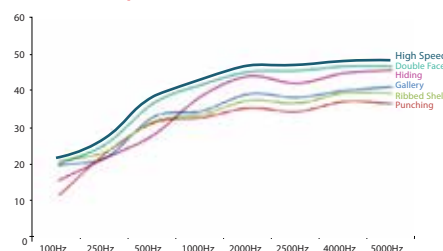
NRC = Up to 1.05



Sound Insulation Performance
Test Standard: ISO 10140-2:2010 and ASTM E 413:2016

	100Hz	250Hz	500Hz	1000Hz	2000Hz	2500Hz	4000Hz	5000Hz	STC
Gallery	20.3	22.6	33.6	35.1	39.8	38.8	40.7	41.7	32.8
Punching	12.2	23.9	32.0	33.4	36.0	35.0	37.8	37.2	31.3
Ribbed Shell	21.6	24.2	32.5	34.2	38.1	37.3	40.1	40.0	32.3
Double Face	20.8	26.3	37.5	42.5	46.0	46.3	47.5	47.6	38.1
Hiding	16.3	22.5	28.8	39.4	44.9	42.9	45.7	46.5	33.9
High Speed	20.8	27.3	37.5	42.5	46.0	46.3	47.5	48.6	45.0

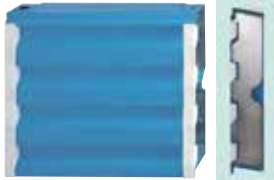
STC = Up to 45



Isolation Noise Barriers

Specifications

STEEL



Component	Material Selection	SPEC
Front Plate	Aluminum, High Anti Corrosion Steel	0.6T ~ 1.2T
Rear Plate	Galvanized steel, High Anti Corrosion Steel	1.0T ~ 1.6T
Side Plate	Galvanized steel, High Anti Corrosion Steel	1.2T ~ 1.6T
Rivet Fastener	Blind rivet: Aluminum	4Φ x 10
Absorptive Infill	Glass wool, Polyester, Mineral wool	Varying thickness and densities
Finish	Honey Comb	

TRANSPARENT



Components	Material Selection	SPEC
Frame	Aluminum	1.2T
Window	PMMA, PC, Glass	8T ~ 10T
Gasket	Custom Rubber	

	Length (mm)	Width (mm)	Thickness (mm)
Steel	1960 / 2960 / 3960 / 400-5000	500	60~100T
Transparent	1960 / 2960 / 3960 / 400-5000	500	60 - 95T

Tested Performance

Sound absorption and sound insulation tests will be conducted by the Korean Marine Equipment Research Institute, an accredited and authorized testing laboratory by KOLAS (a member of ILAC MRA)



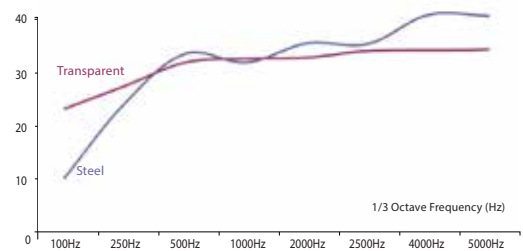
Sound Insulation Performance

Test Standard: ISO 10140-2:2010 and ASTM E 413 2016

STC = Up to 40.4

	100hz	250hz	500hz	1000hz	2000hz	2500hz	4000hz	5000hz	STC
Steel(95t)	9.9	23.6	32.7	31.1	34.6	34.5	39.8	39.6	30.5
Transparent(95t)	22.6	26.8	31.1	31.8	32.0	33.2	33.0	35.5	40.4

(Grade: 500Hz : 25 ↑ 1000Hz : 30 ↑)



