



A-SAFE

# Airport Solutions







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Established in 1984, A-SAFE is a specialist manufacturer and supplier of high-performance safety guardrails and associated products. In 2001, we invented the world's first industrial-strength safety guardrail, and for more than fifteen years, we have been at the forefront of airport safety.

Our Atlas range of airport guardrails have been purpose-designed and engineered in conjunction with the BAA to provide unrivalled heavyweight protection for demanding airport environments. Atlas guardrails fulfil the most rigorous of safety standards, and are capable of withstanding impacts from fully laden baggage tugs and carts. They are the safety guardrails of choice for many of the world's leading airports.

Designed for use in busy baggage halls, cargo facilities and terminal buildings – as well as outdoors on aprons and service roads – the A-SAFE range of airport products segregates vehicles from pedestrians as well as critical infrastructure, providing supreme protection to charging stations, floodlights, passenger boarding bridges, masts and other essential equipment.

A-SAFE is the only airport polymer safety guardrail manufacturer on the market to test and independently verify its products to the rigorous standards of PAS 13, a global benchmark for guardrail testing developed by the British Standards Institution. Every test is independently certified by TÜV Nord, an international leader in controlled testing.

### A-SAFE Airport Guardrails

- ✓ Trusted by the world's busiest international airports
- ✓ In conjunction with the BAA, purpose-engineered to withstand the heaviest of vehicles and the harshest of conditions
- ✓ The only airport guardrail to be tested and certified to PAS 13 - the global benchmark in guardrail testing
- ✓ Maximum energy absorption of heavyweight forces owing to a patented coupling system unique to A-SAFE
- ✓ Unrivalled ability to flex and reform following impacts through an exclusive polymer developed in-house







# Service roads

Airport service roads are fast-paced, heavy-duty environments that can operate up to 24 hours a day. With numerous ground support vehicles in operation, such as tugs, dollies and fuel trucks, the risk of collisions is high. A-SAFE airport safety guardrails offer the most reliable solution for segregating traffic, as well as protecting pedestrians and infrastructure from the risk of vehicle collision. Robust and low-maintenance, A-SAFE guardrails flex to withstand multiple impacts without the need for repair or replacement.



- Separate passengers and vehicles
- Protect against high-energy impacts
- Define and defend pedestrian and vehicle routes
- Create pedestrian safe zones
- Control the movement of traffic



Double Traffic+





## Fixed Electrical Ground Power

Expensive air-side equipment needs to be available and working at all times. Impact damage can play havoc with airport logistics. Atlas guardrails from A-SAFE are reliable and tough. They will protect your apparatus, removing the risk of damage from vehicles and providing full peace of mind that these vital airport assets are protected.



- Separate heavyweight vehicles in high-traffic areas
- Prevent collisions and protect vital equipment from impact damage
- Provide visual guidance for drivers
- Avoid incidents and downtime



Double Traffic



# Light columns and masts

A vehicle impact with a floodlight can mean a section of airport is out of action until repairs have been made. The flexible A-SAFE Atlas guardrail solves this problem, as it can be configured to fit around masts, columns and floodlights to provide complete protection from passing vehicles.



Double Traffic Polygon

- Separate and guide vehicles away from critical structures
- Physically protect columns, masts and vertical structures from impact damage
- Provide visual guidance for drivers
- Defend any size, shape or location of column



Double Traffic Triangle



Passengers and personnel need to be protected from service vehicle traffic and kept to walkways to protect them from danger. A-SAFE pedestrian separation guardrails are both strong and flexible. They separate passengers from vehicle routes, while also providing physical protection and clear visual guidance along designated walkways.



Pedestrian 3 Rail and Swing Gate



- Define walkways and safe areas
- Restrict passengers to defined routes
- Clearly mark crossing places
- Designate safe access and exit points

