



Roofing Association Singapore

a member of  SPECIALISTS TRADE
ALLIANCE OF SINGAPORE



Working On Fragile Surfaces

Roofing Association Singapore



Tripartite Alliance for
Workplace Safety and Health

Safety Time Out 2022

Tragically, there were 10 fatal workplace accidents in April 2022 alone. We are again facing an alarming spate of workplace fatal accidents, which is more than double the average Pre-COVID level.

The WSH Council and RAS had jointly called on members to conduct a Safety Time Out (STO) in the 9 May to 20 May period.

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A number of the incidents in April 2022 were incidents where there was works on fragile surfaces and/or working at height.

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3 Areas of concern:

- Maintenance of Existing Roofs
- Construction of New Roofs
- Designing Future Roofs

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Tripartite Alliance for
Workplace Safety and Health

Safety Time Out 2022

Maintenance of Existing Roofs:

- Safe access to the area of work
- Proper PPE is used at all times
- Never step on fragile surfaces where integrity is unknown
- Make use of existing fall protection systems

* Suggested systems should there be no existing fall protection systems

Suggested systems should there be no existing fall protection systems



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MSA Latchways WalkSafe®



BBA certified

WalkSafe holds a BBA Agreement certificate A2090302 for metal, membrane and traditional roofing systems, for use in providing anti-slip walkways across flat roofs, in roof valleys and full valleys, for access and maintenance traffic.



Bespoke/prefabricated test compliance

WalkSafe meets the standard EN1016 – Class 1-C



Corrosion & moisture resistant

WalkSafe is manufactured from extruded PVCu planks and support beams, injection moulded PVCu end caps with stainless steel fixings and fasteners ensuring WalkSafe is both highly corrosion and moisture resistant.



Fire safety

WalkSafe is fire resistant and self-extinguishing. It complies with BS476 Part 7:1987 – Class 1 (1) Self extinguishing.



Roofing system manufacturer approval

Over the last 15 years MSA has established close working relationships with the leading roofing system manufacturers from each of the key market segments. In many cases, the use of MSA Latchways products is directly linked to the overall roofing warranty/guarantee offered by the roofing manufacturer.



Impact resistant fall proof covers for fragile roofs and rooflights

Assurance regarding the strength of Latchways walkways is provided by WalkSafe meeting the following standards:

- Resistance to impact: Soft body to M047 11.3.1.13.
- Hard body to M047 11.3.1.13.
- Fragility Test: ACR M0 081
- Tensile impact strength: BS2782-3.35(48)



Slip resistant

Safety when using the walkways is guaranteed which is covered by the system achieving the BBA requirement – Slip Resistance BBA T1110 with a coefficient of friction Dry 0.57 Wet 0.51.



Severe UV exposure tested

In addition to the BBA certificate, WalkSafe has undergone the European Organisation for Technical Approvals (EOTA) TR 010 25 year severe climate exposure test. As such, the product has been classified 'S' for use in severe climates.



Product quality and recyclability

As an ISO 14001 EMS and ISO 9001 QMS accredited company, Latchways understand the importance of using products that can be recycled whilst offering long term durability. The main component parts used to manufacture white Latchways WalkSafe are recycled PVCu.

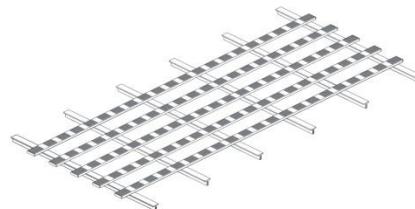


Latchways® WalkSafe

Technical Datasheet: Installation



MSA Latchways WalkSafe Fallproof covers
Fall proof covers for flush/inline rooflights



WE KNOW WHAT'S AT STAKE.

66307-99-03

MSAsafety.com



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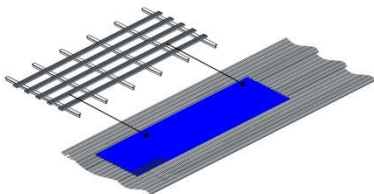
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Suggested systems should there be no existing fall protection systems

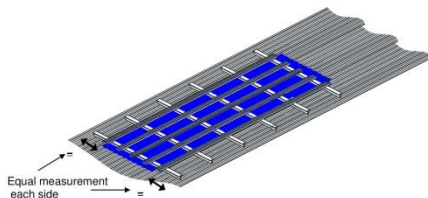


Fallproof cover fitting procedure.

Place the fallproof cover over the rooflight taking care not to step on the rooflight.



Adjust the position of the fallproof cover to ensure that the T-Bearers are resting on the solid roof area each side of the rooflight and the overlap is equidistant either side.



