A-SAFE Environment

A Greener Option

YOUR PROBLEM, OUR INSPIRATION

Where others see problems, we see only potential: the potential to find the solution. In every customer challenge are the seeds of a great idea and a solution nobody has thought of. Problem solving is why we exist; it is in our DNA and it continues to inspire every product we create.

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A-SAFE safety barrier systems can now add being a greener option to its long list of benefits, with research showing that plastic barriers can reduce a company's CO_2 emissions significantly in comparison to using steel barriers, with a carbon footprint almost 5 times smaller than steel.

Over five years it is estimated that a 100m section of steel Armco barrier generates 11,933kg of harmful carbon emissions compared to just 2,530kg with the equivalent A-SAFE Traffic Barrier.

A-SAFE offers far more than safer systems to protect workforces and machinery, reducing maintenance and repair costs. According to independent sources when comparing an A-SAFE traffic barrier to a typical Armco-type steel traffic barrier, A-SAFE can offer companies a significantly cleaner bill of health when it comes to their green credentials.

Many companies are re-evaluating their environmental and ethical contribution and looking at all areas where they can reduce their carbon footprint and install greener and more efficient systems across their workplace. Halifax-based A-SAFE has created and developed its high-impact polymer barriers, which not only provide unparalled safety in a busy warehouse or factory space but also are significantly greener than their steel contemporaries.

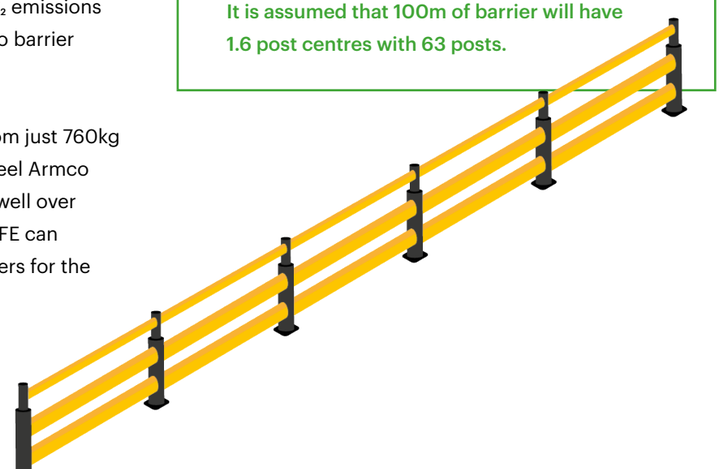
THE CO_2 FACTS - EMISSIONS

Research conducted by a leading plastic solutions company demonstrated that to produce a tonne of Polypropylene* generates 1700kg of carbon emissions, whilst manufacturing a tonne of steel generates 1750kg*. From the outset a tonne of steel produces 50kg more CO_2 than plastic does.

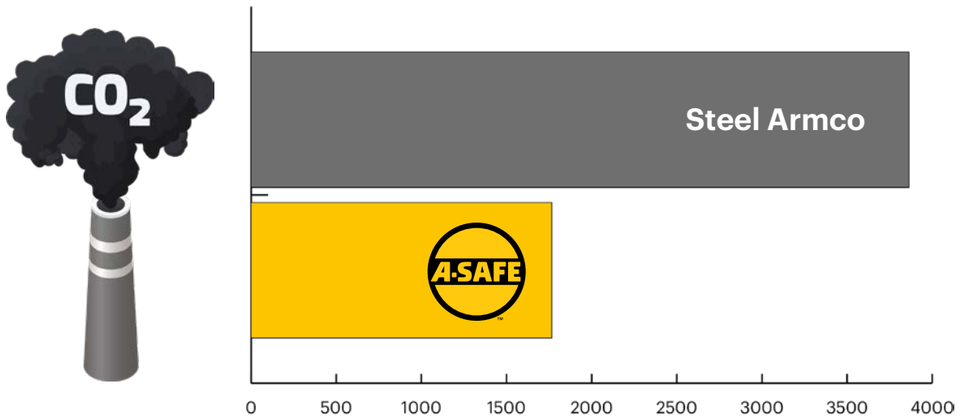
Further research has shown that producing a 100m of A-SAFE Traffic Barrier generates 1766kg of CO_2 emissions compared to that of an equivalent steel Armco barrier which creates 3863kg of CO_2.

