TECHNICAL SPECIFICATIONS

1. DESCRIPTION OF THE PROTECTIVE BARRIER.

PROTEX KARTING is a patented barrier specifically designed for go-kart and racing tracks.

A **PROTEX KARTING** barrier has no sharp edges and it is made of high-density polyethylene; being very flexible and elastic, while at the same time impact resistant and almost unbreakable.

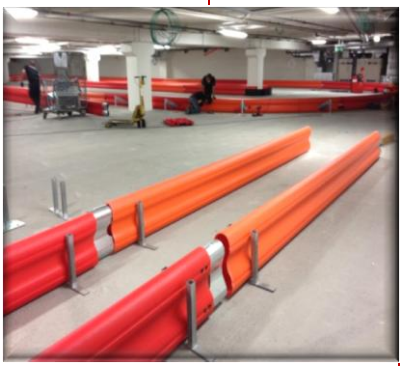
The barrier adopts an eight-shaped cross section, being possible to manufacture it in different lengths and colours. The result obtained after the barriers have been installed is a continuous and flexible protection against impacts.

Connection and absortion spring.

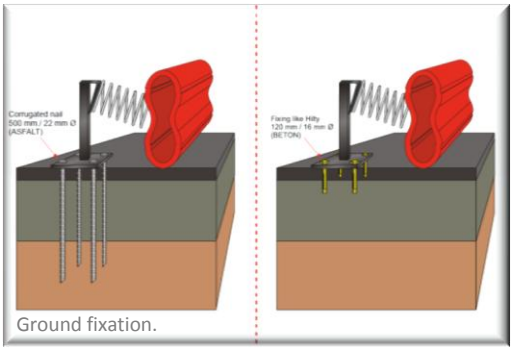
Connection.

Another interesting feature of the Protex Karting system is the presence of a shock-absorption mechanism.

Protex Karting is normally delivered in 5 or 10m long segments, with a height of 40cm and a width of 15cm, made of high density polyethylene. Barriers connect to each other using connection sockets. Either a second barrier or a special pipe may be mounted on top of the main one when required



Assembly.



Ground fixation.

The barrier is held in place at straight lines (normally areas with less impacts) using special steel-made anchoring stakes fixed to the ground. Nowever, carbon steel springs attached both to the barrier and a to a fixed part are used in curves and high-impact areas for shock absorption purposes. Rubber-made systems may sometimes be used instead of springs.

2. PROPERTIES OF THE RAW MATERIAL.

Polyethylene is a thermoplastic polymer consisting of long hydrocarbon chains. Most polyethylene grades have excellent chemical resistance, meaning that it is not attacked by strong acids or strong bases. It is also resistant to gentle oxidants and reducing agents.

There are three main types of polyethylene depending on its density; Protex is made of high-density polyethylene (HDPE) defined by a density of greater or equal to 0.941 g/cm^3. HDPE has a low degree of branching and thus low intermolecular forces and tensile strength, being its main properties.

- Viscoelastic behaviour, being soft and stiff
- Light weight
- Broad-service temperature
- Excellent process ability
- Good impact resistance and high tensile strength
- Excellent chemical stability and resistance
- Excellent electrical insulation
- Excellent weather ability
- Taste free, odour free and toxic free
- Excellent heat seal ability
- Good heat stability
- Low permeability of water.
- High durability (up to 50 years)
- Excellent low temperature properties

Parts used in the installation of **PROTEX KARTING**

3. CHARACTERISTICS OF PROTEX KARTING.

The barriers are manufactured in different colours using PE 100 type HDPE according to UNE standards, with an specific molecular sequence to make it more flexible and impact resistant.

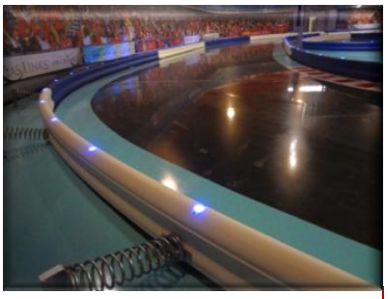
. Specific weight: > 930 Kg/m3
. Linear expansión coefficient: 2 * 10-4 ºC-1
. Specific heat: 0,55 kcal/kg.ºC
. Thermal conductivity. 0,43 w/m. ºC
. Elastic modulus: 900 Mpa
. Minimum traction resistance: Between 17 and 23 Mpa
. Resilience: 18
. Elongation at break: 350% a 500%
. *Rockwell hardness* : D865
. Weight per meter: 7 kg/m

Toolkit installation **PROTEX KARTING**

4. ADVANTAGES – CONCLUSSIONS

The HDPE-made **PROTEX KARTING BARRIER** perfectly protects go-kart and racing tracks as soon as it is correctly installed.

1. Thanks to the HDPE properties, the barrier is resistant to chemical agents, and immune to environmental agents, bacteria and microorganisms.



Adaptation to curve and top LEDs.

2. It occupies much less space than traditional alternatives, allowing a better use of the track and increasing visibility, resulting in more safety for both the pilot and the spectators.

Adaptation 180° loop.

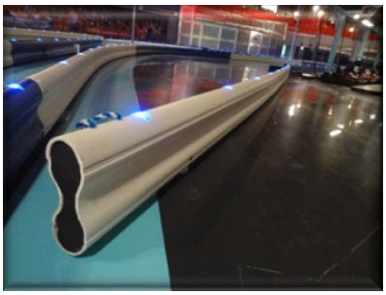
3. The barrier absorbs impacts reducing the risk of injuries. The flexibility of the barrier is adjustable according to the different areas of a track.

Outdoor track.

4. The barrier automatically returns to its initial position after an impact without human intervention.

Spring absorption system.

5. Its lightness makes it easier to install the barrier. Small wheels may be mounted within the barriers to allow for the easy change of layouts, and also to create entry doors to the pit lanes.



Pit Lane.

6. The colour of the barrier clearly shows the course without having to add signals. Led lamps may also be installed to make the track even more stunning.

Top LEDs.

PROTEX KARTING The safest and most profitable barrier in the market.

Sold in 16 different countries.