Accreditation & Test Standards

Sound Isolation & Absorption Test



Fire Hazard Rating HB40 / Fire Ignitability



Impact Test Tests



Tensile & Flexural Strength Test & Wind Deflection Test



Temporary Noise Barriers

CASB Smart™ NB Series

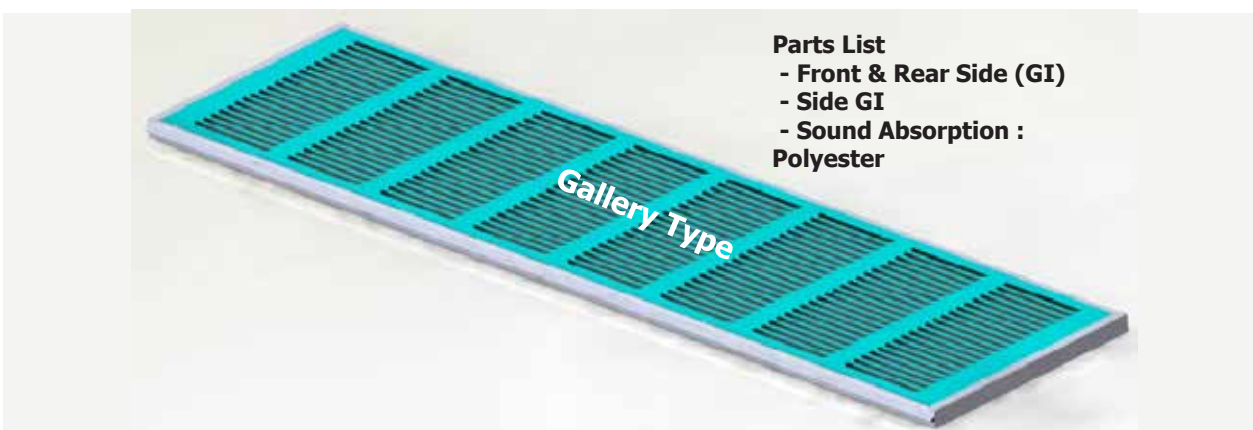
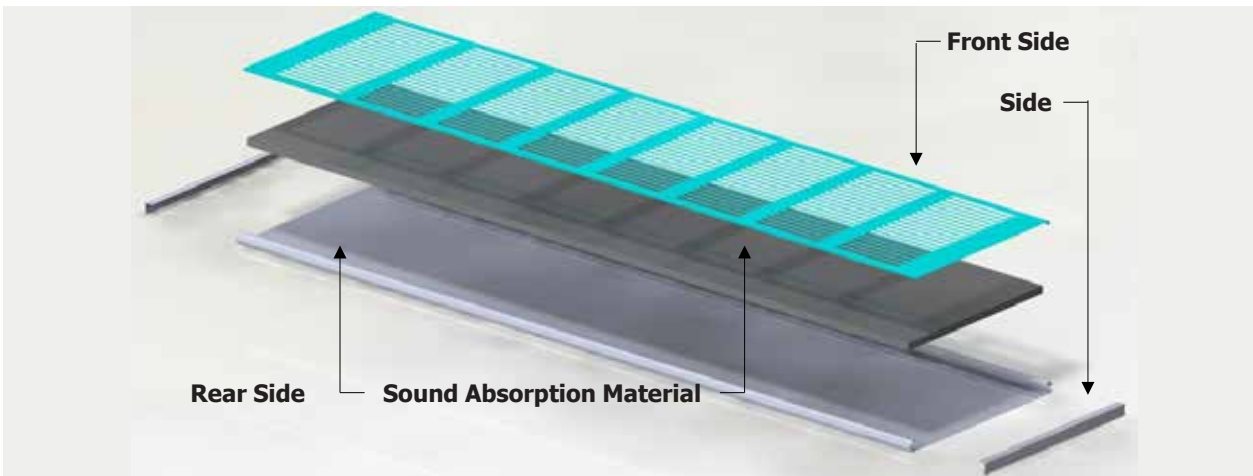
CASB's **SMART NB Series**, is a temporary noise barrier that has been developed specially for the needs of constructions sites. This gallery type noise absorption barrier is the ideal choice and efficient noise absorptive capabilities while also acting as a durable wall.

Durable and reusable, panels are made of hot dipped galvanized steel

- ▶ Quick and easy installation by using H beam supports and concrete foundation.
- ▶ Customizable, available in a variety of colors & designs with using powder coating.
- ▶ High noise absorption capabilities with a NRC value of up to 0.63
- ▶ High reinforcement with thinner but stronger lightweight steel and longer maintenance by using hot dipped galvanized steel.
- ▶ Proven test results by the authorized Test Institution, PSB Singapore and KCL Korea.

Product Description and Specifications

Name	Thickness (mm)	Width (mm)	Length (mm)	Weight (Kg)
SMART NB-01	30	500	1960	11.7
SMART NB-02	30	500	1960	16



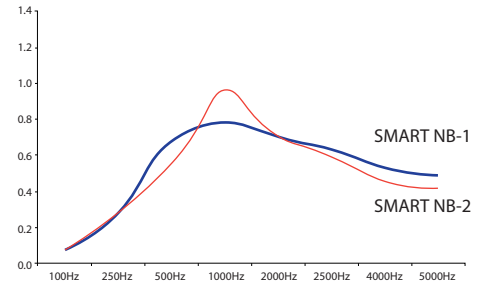
Temporary Noise Barriers

SSC Smart™ NB Series Tested Performance



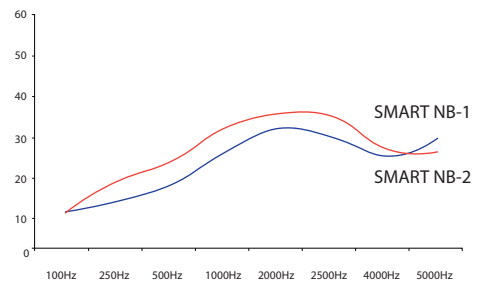
Sound Absorption Performance
Test Standard: ISO 354:2003 and ASTM C 423:17