100m of A-SAFE Traffic Barrier is produced from just 760kg of plastic and 271kg of steel whilst 100m of steel Armco barrier is manufactured from 2207kg of steel well over double the weight of A-SAFE. Therefore, A-SAFE can produce well over double the amount of barriers for the same weight of material.

The information below demonstrates typical examples for 100m of barrier in a busy working environment. Obviously some of the figures could vary with vehicle types and movement frequency, however we have tried representing typical applications and environments and to give a fair representation. It is assumed that 100m of barrier will have 1.6 post centres with 63 posts.



The bar chart below shows the carbon emissions of 100m of steel Armco (3862.64kg) compared to A-SAFE Traffic Barrier (1766kg).

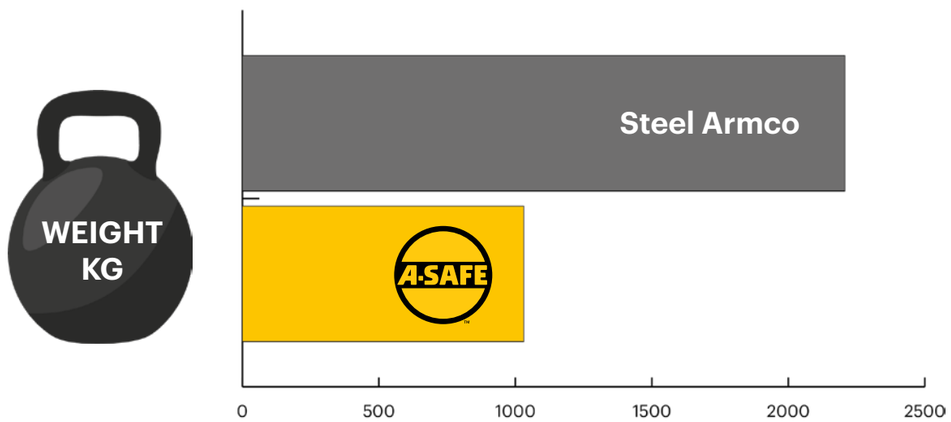


* http://www.borealisgroup.com/pdf/global-challenges/IN0159_GB_BOR_2008_09_B.pdf * http://www.liloontheweb.org.uk/handbook/carbonfootprint

THE CO² FACTS - WEIGHTS & METRES

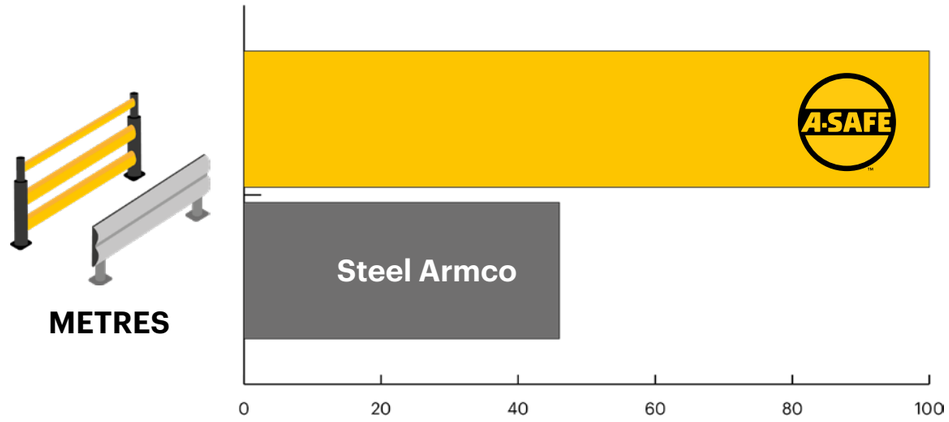
Managing Director, James Smith explained: **"It's a case of simple science. If you compare the carbon footprint of producing a tonne of steel to a tonne of plastic the amount of emissions generated are less for plastic, coupled with the fact that more barriers can be created from a tonne of plastic than from steel, proving it is more efficient at all stages."**

The bar chart shows the weight comparison of 100m of Steel Armco (2207kg) compared to 100m of A-SAFE Traffic Barrier (1031Kg).