Construction of New Roofs:

(Fragile Surfaces may not be brittle yet, but should not be taken for granted)

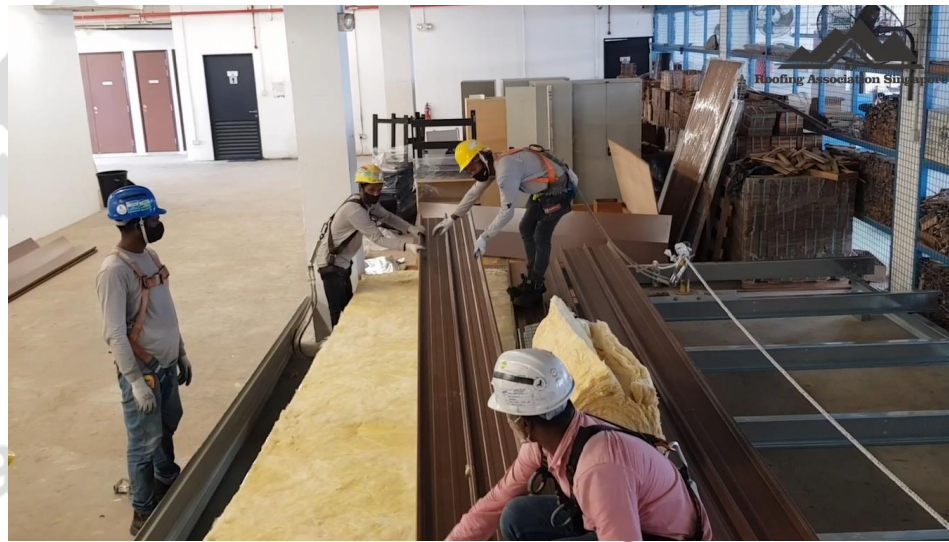
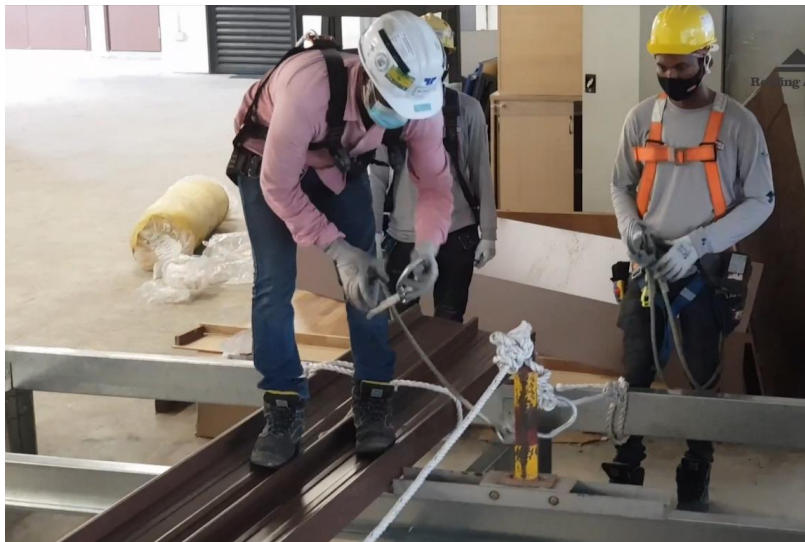
- Safe access to the area of work
- Proper PPE is used at all times
- Use of temporary fall protection systems

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Construction of New Roofs



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Design of New Roofs:

(Fragile Surfaces may become brittle over time and safety provisions should be planned to future-proof against potential hazards)

- Safe access to the area of work
- Fall Protection Systems compatible with common PPE
 - Pass Through (to minimize un-hooking)
 - Demarcation of Safe Zones

Design of New Roofs



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Fall Arrest Systems

Working at Heights Safety

Current Workplace Safety and Health (Work at Heights) Regulation requires that any person working at height should have adequate protection against the risk of falling. Building occupier is required under the legislation to establish and implement a fall prevention plan when work at height is to be carried out at the premise.

This is especially important for people required to work on roofs for maintenance, inspection and construction tasks, as they can be exposed to significant risks.

Cableline range of Permanent Anchor Points is the perfect answer to providing fall arrest / restraint protection where guardrail is not suitable or where design dictates the need for a virtually invisible solution.

Cableline Optima II Permanent Anchor Points

Features & Benefits

An economical option to prevent fall from height in places where access to work area is minimal and not frequent.

Simple, maintenance free and cost effective.

Can be used in both fall arrest and fall restraint applications when permanently installed on roof.

Designed with comprehensive range of fixing options for all roof types.

Designed to remain firm and not flex under normal working loads.

