

POLES FOR IMPACT RESISTANT SIGNS AUGUSTAFLEX



SAEDI

TECHNICAL SOLUTIONS

The engineering firm SAEDI Srl was founded in 2012 in Sarentino, Alto Adige (Italy), in order to develop road sign poles and parking bollards that can bend, so they are not damaged when struck by vehicles.

Today, SAEDI Srl offers its innovative road safety and street furniture solutions to the public administration as well as private companies.

Our customers include small municipalities and metropolitan cities in Italy, Germany, Austria and Switzerland. Our biggest projects have been carried out in the United Arab Emirates, the United States, Singapore, Russia and Canada.



INVENTOR OF THE FIRST FLEXIBLE POLE FOR IMPACT RESISTANT SIGNS

SAEDI Srl is specialised in developing and manufacturing poles for vertical road signs, parking bollards, road poles and arched bollards, with a particular focus on models featuring the patented Augustaflex® system with disc spring technology.



DAMAGED AND UPROOTED SIGNS: THE MOST COMMON PROBLEM ON ITALY'S ROADS

Sign maintenance is particularly important in “critical” locations where a sign is frequently damaged and needs to be repaired each time, typically using public money.

Article 37 of the Italian Highway Code:

Road signs must always be kept fully functioning by the entities or operators in charge of their installation and must be replaced or reinstalled or removed when even partially ineffective or are no longer fit for the purpose for which they were installed.

- Unstable poles in disrepair
- Signs not visible
- Laborious and costly maintenance

Every urban space has thousands of road signs and bollards spread throughout the landscape. Their maintenance and effectiveness are the responsibility and top priority of the road operator.

Damage to vertical signs mainly occurs due to:

- driver carelessness and heavy traffic;
- clumsy parking and reversing;
- vandalism.

Unfortunately, damage to bollards and sign poles becomes a continuous cycle, which is typically quite costly for the public administration, not only in terms of materials to be used, but also personnel.



PARTICULAR FOCUS ON THE POLE: THE ELEMENT OF SIGNS WHICH



IS DAMAGED FIRST IN THE EVENT OF IMPACT.

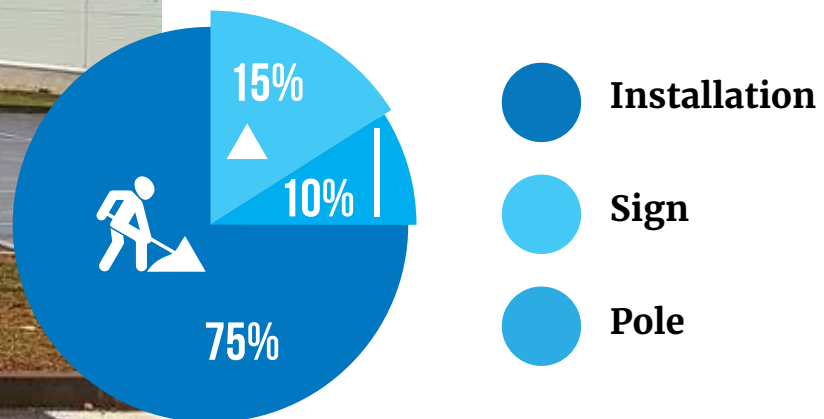
Given their proximity to moving vehicles, the poles are frequently damaged. Even the smallest impact with a vehicle causes the pole to lean over.



COSTS MORE IN TERMS OF REPAIR AND MAINTENANCE.

The pole is different to other elements of a sign because installation and repair cost far more than the purchase price. Like other road infrastructure, poles must be chosen on the basis of the cost of the life cycle rather than the price of the object itself.

PURCHASE COST VERSUS INSTALLATION COST



Uprooted road signs that are often left in a dangerous position pose a hazard to all road users, and are a cause of disrepair and carelessness on the roads and in cities.

HAS LONG WAIT TIMES FOR ORDINARY MAINTENANCE.

Repairs are usually very labour-intensive, they require the necessary resources and must be scheduled over the long term. Poles often remain uprooted and crooked for several months and years.

AUGUSTAFLEX®

FOR SAFER AND MORE SUSTAINABLE ROADS THAT LOOK CUTTING EDGE



Thanks to the Augustaflex® flexible system, in the event of impact the pole flexes and returns immediately to its initial vertical position

The poles and bollards featuring the patented Augustaflex® system with disc spring technology have been designed for critical areas that are frequently damaged on urban and non-urban roads like car parks, pavements, traffic island flowerbeds and more.