Steel Armco weights: 3.5m rail is 40Kg - leg 560mm RSJ - 16.94kg fishtail end - 10kg

The bar chart shows the number of metres of barrier that can be produced from 1 tonne of material. Steel Armco can make approximately 46m compared to A-SAFE Traffic Barrier making 100m.



A-Safe Traffic Barrier weights:
End post is 11.5Kg consisting of 4.3kg steel and 7.2kg plastic
Mid post is 11.1Kg c consisting of 4.3kg Steel and 6.8kg plastic
1350mm rail length (to make 1600mm post centres) is 9.7kg

GENERAL MAINTENANCE AND PARTS

From A-SAFE's vast experience of installing safety barriers and working alongside typical contractors using both types of barriers the A-SAFE plastic barrier system has shown its resilience and longevity in comparison to steel. Due to its flexible nature and the ability to absorb and deflect impacts, the replacement of damaged rails and posts is significantly less than for an Armco steel barrier. In a typical busy environment Armco steel barrier has to have 20% of its rails and posts replaced over a year, compared to just 5% for A-SAFE Traffic Barriers.

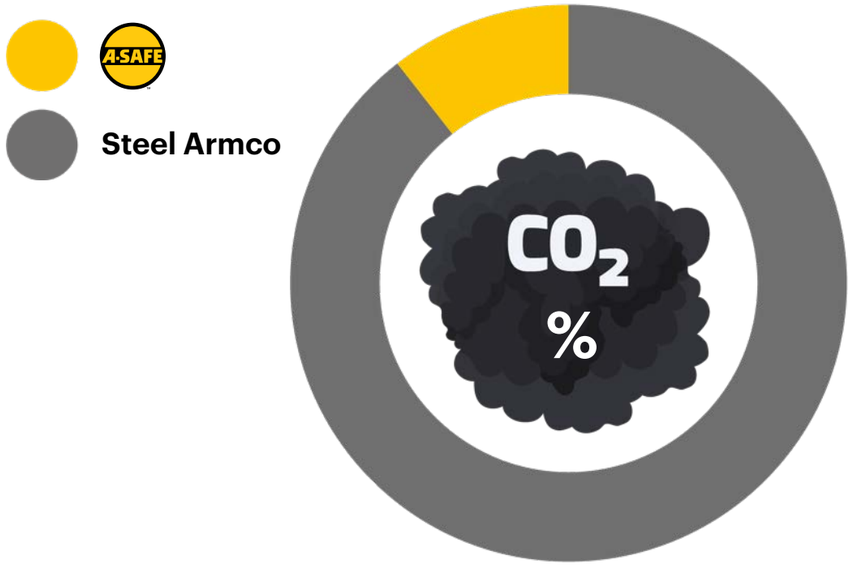
Using a typical 100m run of barrier, 20% damaged component replacement for steel equates to 440Kg and 772kg of CO_2, 5% replacement for a 100m run of A-SAFE Traffic Barrier equates to 88Kg of CO_2.

STEEL PRODUCES NEARLY

9 x MORE CO_2

ON REPLACEMENT PARTS THROUGHOUT ITS USEFUL LIFETIME.

The bar chart shows the percentage comparison of CO_2 over its life cycle for 100m of steel Armco (100%) compared to 100m of A-SAFE Traffic Barrier (11.5%)