	125hz	250hz	500hz	1000hz	2000hz	2500hz	4000hz	5000hz	NRC
SMART NB-1	0.07	0.29	0.67	0.79	0.70	0.63	0.54	0.48	0.60
SMART NB-2	0.07	0.29	0.57	0.96	0.70	0.59	0.45	0.41	0.63



Sound Insulation Performance
Test Standard: ISO 10140-2:2010 and ASTM E 413

	100hz	250hz	500hz	1000hz	2000hz	2500hz	4000hz	5000hz	STC
SMART NB-1	11.6	14.1	18.5	25.6	32.1	30.1	25.9	30	25
SMART NB-2	11.3	19.1	24.5	32.3	36.9	36.3	27.4	26.5	29



TEMPORARY BARRIERS

HV2 & Ironman Hybrid Barriers

SHINSUNGCONTROL CO.,LTD and CAHAYA AULIA SDN. BHD. companies are the only companies that can sell this product as a monopoly in East Asia, Southeast Asia and Middle East region under solo license of Saferoads, AVS.

HV2 Barrier



Specification	
Effective Length	5.8m
Height	900mm
Width	450mm
Weight	2088kg
Successfully Tested To	MASH TL-4
Multiple End Treatments Can Be Used	Yes

With patented hybrid technology and unique connectors, the HV2 Safety Barrier offers high containment and low deflection upon impact. With no time-consuming anchoring required, this barrier has been successfully tested to MASH TL-4.

Ironman Hybrid Barrier



Specification	
Effective Length	4.1m
Height	813mm
Width	546mm
Weight	925kg
Successfully Tested To	NCHRP 350 TL-3
ASBAP Approval To	80km/h

Designed to protect workers and motorists, The Ironman Hybrid barrier offers a fully compliant, crash tested barrier made to Australian standards. Its lightweight and stackable design allows up to 96 meters to be transported on one truck, offering huge transport savings when compared to traditional concrete barriers. Saferoads Ironman Hybrid safety barriers even allows curves of up to six degrees, ensuring it follows the road perfectly.

SECURITY BOLLARDS

OmiStop Bollards

SHINSUNGCONTROL CO.,LTD and CAHAYA AULIA SDN. BHD. companies are the only companies that can sell this product as a monopoly in East Asia, Southeast Asia and Middle East region under solo license of Saferoads, AVS.

OmniStop Bollards Portable System



Specification	
Height	1076mm/42in
Width	1200mm/47in
Weight	1076mm/42in
Diameter	150mm/6in

Innovative and unique, the OmniStop Portable Security System has been designed to offer superior protection for temporary applications. Designed to stop out of control vehicles and protect passers-by, they are a must for high-density pedestrian areas.

OmniStop Super Duty



Specification	Bollard Only	Sleeve	Reo Cage
Length	1450mm/57in	500mm/16in	1650mm/65in
Diameter	150mm/6in	155mm/6.1in I.D 165mm/6.5in O.D	450mm/17in
Weight	94kg/207lbs	-	113kg/249lbs

The OmniStop Super Duty security bollard is designed control errant vehicles weighing up to 2270kgs. This bollard is crash tested and can be, relied upon to reduce the amount of damage that occurs when an errant vehicle attempts to enter a pedestrian dense area.

OmniStop Ultra



Specification	Bollard Only	Sleeve	Reo Cage
Length	1450mm/57in	500mm/20in	800mm/31in
Diameter	150mm/6in	155mm/6in I.D 165mm/6.5in O.D	550mm/21in
Weight	67.5kg/149lbs	-	34kg/75lbs

OmniStop Ultra security bollard is designed control errant vehicles weighing up to 1600kgs. This bollard is crash tested and can be relied upon to reduce the amount of damage that occurs when an errant vehicle attempts to enter a pedestrian dense area.





CAHAYA AULIA SDN.BHD
(Co.No.1162368-XI)



ROAD SAFETY
GUARDRAIL



ROAD SAFETY
CRASH CUSHION



CONSTRUCTION
SCAFFOLDING



ROAD SAFETY
NOISE BARRIER



TEMPORARY CONSTRUCTION
TEMPORARAY NOISE BARRIER



TEMPORARY CONSTRUCTION
TEMPORARY BARRIER

CAHAYA AULIA SDN.BHD

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