



1.0 Technical Product Information

1.1 Technical Information Summary

The material used to manufacture the products:

- Offers excellent chemical inertness/resistance with very low moisture absorbancy. It is resistant to most inorganic acids, alkalis and salts as well as alcohols, organic acids, esters and ketones.
- Contains no substances classified as hazardous.
- Is not classified as dangerous
- Burns but is not classified as flammable. Water in a spread jet, dry chemicals or foam are suitable extinguishing media.
- Has a working environmental temperature range of –10 to +50 °C
- Has an ignition point of 360 °C in the presence of a burner flame and 409 °C in the absence of a burner flame.
- Will not give off toxic or noxious fumes should it ignite
- Contains no re-cycled material but is itself 100% recyclable

1.2 Specific Technical Information

1.2.1 Product Specific Technical Details

General:

- Excellent chemical resistance ISO/TR 10358
- Excellent abrasion and corrosion resistance
- High temperature resistance of 60° and short term up to 90°
- Compliance with food contact regulations
- Compliance with regulations on Medical use

Environmentally Sound:

- Not considered dangerous to the environment
- 100% recyclable
- No heavy metal additives
- Significantly lower carbon footprint compared to steel/metals

Impact Resistance:

- High impact resistance
- Statically and dynamically load tested
- Barriers are load tested where appropriate to requirements as required by BS6399 (see individual product technical documents for relevant details)



1.0 Technical Product Information

1.2.2 UV Protection*

Products may be installed externally or internally and are therefore exposed to daylight (containing UV radiation) to a greater or lesser extent.

To protect the products against UV degradation A-Safe use a UV protection package in their extruded sections as standard. This package provides a recommended performance period for UV protection of 15-20 years out doors in Northern Europe and 10 years in the southern hemisphere.

* Further technical details regarding UV Protection are available on request

1.2.3 Operational Temperature Range

The working environmental temperature range specified for the A-Safe products is -10°C to +50°C. The Izod impact strength of the material has been tested by the material manufacturers to the relevant standards.

Product will perform below -10°C but exhibit a reduction in mechanical performance. Below -20°C the extruded sections from which the products are assembled reach their glass transition temperature (the temperature at which a polymer becomes solid). Below this temperature (-10°C) it is prone to cracking under point load impact conditions however it will still stop vehicles under the force requirements set out in British Standard BS6399.

1.2.4 Ignition Point and Flammability

The ignition point of the material from which the extruded sections are manufactured is 360°C (in the case of burner flame being present) and 407°C (in the absence of a burner flame). The rate at which the material burns is 100 mm/min. The materials' Combustible class is HB.

In the unlikely event that an ignition point of 360°C or 407°C occurs, if this temperature is reached most of the contents and structure in which the barriers are located will already have been destroyed or suffered severe damage.

The barrier materials will not give off any toxic or noxious fumes should they be ignited.

The same material type is used extensively in automotive parts, e.g. bumpers, radiator expansion tanks, brake fluid reservoir, windscreen washer tanks and parts of ventilation systems.



2.0 Cleaning and Routine Maintenance

2.1 General

The materials used in construction of the products, extruded polypropylene sections and steel base plates, together with the design techniques employed in relation to assembly and performance provide products that require the performance of minimal routine maintenance tasks. Routine and other maintenance is required to ensure correct product performance and to maintain its' appearance and high visibility.

2.2 Cleaning

Dust and other particulate material can be easily removed by simply wiping the product with a damp cloth.

Marks on the product caused by knocks and scrapes can generally be removed using a mildly abrasive liquid or cream cleaner.

Cleaning should be performed after impact or barrier repair, otherwise cleaning to preserve general barrier appearance and cleanliness can be done at periods determined by the product user.

2.3 Maintenance

Routine maintenance is required to ensure product integrity, and therefore performance, is maintained over time. Areas where product integrity can be affected are rusting or corrosion of base plates, base plate fixing bolt nuts not being at the correct torque settings and damage occurring to product component parts.