In the event of impact, the poles flex and return immediately to their initial vertical position without getting damaged. Over the years, the road signs featuring the Augustaflex® system remain intact even when struck several times and do not even require minimum maintenance, thus drastically reducing maintenance costs and improving the appearance and safety of roads.

AUGUSTAFLEX® THE POLE THAT MAKES A DIFFERENCE

TRADITIONAL POLE



After the first impact, looks unpleasant and is unsafe

Continuous cycle of maintenance and repair costs, wasted budget

Hazard: unstable and uprooted poles, sign not visible

Disrepair

Subject to acts of vandalism

Urgent maintenance and waste of time for repeat repairs

Infrastructure with short life cycle



POLE WITH AUGUSTAFLEX® SYSTEM



Remains intact over the years when struck many times

Notable savings in the medium and long term. Public money invested more wisely

Improved road safety: perfectly vertical poles

Tidy and orderly appearance of roads

Anti-vandalism, does not flex in event of human interaction

Human resources used more sparingly

Sustainable road infrastructure with longer life cycle

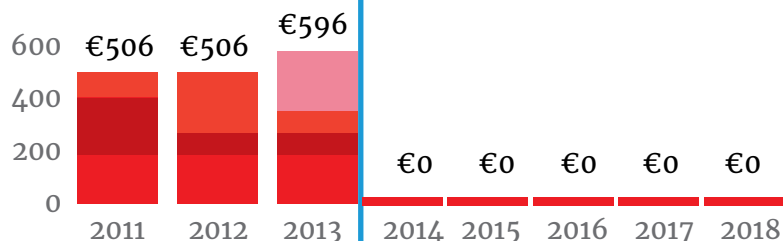
CASE STUDY. COLOGNE, GERMANY

How much does it cost to maintain a specific sign and how much is saved with Augustaflex®?

Maintenance costs associated with a road sign
(replacement/alignment of the pole, repair/replacement of the plinth)



Cologne, Albin-Köbis-Straße



Before Augustaflex

After Augustaflex

2011—2013

(after 2014)

€1608 → €0

The sign is installed near a crossroads. In one year, between 3 and 4 repairs were needed, with costs ranging from €90 for alignment of the pole to €208 for replacement of the pole and plinth. In just three years, the costs added up to €1608.

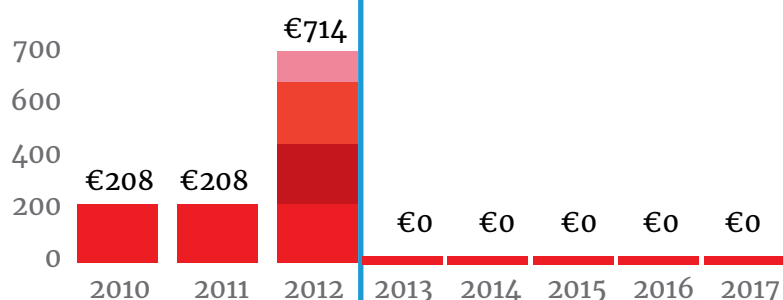
In 2013, the decision was made to install the pole with Augustaflex®.

Augustaflex has **paid for itself in just one year**, after being struck for the first time. Aside from financial savings, road safety is improved and cities look tidy and orderly.

Maintenance costs associated with a road sign
(replacement/alignment of the pole, repair/replacement of the plinth)



Cologne, Augustinerstraße



Before Augustaflex

After Augustaflex

2010—2012

(after 2013)

€1130 → €0

Traffic islands, refuge islands and traffic channelling islands are all found in the middle of roads, where signs are often damaged by vehicles travelling at high speeds. Locations with these kinds of islands require immediate repair for the safety of pedestrians and other road users.

In the first three years, 6 repairs were estimated for €1130. After installation of the Robinson90 flexible pole with the Augustaflex® system, there were 0 maintenance costs in 6 years.



BENEFITS OF POLES WITH AUGUSTAFLEX®:

- Improved road safety, poles in an exact vertical position, visible signs
- They flex and remain intact after impact. Signs are always kept fully functioning
- Notable savings in the medium and long term for maintenance and repair costs
- Tidy roads that look cutting edge
- Extreme durability and sustainability

Poles with the Augustaflex® system can flex up to 90 degrees



Augustaflex® products are certified to CE EN 12899

CHOOSE THE MOST SUITABLE MODEL FOR THE REQUIREMENTS

Flexible upright for tubular poles

The upright is connected to poles using an upper expander and a torque wrench. The upper expander is the same thickness as the pipe. The final height depends on the length of the pole connected and can be defined on site and as required.

Lower transportation costs, total height of the pole based on requirements.