FLOOR MAINTENANCE

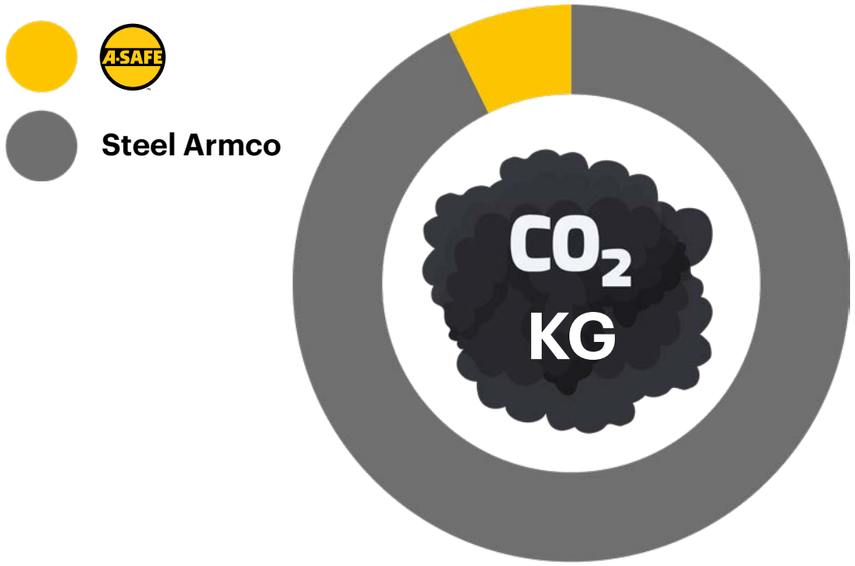
When a vehicle impacts a barrier the force is generally transmitted straight into the floor. The more rigid a barrier is, (for example steel) the faster this will occur. When the impact force is transmitted into the ground the floor will have a tendency to break up and get damaged. Generally A-SAFE Barriers due to their flexible nature have no need for replacement and repair of concrete floors as the force is dissipated throughout the barrier system.

Concrete is one of the world's worst contributors to CO_2 emissions, approximately the same weight of CO_2, is emitted, i.e. 1 tonne of concrete = 1 tonne of CO_2 emissions.

A general 100m run of barrier using 1.6m post centres has 63 posts fixed to 300mm³ concrete pads. When using steel barriers in a busy warehouse, due to the constant damage the posts are lifted out of the ground damaging the warehouse floor and requiring continual repair.

On average 13 concrete pads (approx 20%) will need replacing throughout the year on steel Armco compared to 1 pad when using A-SAFE Traffic Barrier.

1 concrete pad weighs 64.8kg and therefore replacement of 13 concrete pads equates to 842kg of concrete and 842kg of CO_2.



http://www.ecosmartconcrete.com/enviro_cement.cfm

PAINT AND OTHER MAINTENANCE

Other points worth noting are that painting, welding and other maintenance are also required for steel Armco barriers, which are not necessary for A-SAFE ones and each activity can add to the overall carbon footprint of the steel barrier.

Using 1kg of water based paint produces 2kg of CO_2. A metal based paint will produce even more CO_2. Over 5 years, to paint 100m of steel barrier will use 50kg of paint. Therefore painting 100m of steel barrier (water based paint) will create 100kg of CO_2. Over 5 years another 50Kg of paint (100kg of CO_2) will be used on maintenance and replacement parts.

A-SAFE BARRIER IS SELF COLOURED AND REQUIRES **NO PAINT.**

100m OF STEEL

= 100kg of CO_2

NO PAINTING REQUIRED

= 0kg of CO_2

TRANSPORT - 100% RECYCLABLE

TRANSPORT

Studies have shown that lighter weight materials can help curb CO_2, emissions and the amount of fuel used.
For example, plastic barriers are lighter than steel ones, and due to A-SAFE's modular nature, it takes up less transportation area and therefore uses less fuel with more barrier transported at once.

For example, 100m of A-SAFE Pedestrian Barrier fits on 1 pallet, where as 100m of fabricated steel barrier requires 3 pallets. It is a simple fact that to deliver more volume requires more trips for steel barrier which uses more fuel and therefore has a higher carbon footprint.

100% RECYCLABLE

A-SAFE recycles all its products at the end of its lifespan into other products that the company produces. A barrier is usually recycled when a clients' needs and applications change or they are looking to upgrade their current system.

James Smith added: **"We appreciate that whilst companies are always looking for the most cost-effective solution, the environmentally friendly option is also high in consideration. Through A-SAFE, companies can benefit from both, without compromising at all on health and safety standards. A-SAFE can deliver across all areas whilst also ensuring that a company is working to reduce its carbon footprint."**

LIFE CYCLE

Cutting your company's carbon footprint is one of the most important issues of the day. It is easy to look past the environmental impact of important safety products that protect your staff, visitors, merchandise and buildings.