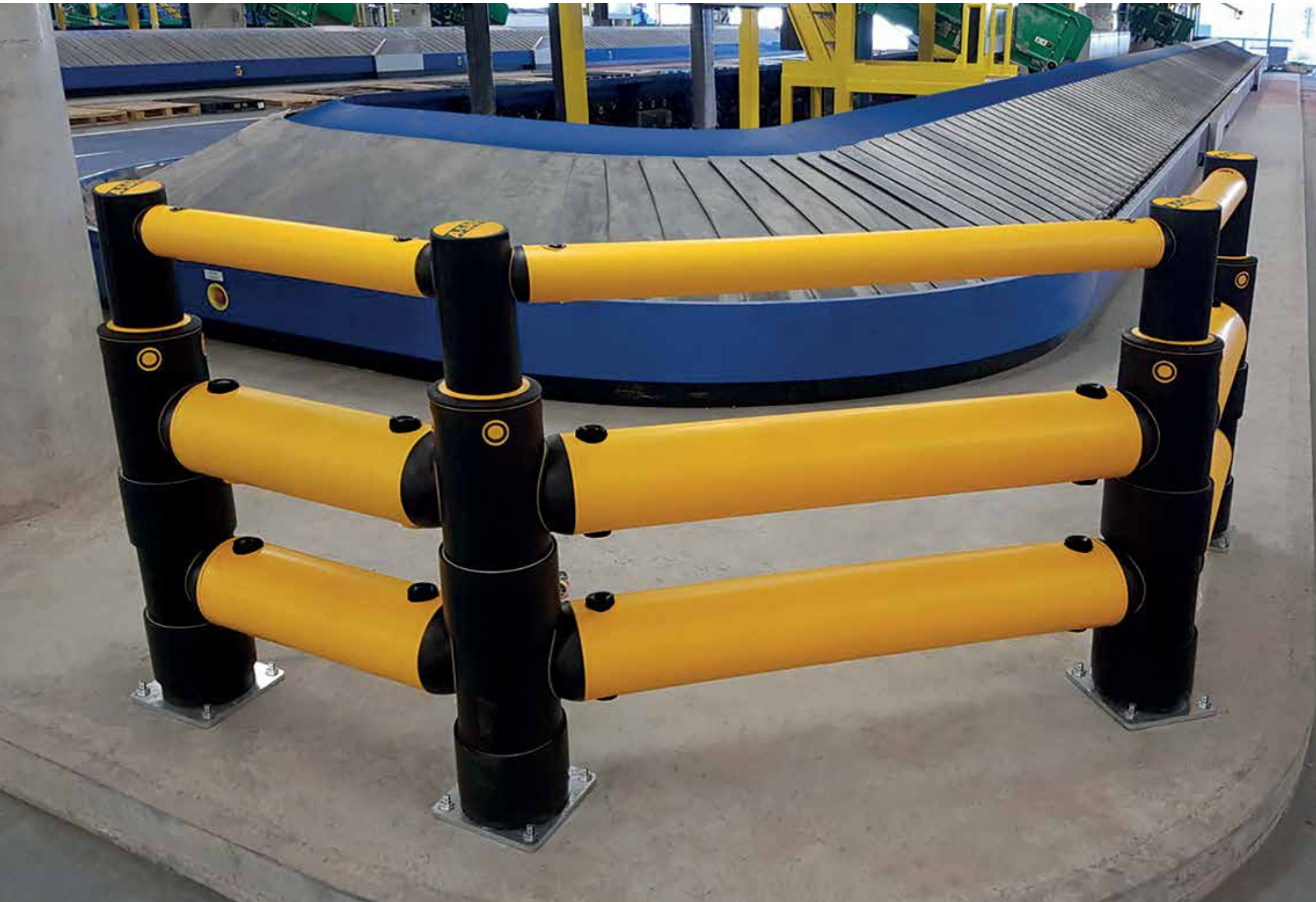
## Pedestrian walkways





# Baggage halls

Conveyors and other pieces of expensive baggage handling equipment are regularly in close contact with airport vehicles. This makes them vulnerable to impacts. Steel guardrails are expensive to repair and replace after impact damage. They also carry the hidden cost of repairs to ground substrates, as impacts often result in floor damage. Atlas guardrails from A-SAFE are especially designed for airports and offer incredible protection – with dramatically reduced maintenance costs.



- Separate heavyweight vehicles in high-traffic areas
- Protect buildings, machinery and equipment from impact damage
- Provide visual guidance for drivers
- Define and defend traffic routes
- Avoid incidents and downtime





## Column protection



Column Guard

- Separate and guide vehicles away from critical structures
- Physically protect columns, building supports and vertical structures from impact damage
- Provide visual guidance for drivers
- Defend any size, shape or location of column

Columns are essential to the structure of your building. One impact and a whole section of airport could be at risk of collapse, with catastrophic consequences. With multiple vehicles constantly in operation on aprons and in and around airport buildings, columns can be vulnerable to impacts. Column protection from A-SAFE keeps your structure safe and helps you prevent potentially devastating accidents.