It is highly unlikely that every occurrence of impact on a product will be known about or even recorded. If a known impact event occurs the following maintenance procedures SHOULD be performed after impact on all component parts of the product or product section subject to impact.

If no known impact events occur during a three month period the following maintenance procedures SHOULD be performed at three monthly intervals and be performed on a minimum of at least 20% of all products or product sections installed on a site and at least 20% of product base plates, base plate fixing bolt nuts and product components for each product or product section inspected. The components on which the routine three monthly maintenance procedures are performed on each product or product section may be chosen at random.



2.0 Cleaning and Routine Maintenance

2.3.1 Base plates

Base plates are to be inspected for chips or scratches on the powder coated surface (if powder coated base plates are fitted to the product or rusting and fatigue of the steel from which the base plates are manufactured).

Chips or scratches to the powder-coated surface should be covered over using a suitable paint to protect the steel exposed by the chip or scratch.

If rusting to a base plate is found that is causing erosion or crumbling of the base plates steel material, allowing manual movement of the barrier and associated base plate, or affecting the ability of any of the fixing bolts to correctly anchor a base plate the product or product component to which the base plate is attached **SHOULD** be replaced with a new component.

PLEASE NOTE. Should any of the defects detailed above be found on inspection of a randomly selected component ALL components on the product or product section should be inspected for defects.

2.3.2 Fixing Bolt Integrity

Base plate fixing bolts should be inspected for slippage, pull out and correct positioning in the holes in which they are located.

If a fixing bolt is not properly located the bolt should be hammered back in, or further into, the hole in which it is located and the fixing bolt nut correctly torqued to the correct setting for the product type and associated bolt used (Refer to section 2.3.5 for nut torque settings). If a fixing bolt nut cannot be tightened to the correct torque after relocation the product supplier should be contacted regarding the correct procedures to be followed.

PLEASE NOTE. Should the location and integrity of a fixing bolt found to be incorrect on inspection then the location and integrity of all fixing bolts on that product or product section should be checked and corrected as necessary.

2.3.3 Fixing Bolt Nuts Torque Setting

The torque settings of all four base plate fixing bolt nuts on each base plate inspected should be checked to be at the correct setting. If lower than the required setting the nuts should be re-tightened to the correct setting.

PLEASE NOTE. Should any of the nut torque settings checked be found to be incorrect torque settings on all fixing bolt nuts anchoring the product or product section must be checked and re-tightened as necessary. If a nut cannot be re-tightened to the correct torque setting refer to section 2.3.2.



2.0 Cleaning and Routine Maintenance

2.3.4 Condition & Integrity of Individual Barrier Components

The plastic material of individual product components should be visually inspected for signs of stress, usually indicated by white marking on the material at the point of stress, straightness and correct location within the assembled product or product section.

Stressed or non-straight components should be replaced with new components.

Incorrectly located components should be correctly relocated in a product or product section. If correct relocation cannot be achieved due to fixing bolt integrity problems, refer to section 2.3.2.

PLEASE NOTE. Should a product component be found to be defective then all components on that product or product section should be inspected for defects and remedial action taken as indicated above.

2.3.5 Fixing Bolt Torque Settings

Product/Barrier Type	Bolt Type	Product Code	Torque Setting
Pedestrian	AS M8-12/55/15	900_0048	25Nm
Handrail	AS M8-12/55/15	900_0048	25Nm
Traffic	AS M8-12/55/15	900_0048	25Nm
Ground Level Traffic	AS M8-12/55/15	900_0048	25Nm
Double Rail Traffic	AS M12-20/80/15	900_0021	80Nm
Heavy Duty Double Rail Traffic	BLS M12-20/18/16	900_0026	80Nm
TrafficPlus	AS M12-20/80/15	900_0048	25Nm
Car Park	AS M8-12-55/15	900_0048	25Nm
Rack End	AS M8-12/55/15	900_0048	25Nm
Bollards	AS M12-20/80/15	900_0021	80Nm
Kerb	AS M12-20/80/15	900_0021	80Nm
Height Restrictors	AS M12-20/80/15	900_0021	80Nm