It is common knowledge that steel based products such as Armco barrier have a high carbon footprint. But, as it is something that is perceived as "the only option", people tend to look no further. When the floors become damaged, they are repaired with concrete. Once again, concrete is well known to be high in CO_2 emissions.

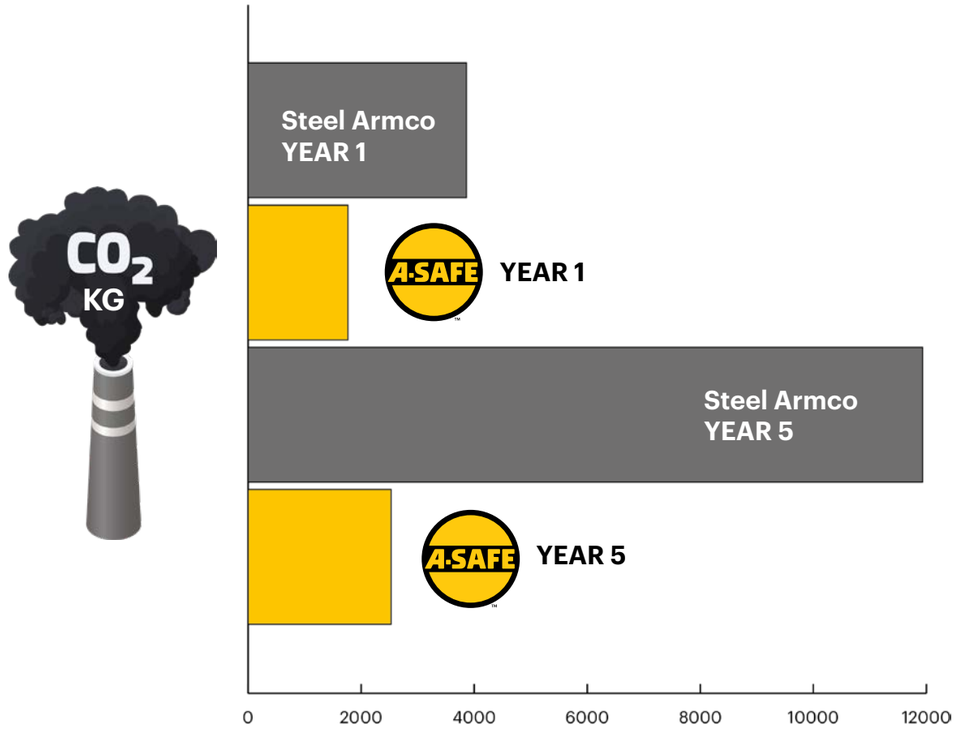
A-SAFE Barriers are the alternative with considerably lower CO_2 emissions in manufacture, supply and maintenance. As a result, your company could significantly reduce its carbon footprint by switching to A-SAFE products. With less weight, little to no maintenance or floor repairs, no painting and 100% recyclability, the green credentials couldn't be better.

CO_2 SUMMARY

A-SAFE OFFER HIGH IMPACT POLYMER BASED BARRIERS. THEY ARE USED BY SOME OF THE WORLD'S LEADING COMPANIES, SUCH AS **COCA COLA, TOYOTA, BAA, KIMBERLY CLARK** AND **DHL.**

At the initial manufacture stage, 100m of steel Armco produces 3863kg of CO_2. This is in comparison to only 1766kg from 100m of A-SAFE Traffic Barrier. At the end of 5 years, steel Armco barrier would have created a carbon footprint of 11933kg! A-SAFE Traffic Barriers would have a total footprint of just 2530kg. Therefore steel Armco has well over 4½ times the CO_2 emissions of an equivalent A-SAFE Barrier. This figure also does not account for transport of the barriers and any painting that is required on the steel.

Looking at a 5 year period comparing 100m of steel Armco with 100m of A-SAFE Traffic Barrier, the difference in CO_2 emissions is significant.



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" enables 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, 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.

For contact information for your specific region, please visit **www.asafe.com**

If you would like to learn more about our products, please contact our safety experts **www.asafe.com**

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