Acoustic Protection

Environmental applications of Tierra Armada®
The Tierra Armada, S.A. technology-based sound barrier system offers an optimal solution resulting from the experience obtained after a long program of investigation and testing involving materials derived from concrete.

The main objective of this product is to retain the noise and vibrations coming from the traffic lanes (roads, railways, etc.), producing a very effective screen to significantly reduce this environmental impact.

Tierra Armada® has developed new types of absorbent screens based on the use of new materials, such as “wood concrete” and concrete without modified fine elements. It is with these new materials, and with new grooving geometries combined with modern insulating elements that we are able to offer a new generation of absorbent screens with a higher absorption index than other currently available alternatives.

Tierra Armada® has strongly supported the development of this type of technology which is why it is the only European company to have presented four types of screens to the European project QUIESST, seeking to evaluate the methodologies of on-site measurement of different acoustic parameters (reflection and isolation).

The finishing of the panels can be complemented with different patterns and pigmentations for concrete, which can be arranged both on the sound absorbing and the resistant part. This resistant surface can even receive different treatments, such as deactivated concrete or sandblasting.
For many years, the noise barrier market has been mainly in the category of A2 in accordance with the absorption standard UNE-EN 1973-1. Importantly Tierra Armada® has improved the characteristics of the product through new products to provide integrated solutions that now meet categories A3 and A4. The use of innovative materials, such as modified porous concrete or wood-concrete, complemented by an appropriate geometry for acoustic panels has allowed us to reach these absorption values.

As far as acoustic insulation is concerned, and in accordance to the UNE-EN 1793-2 laboratory standard, all screens are part of the highest category B3 (DLR> 24).

In addition, the new developments have improved the isolation factor in optimal installation conditions, resulting in a guaranteed increment taking account of the specifications required. To this end, a detailed study of the joints to be used between the panels as well as the panel-profile contact was carried out. This enabled us to satisfy market demand with a competitive product. Our production process has been adapted to produce panels with a maximum distance between profiles of 6m. This has minimised the foundations required. It is also currently viable to incorporate the insulation in the lower sections of panels to foundation level.

An alternative to concrete panels is the modular green screen acoustic protection solution that can be used even when the environmental requirements are very strict and would even prevent the use of concrete. For these elements the insulation is attained by the acoustic absorption capacity of the fill material as well as the vegetation.
TIERRA ARMADA®
The value of experience

After more than 45 years, Tierra Armada® remains more than a manufacturer, becoming a supplier of engineering solutions through prefabricated elements, hence the diversity of its products.

- Reinforced floors & walls
- Prefabricated gantries, frames
- Tri-articulated vaults. TechSpan®
- Abutments and buttresses. Reinforced Earth®
- Double T beams and trough beams
- Stacks, trimmers, cornices
- Acoustic panels
- Green walls. Geotrel®

The versatility of the Tierra Armada® team makes it possible to adapt to both the national and international markets, always in close collaboration with the Customer for each project undertaken.