Column Guard+

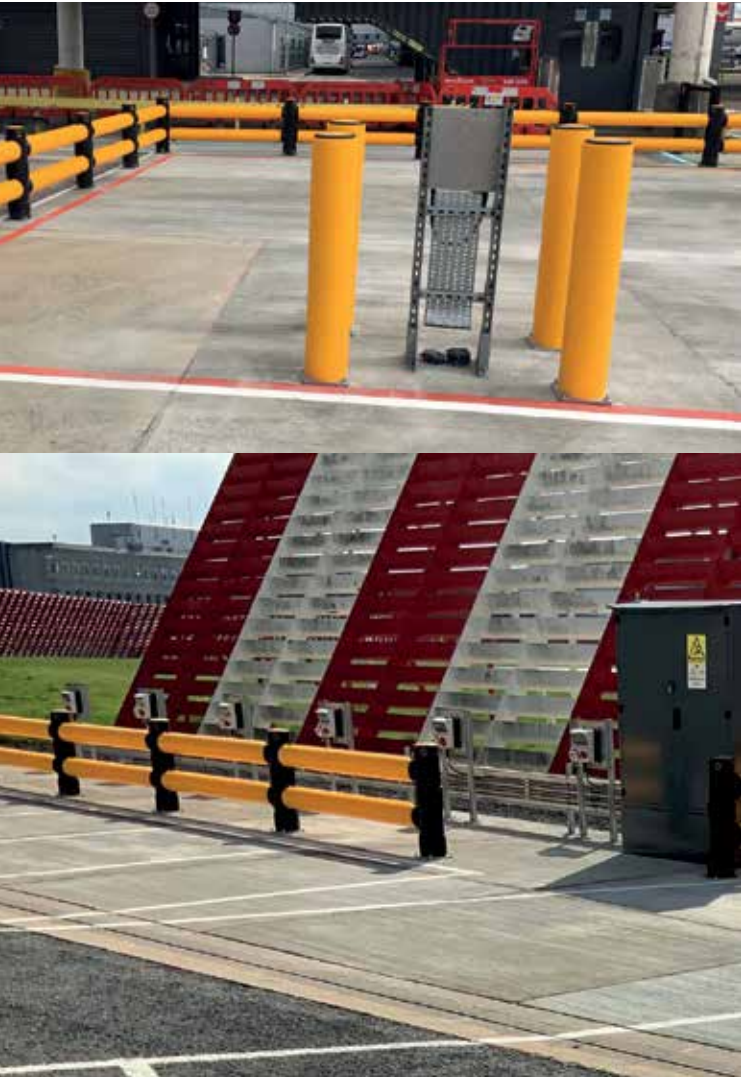




# Tug charging

Tug charging stations are essential for keeping electrically powered airport tugs and ground support vehicles operational. However, multiple vehicles coming and going can make charging infrastructure vulnerable to impact damage. Such damage can be costly both in terms of repairs and equipment downtime. A-SAFE guardrails shield and protect charging stations from vehicle impacts. Unlike steel guardrails, they are engineered to absorb and deflect heavyweight forces, preventing damage and avoiding downtime.

- Protect vulnerable charging infrastructure
- Provide visual guidance for drivers
- Define and defend vehicle routes
- Control the movement of traffic



# Door protection

Airports are busy environments, with high levels of traffic in constant circulation. It's therefore no surprise that doors can be vulnerable to impacts from airport vehicles. Damage to doors can result in costly repairs and operational downtime, reducing airport efficiency. Highly visible, robust bollards and corner guards provide vehicle drivers with clear direction, as well as offering physical protection against collisions.



- Protect doorways and doors
- Provide visual guidance for drivers
- Shield buildings and infrastructure from vehicle impacts
- Avoid accidents and downtime

# Wall protection

Walls are built to be strong, but they are not invincible. An impact from a vehicle can have costly consequences, so it's important to protect your walls. The flexible Atlas guardrail not only stops vehicles from impacting with walls, it also flexes and fully recovers – preventing damage to your vehicles, walls and floors.

- Separate heavyweight vehicles in high-traffic areas
- Protect buildings from impact damage
- Provide visual guidance for drivers
- Define and defend traffic routes
- Avoid incidents and downtime







## Services

### Project management

Our team will come out to see you and discuss your requirements at your site. We'll look at the areas you need to protect, make recommendations on the most appropriate types of guardrail, and take care of the design work as part of the quotation.



### Working with architects

We'll work with your architects, specifiers and project managers to ensure that we provide the ideal safety and protection solution for your project.



### CAD drawing

After carrying out your site survey, our consultant will discuss your requirements with our in-house design team. They'll turn your requirements in to full CAD drawings, including the proposed products, before sending them to you for approval.