Installed on metal roof by means of aluminum clamps and/or structural rivets with neoprene water seal and adhesive membrane tape for water tightness.

Most ideal for first-man-up anchor point bridging gaps between roof access point and fall-line systems.

Made of corrosion resistance marine grade stainless steel and aluminum components.

Design and tested in accordance with EN 795:2012 Type A Anchor Devices.



FALL PREVENTION

every body's duty & responsibility

Type of Permanent Anchor Points

Cableline Optima II Permanent Anchor Points are designed and tested in accordance with EN795:2012 Type A Anchor Devices for Single User that can be installed on all type of metal roof sheets as well as on reinforced concrete roof and wall.

| | | |
|---|--|---|
|  <p>AP100 Square Corrugated Flange Fixed Metal Roof Sheet</p> |  <p>AP200 Transformed Rib and Flange Fixed Metal Roof Sheet</p> |  <p>AP300 Conventional Clip Fixed Metal Roof Sheet</p> |
|  <p>AP400 Self Supporting Standing Seam Metal Sheet</p> |  <p>AP500 Double Lock Standing Seam Metal Sheet</p> |  <p>AP600 Flat Aluminium Roof Panels</p> |

Compliance

Cableline Optima II Permanent Anchor Points are designed, manufactured and tested in accordance with the requirements of EN 795:2012 (Personal fall protection equipment - Anchor devices).

Inspection And Maintenance

Under current Workplace Safety and Health Regulations, all fall arrest / restraint systems are to be inspected by a competent person at an interval not more than 12 months.

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Fall Arrest Systems

Working at Heights Safely

Current Workplace Safety and Health (Work at Heights) Regulation requires that any person working at height should have adequate protection against the risk of falling. Building occupiers are required under the legislation to establish and implement a fall prevention plan when work at height is to be carried out at the premise.

This is especially important for people required to work on roofs for maintenance, inspection and construction tasks, as they can be exposed to significant risks.

Cableline range of Horizontal Lifeline Systems is the perfect answer to providing fall arrest / restraint protection where guardrail is not suitable or where design dictates the need for a virtually invisible solution.

Cableline Optima II Horizontal Lifeline Systems

Features & Benefits

An economical cable based lifeline system providing fall arrest / restraint protection when working at height.

Simple, maintenance free and cost effective cable lifeline system suitable for multiple users to be hoed on the system.

Utilizes marine grade 316 stainless steel 8mm diameter wire rope running through intermediate anchors spaced at distance up to 8 meters apart.

Corrosion resistance components and has no mechanical / moving parts that require no maintenance under all weather conditions and reduce the potential for misuse of the system.

"Pass through" system provides users continuous hands free access when working at height with total fall protection through continuous attachment while travelling along the system.

Unique Traveler® glides through the stainless steel wire rope and intermediate anchors seamlessly without the need to detach and connect to the system again when passing through intermediate anchors.

Progressive energy shock absorbing system incorporating an efficient in-line shock absorber together with deformable roof anchor brackets.

Unlike other systems, there is no need for expensive 'fall over' posts at every anchor point.

Designed with comprehensive range of fixing options for all roof types and can accommodate corners and varying building roof shapes.

Designed and tested in accordance with EN 795:2012 & CEN/TS 16415:2013 Type C Anchor Devices.



FALL PREVENTION
every body's duty & responsibility

The Systems

Cableline Optima II Horizontal Lifeline Systems incorporate a progressive energy shock absorbing system making the system totally unique. An efficient in-line shock absorber together with deformable roof anchor brackets is designed to deploy and deform in the event of a fall. This minimises the loads to an acceptable level for both the user and structure. Unlike other systems, there is no need for expensive 'fall over' posts at every anchor point.



Compliance

Cableline Optima II Horizontal Lifeline Systems are designed, manufactured and tested in accordance with the requirements of: EN 795:2012 & CEN/TS 16415:2013 (Personal fall protection equipment - Anchor devices).

Inspection And Maintenance

Under current Workplace Safety and Health Regulations, all fall arrest / restraint systems are to be inspected by a competent person at an interval not more than 12 months.

