

Physical Safety – Use of waste products to produce robust temporary safety barriers

The problem

In order to comply with workplace transport regulations Stanton Bonna have like other companies made efforts to separate vehicles from pedestrians. Due to the size of some of the mobile plant in use around the site an extensive programme of installing steel Armco barriers to produce pedestrian walkways had been implemented many years ago.

Although these had been very effective in providing safe routes for pedestrians to get around the site, they were very much a permanent fixture in the locations they had been placed.



However there are often occasions where temporary work or situations arise that require measures that are only needed short term and do not warrant the outlay required or are not practical for permanent measures to be put in place.

There can also be situations where restricting access permanently might lead to situations or occasions that introduced a hazard or when a temporary arrangement is required as a trial.

In the past, various temporary measures had been employed in these situations including empty oil drums with timber placed across the tops or ropes/tape sectioning off an area. Although better than nothing, some of these were easy to move and not necessarily an effective or professional way of ensuring safety.

Since achieving ISO 14001 at the end of 2011 the number of empty oil drums and unnecessary timber on site was virtually zero so this was one option not really available to us any more.

A temporary or semi-permanent type of barrier was required which could not be easily moved and was visible enough to leave no doubt as to its purpose of ensuring safety.

Although there are numerous options on the market some are not robust enough to avoid damage or give sufficient protection to pedestrians from a collision with mobile plant or even light vehicles. Plastic type barriers are also very easy to move and prone to theft.



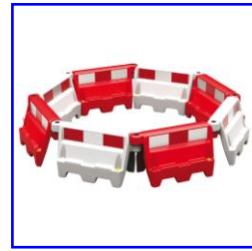
Approx £45 each



Approx £50 each



Approx £70 each



Approx £60 each

The Solution

One of the products we manufacture is twin block railway sleepers, it was suggested that any waste products could be modified to produce a temporary barrier which would not only be robust enough to sustain minor impacts but would also be big and heavy enough to avoid being easily moved or stolen.

Due to their weight, approx 280kg, they would give much more confidence to pedestrians and mobile plant drivers than many of the existing temporary/movable products on the market. They would still be relatively easy for ourselves to move by utilising any of the numerous fork lift trucks we have on site, but would require 2-3 people just to drag or move manually.



Occasionally products are wasted due to the tight tolerances of the various cast in inserts which the rail fasteners attach to. The unit remains structurally sound and conforms to all other aspects of quality.

The only modification required is the fabrication and fitting of some box section steelwork which is welded onto the steel tie bar between the two concrete blocks. The total weight is approx 280kg which makes it much more permanent than most temporary barriers on the market.



Used recently to provide a safe walkway for visitors to and from demonstration/classroom areas at the BPCF/HSE SHAD which Stanton Bonna hosted. These not only protect pedestrians but also the paving slabs from damage by FLT's and office delivery vehicles which occasionally use this route.

Conclusion / Benefits

The cost to the business for this unit is only £26 per barrier.

The main benefit has been a better and more effective temporary barrier than can be found on the market. Because it is robust it can be left in place as a more permanent solution if necessary, with the knowledge that it could be easily removed if the need arose. This would not be the case with a permanent barrier which could involve digging out or drilling to install and more work involved to remove.

There is also the added benefit of re-using an out of specification product which would otherwise become waste.



Use of the barriers next to a batching plant stopped pedestrian access and other vehicles entering the area during cement discharge. The barriers can be easily removed with a small FLT if necessary.

Access to pedestrian door is required adjacent to access for vehicles. Barriers can be easily removed if access to substation is required to the left of the picture.



Safe walkway constructed using temporary barriers next to area used by FLT's to store/transport reinforcement cages to production areas. Barriers can be removed if portacabin needs relocation.

Having the ability to quickly put up a substantial safety barrier quickly in a temporary situation avoids the risk of making do with something less effective and takes away the temptation to do nothing in a situation where installing a permanent barrier might be unsuitable.