

PROBAR[®]

PROTECTIVE BARRIER

THE PROTECTIVE BARRIER PROBAR[®]

Is a safety system designed and developed to specifically prevent unwanted intentional or accidental vehicle access into protected and defined secure areas and spaces such as civil pedestrian walkways, government compounds, military facilities etc. etc.



BASIC FEATURES OF THE SYSTEM:

- Quick and easy to install into prepared foundations.
- Easy setting and regulating of the braking-force energy absorption system.
- Increased effectiveness by the use of posts and cables in the shock absorption system.
- Aesthetic adaptation to meet the local environmental regulations.
- The ability to dismantling part of the barrier while maintaining the full functionality of the rest of the system.
- The PROBAR[®] System allows the creation of various geometric shapes - right angles etc - whilst still maintaining the full functionality and efficiency of the barrier.

SUB-SOIL ANCHORING OPTIONS:

- Anchored to drilled metal rods inserted into the ground.
- Anchoring direct into reinforced concrete foundation.
- Anchoring into steel distribution plates.

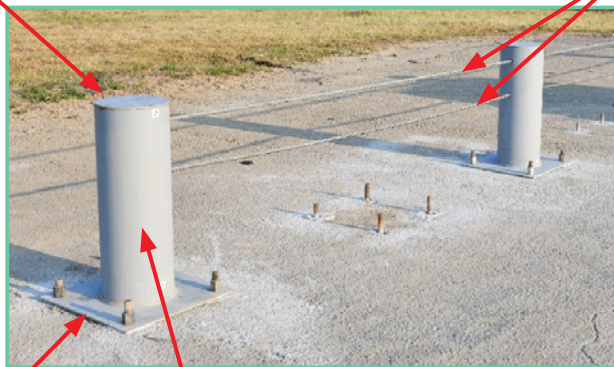
SYSTEM DESIGN SOLUTIONS:

The PROBAR[®] System consists of four key elements:

Steel Posts

They are constructed of a hollow steel column with holes for the acceptance of the metal cables in preparation for the installation of the energy absorption system. The system comes with three post types; End, Continuous and Connecting.

The posts are fitted with a steel foot-plate with holes for anchoring them into the prepared ground. The standard axial distance between the posts is 3.5m, with the possibility of reducing the spacing according to the customer's needs and requirements.



Anchoring to the ground

The methods of anchoring the barrier to the ground is dictated by the geotechnical characteristics and structure of the barrier site/ground.

Steel Cabling

The steel cables are threaded through the holes in the individual posts. The cabling is arranged at two different heights to provide maximum effectiveness in the capture of the unwanted vehicle.

Energy absorption system

When activated, the newly developed energy absorption system acts as a dynamic brake by gradually increasing the braking force to stop the vehicle. The advantage of this energy absorption system is the ability to regulate the braking effectiveness, either by setting the level of the braking power of each section or by increasing or decreasing the number of individual braking sections.

This system is now subject of patent proceedings.

TECHNICAL SPECIFICATIONS:

Distance between posts: max. 3.5 m
– centre-to-centre

Minimum number of posts: 4

Barrier length: recommended min 9m to maintain full resistance, the maximum length is unlimited

Post construction: seamless steel tube 324 / 12.5, steel S235 (ČSN 42 0250)

Upper post cover: sheet steel thickness 8 mm, steel S235 (EN 10025)

Post base: sheet steel 625x625x10mm, steel S235 (EN 10025)

Overall column height: 918 mm

Steel cable: 2 x 20mm steel cable 6 x 36WS-IWRC (EN 12385-4)

Location of cables: horizontally, upper at the height of 800 mm, lower at the height of 550 mm above ground level

Surface treatment: posts and cables in a colour according to the specific place of installation.

Energy absorption system: composed of individual brake segments with a distance of 50 mm

Brake section: cable clamp 20 mm brand DEKA

Number of brake sections: min. 5 + 5

Brake section tightening torque: 84 Nm

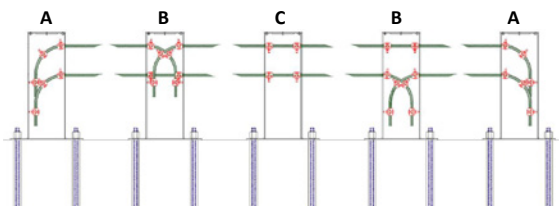
Anchoring to the ground: through the holes in the post base to 4-6 anchor rods using nuts. Method of foundation according to the grounds geotechnical characteristics and structure in the place of installation.

Issued certificate of testing according to PAS 68: 2013 with resistance:

Bollard V / 3500 (N1) / 48/90:1.4/0

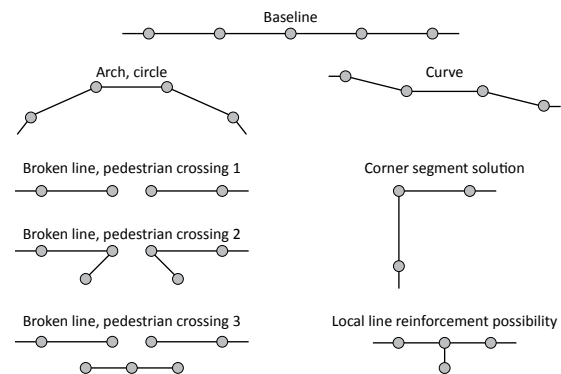
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Types of posts in the barrier line



- A - End post
- B - Connecting post
- C - Continuous column

Examples of the shape solution of the PROBAR System



Selected details of the vehicle impact and the overall movement of the PROBAR

- 1) First contact
- 2) The first local maximum acceleration- column deformation
- 3) Moment during maximum acceleration
- 4) Maximum barrier penetration



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