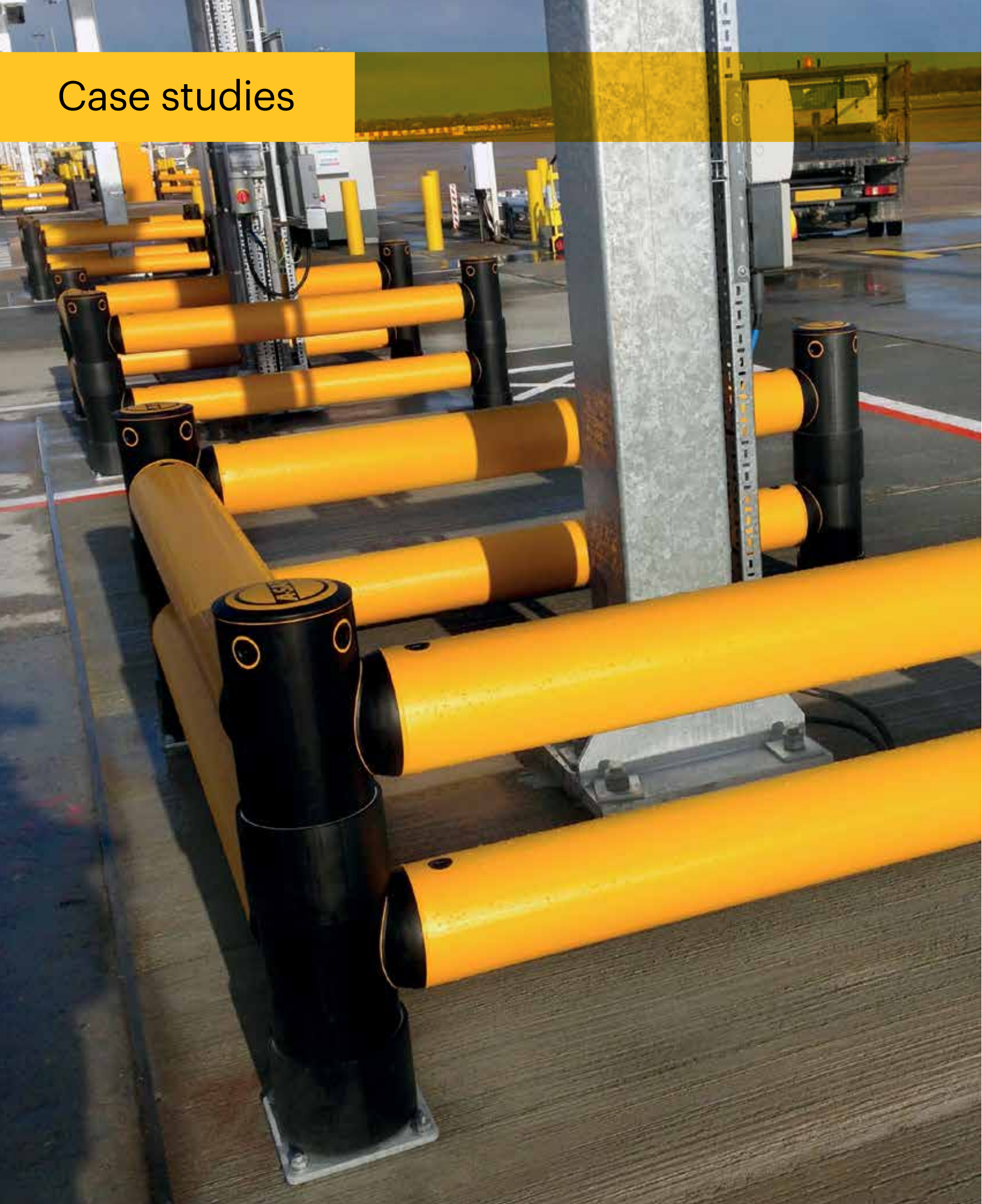


### Installation support

Our expert installation team – who are fully trained to the highest European and global standards – will come to your airport and fit your new A-SAFE guardrails. Our installers work efficiently and with specialist tools, allowing them to complete installations around four-times faster than internal installation crews.







# Gatwick Airport

Among the greatest benefits of choosing A-SAFE guardrails is the amount they can save you in maintenance. The savings are apparent within the first year of installation and over time they become even more substantial.

## Gatwick's savings

Gatwick airport was spending in excess of \$130,000 annually on guardrail and floor damage repairs in its north and south baggage handling halls.

In 2009 the airport replaced its steel guardrails with A-SAFE products and in the period since, they have only spent approximately \$3,900 on maintenance.