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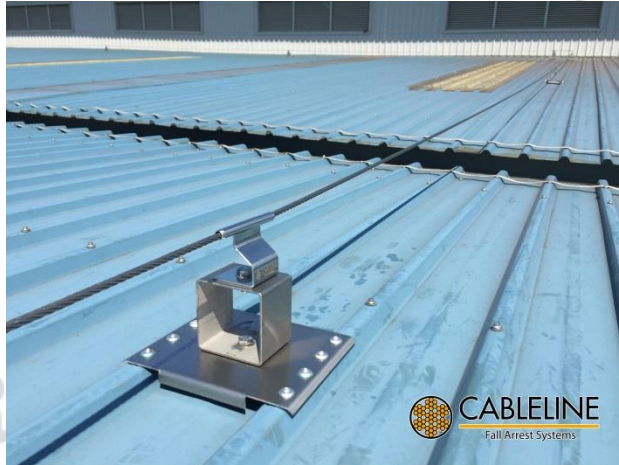


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FIBREGLASS WALKWAY

Cableline Fibreglass Walkway uses moulded fibre-reinforced plastic (FRP) grating which is a composite material made up of alternating directional layers of continuous glass fibre for strength with resin to consolidate the fibres and provide the shape.

It is an excellent alternative to metal or aluminium flooring systems due to its light weight, high strength, corrosion and chemical resistance, fire resistance and anti-skid, flexibility, impact resistance, non-conductivity and other safety features.



WHY FIBREGLASS WALKWAY?

High strength-to-weight ratio

Cableline Fibreglass Walkway is less than one-fourth the weight of steel grating and two-thirds that of aluminium grating. The high strength-to-weight ratio allow ease of handling, simple installation process with no heavy equipments required and easy removal for access and installation with no heavy equipment, meets specified load requirements for steel and is more impact resistant than aluminium.

Corrosion and Chemical Resistance

Cableline Fibreglass Walkway is manufactured using an isophthalic (ISO) polyester resin which provide excellent to corrosion and chemical resistance.

This corrosion and chemical resistance properties make Cableline Fibreglass Walkway most suitable on roof, chemical plants, wastewater treatment plant, power station and other high corrosion environment areas.

Antiskid Surface

Cableline Fibreglass Walkway is available with a concave or gritted surface, both offer outstanding slip resistance in wet and oily environments and have consistently reduced slips and falls in industrial facilities.

Fire Resistance

Cableline Fibreglass Walkway is manufactured to exhibit a minimum of a Class 1 flame spread rating in accordance to ASTM E 84.

Flexibility and Impact Resistance

Cableline Fibreglass Walkway has excellent flexibility and impact resistance properties that make ensure the product can take significant loads without permanent deformations.

Maintenance Free & High Visibility

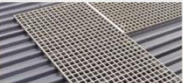

Cableline Fibreglass Walkway is not only chemical and corrosion resistant, but, the colour remains fast due to it is ultraviolet resistant properties of its Onkophylite-type unvarnished polyester resin used. This makes the walkway maintenance free. No periodic repainting is required.

The built-in paint pigment also ensures that the product can have a high visibility which can be ideal as a designated walkway pathway.

Non-conductivity

Cableline Fibreglass Walkway has excellent electrical insulation properties and can be used in electrical environments. Also, it will not generate sparks when subject to impact from tools or equipment.

SPECIFICATIONS



Colours

Cableline Fibreglass Walkway standard colours are Safety yellow and grey. Other colours can be manufactured on request.

Surface Finishes

Cableline Fibreglass Walkway standard surface finish is gritted for antiskid. Concave surface can be manufactured on request.

Dimensions

Cableline Fibreglass Walkway standard walkway panel size is a nominal 15mm thick x 618mm x 2850mm with square mesh of 38mm x 38mm.

25mm thick x 618mm x 2850mm with square mesh of 38mm x 38mm can be manufactured on request.

Open area (as on flow, light penetration) is approximately 70% - 80%.

LOAD DEFLECTION DATA

15mm thick x 1220mm x 3660mm (Mesh size: 38mm x 38mm)

| Span (mm) | Full Panel Concentrated Load 1% Deflection of Span Load (kg) | Full Panel Distributed Load 1% Deflection of Span Load (kg/m ²) |
|-----------|--|---|
| 490 | 719 | 3205 |
| 640 | 350 | 1494 |
| 800 | 260 | 734 |
| 950 | 219 | 467 |
| 1100 | 168 | 302 |
| 1250 | 137 | 191 |

25mm x 1220mm x 3660mm (Mesh size: 38mm x 38mm)

| Span (mm) | Full Panel Concentrated Load 1% Deflection of Span Load (kg) | Full Panel Distributed Load 1% Deflection of Span Load (kg/m ²) |
|-----------|--|---|
| 490 | 1179 | 5009 |
| 640 | 571 | 2160 |
| 800 | 407 | 1038 |
| 950 | 341 | 612 |
| 1100 | 255 | 417 |
| 1250 | 203 | 285 |

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Safety Time Out 2022

Be it during:

- Maintenance of Existing Roofs
- Construction of New Roofs
- Designing Future Roofs

Everyone can play a part to keep the user safe!

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Thank You!

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