Tools for installation: c spanner, torque wrench



Ring version for anti-rotation pipes

Smooth pole with integrated flexible system

The final height is defined at the time of ordering.

Fast installation.

Tools for installation: c spanner.



UPRIGHT
Model: Robinson90 and Augustaflex

POLE
Model: Robinson90



ROBINSON90



AUGUSTAFLEX

MODELS							
Diameter	D60/76mm						
Recommended application	Traffic islands and flowerbeds Refuge islands Roundabouts Loading/unloading zones for HGVs						
Bending strength	Medium ■■■□□ D60 8 kN/m ² D76 11.2 kN/m ²						
Max bending angle:	90°						
Versions	Flexible upright for smooth or anti-rotation poles Smooth pole with integrated flexible system Standard heights: H120, H160, H290: Custom heights: +						
Resistance to high-speed impact	Medium						
Material	Steel						
Certification	CE EN 12899 -1						
Warranty	warranty extended to 5 years for the flexible system						
Maximum height of the flexible pole or flexible upright with pole, cm above ground	<table border="1"> <tr> <td>One sign 70x50cm/ 60x60cm</td> <td>Two signs 70x50cm 60x60cm</td> </tr> <tr> <td>D60mm H160cm + H210cm + H290cm +</td> <td>D60mm H160cm + H210cm - H290cm -</td> </tr> <tr> <td>D76mm H160cm + H210cm + H290cm +</td> <td>D76mm H160cm + H210cm + H290cm +</td> </tr> </table>	One sign 70x50cm/ 60x60cm	Two signs 70x50cm 60x60cm	D60mm H160cm + H210cm + H290cm +	D60mm H160cm + H210cm - H290cm -	D76mm H160cm + H210cm + H290cm +	D76mm H160cm + H210cm + H290cm +
	One sign 70x50cm/ 60x60cm	Two signs 70x50cm 60x60cm					
D60mm H160cm + H210cm + H290cm +	D60mm H160cm + H210cm - H290cm -						
D76mm H160cm + H210cm + H290cm +	D76mm H160cm + H210cm + H290cm +						
One or more signs 70x50cm, 60x60cm	<table border="1"> <tr> <td>D60mm H360cm +</td> </tr> <tr> <td>D76mm H400cm +</td> </tr> </table>	D60mm H360cm +	D76mm H400cm +				
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D76mm H400cm +							

For specific requests, contact info@saedi-group.com

Installation:	Threaded bushing to be cemented	Lower expander to be inserted into the pole already installed	Plate to be bolted down	Plate and counter plate for rubber traffic islands
Robinson90	+	-	+	+
Augustaflex	+	+	+	-

AUGUSTAFLEX® PREVENT DAMAGE TO SIGNS AND THE RESULTING COSTS

Impact resistant signs and bollards featuring the Augustaflex® system help to improve road safety and the appearance of cities. Road signs are increasingly more important for road safety and must always be fully functioning and clear.

POLES WITH THE PATENTED AUGUSTAFLEX® SPRING SYSTEM ARE PARTICULARLY RECOMMENDED FOR:

- Traffic islands
- Roundabouts
- Car parks
- Loading/unloading zones
- Pavements
- Historical centres

Parking zones



Recommended model: Augustaflex flexible upright

Loading/unloading zones



Recommended model: Augustaflex flexible upright

The application of impact resistant signs allows public administrations and private companies to make significant savings on replacing signs due to damage, especially in the most critical areas of the road such as roundabouts, car parks, traffic islands and refuge islands. The benefits also include improved road safety and a more dignified image of the city, since the poles remain intact and functioning even when struck by vehicles many times.

Roundabouts



Recommended model: Robinson90 pole with integrated flexible system, H160cm

Pedestrian crossings, near bends



Recommended model: Augustaflex flexible upright

Traffic islands



Recommended model: Robinson90 pole with integrated flexible system, H160cm

Historical centres



Recommended model: Augustaflex flexible upright

Refuge islands



Recommended model: Robinson90 pole with integrated flexible system, H160cm

Shopping centre car parks



Recommended model: Robinson90 pole with integrated flexible system, H290cm

SPECIAL REQUIREMENTS

Our technical office is always available to meet your special requirements.

Height restriction barriers with the integrated flexible system



Poles with reduced rigidity. Model: PPS, D42mm, H30—100cm



Flexible steel arched bollards for pedestrians and safety



THE FIRST AND ONLY IMPACT RESISTANT STEEL BOLLARDS,
DESIGNED FOR CRITICAL AREAS OF THE ROAD:

- flex on impact
- rigid and secure
- do not require maintenance or repairs
- drastically reduce maintenance costs
- up to 5 year warranty



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