## Annual maintenance cost for 330ft of guardrail

Total annual cost \$12,015  
 Rail and post damage \$7,355 a year  
 Floor damage \$3,026 a year  
 Painting twice \$1,633 a year  
 Total cost over 5 years  
**\$60,073**



330ft steel guardrail



330ft A-SAFE guardrail

Total annual cost \$1,877  
 Rail and post damage \$1,014 a year  
 Floor damage \$863 a year  
 Total cost over 5 years  
**\$9,386**





# Case studies



## Singapore Changi Airport

Singapore Changi is the country's main airport, currently rated the World's Best Airport by Skytrax for the fifth consecutive year. It's also one of the world's busiest airports based on international passenger and cargo traffic.

The airport's health and safety team called upon the aviation expertise of A-SAFE to supply a unique protection and segregation solution for baggage conveyors. Extreme-strength Atlas guardrails were originally designed in consultation with Heathrow Airport to exceed the required standards for airport safety, making them a trusted choice for the Changi team.



A-SAFE manufactured, supplied and installed over 500ft of Atlas Double Traffic+ Guardrail throughout the airport in key high traffic areas. The guardrail end posts were reinforced with spinning collars on the end posts, to further deflect impact forces from vehicle collisions and ensure extreme-strength traffic protection for Changi Airport's vital baggage conveyor belts.

Our Atlas range is designed with galvanised steel base plates, and it's also non-corroding, self-colored and UV-protected to stand up to tough external weather conditions in a range of climates.

## Brussels Airport



Brussels Airport is an international hub, close to Belgium's capital. In 2016, more than 21 million passengers travelled through Brussels, making it Europe's 25th busiest airport.

The team responsible for health and safety at Brussels Airport required a solid, durable solution to protect two baggage handling conveyor belts from vehicle impacts. The vehicles responsible for transporting luggage and passengers through the airport were frequently impacting with conveyors, causing lasting damage both to machinery and vehicles.

The expert A-SAFE team installed Atlas Single Traffic Guardrail to protect against frequent, damaging collisions. Atlas guardrails provide heavy-duty impact protection and feature reinforced bollard-style end posts to provide enhanced impact absorption and deflection capabilities.

A-SAFE Atlas guardrails are purpose built for the airport environment. They are designed with protected, galvanised steel base plates and anti-corrosive properties, making them the solution ideal for prolonged use outdoors. Atlas is also manufactured using extreme-strength materials which absorb the energy from impacts with airport vehicles, dissipating force evenly through the guardrail to avoid floor damage, before flexing back to its original shape.



### Our airport partners

Hong Kong International Airport | Heathrow | Catania International Airport | Dublin Airport | JFK International Airport | Oslo Airport | Manchester Airport | Singapore Changi Airport | Shenzhen Airport | Verona Airport | El Dorado | Gatwick | Milano Malpensa |

Edinburgh Airport | Copenhagen Airport | Lisbon Airport | Brussels South Charleroi Airport | YYC Calgary International Airport | Eindhoven Airport | East Midlands Airport | Brussels Airport | Guernsey Airport



# A local company, globally.

We work hard to maintain the spirit of a local business, while achieving the far-reaching impact of a global enterprise.

Our policy of being “global and local” allows us to respond to your needs wherever you are in the world. In every office worldwide, we employ local experts throughout the business. Specialists in their field, they are equipped with an in-depth knowledge of domestic markets, legislation, safety practices and social customs.

We strive to give all workplaces access to world-class products, through local offices and consultants.

## Global Offices

|                            |                                    |                          |                          |
|----------------------------|------------------------------------|--------------------------|--------------------------|
| A-SAFE HQ Ltd              | <u>UK</u>                          | A-SAFE S.A. de C.V.      | <u>Mexico</u>            |
| A-SAFE Australasia PTY Ltd | <u>Australia &amp; New Zealand</u> | A-SAFE B.V.              | <u>Netherlands</u>       |
| A-SAFE bvba                | <u>Belgium &amp; Luxembourg</u>    | A-SAFE LLC               | <u>Russia</u>            |
| A-SAFE Scandinavia ApS     | <u>Denmark</u>                     | A-SAFE Soluciones S.L.   | <u>Spain</u>             |
| A-SAFE SAS                 | <u>France</u>                      | A-SAFE AB                | <u>Sweden</u>            |
| A-SAFE GmbH                | <u>Germany &amp; Austria</u>       | A-SAFE DWC-LLC           | <u>UAE</u>               |
| A-SAFE Italia s.r.l.       | <u>Italy</u>                       | A-SAFE UK Ltd            | <u>UK</u>                |
| A-SAFE K.K.                | <u>Japan</u>                       | A-SAFE International Ltd | <u>Rest of the World</u> |

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