



# Tunnelling Asia' 2023

International Conference on  
Climate Change Resilience and Sustainability  
in Tunnelling and Underground Space



ASSOCIATION  
INTERNATIONALE DES TUNNELS  
ET DE L'ESPACE SOUTERRAIN

AITES

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INTERNATIONAL TUNNELLING  
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ASSOCIATION



## CARFOAM EXPOSED SHEET FOR TUNNELWATERPROOFING, SPAIN AND HINDCON CHEMICALS LIMITED

by

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### CARFOAM WATERPROOFING EXPOSED SHEET

- Does not need any subsequent coating.
- Self-extinguishing, the fumes are non-toxic and no flames drip.
- For all types of tunnels, new and to be rehabilitated, even tunnels in operation.
- Very important economic and time savings.
- It is not necessary to waterproof 100% of the tunnel, only areas with problems.
- It is not necessary to remove existing electrical installations.
- For mining tunnels, roads, railways, subways or galleries



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### CARFOAM WATERPROOFING EXPOSED SHEET

- More than 3 million m2 installed in different countries such as Spain, France, Italy, Switzerland, Norway, Finland, Colombia, Chile, Ethiopia and Turkey among others.
- CE (European Community) marking is mandatory for all construction products in Europe and guarantees the suitability of the product and its quality.
- Has an EPD certificate An Environmental Product Declaration (EPD) is a document that communicates the environmental impact of a material during its life cycle, from the raw material extraction process, transportation to the manufacturing plant. manufacturing and manufacturing process of the product.
- CARFOAM® exposed sheet does not contain CFCs, HCFCs or plasticizers, so it is NOT HARMFUL FOR THE ENVIRONMENT.



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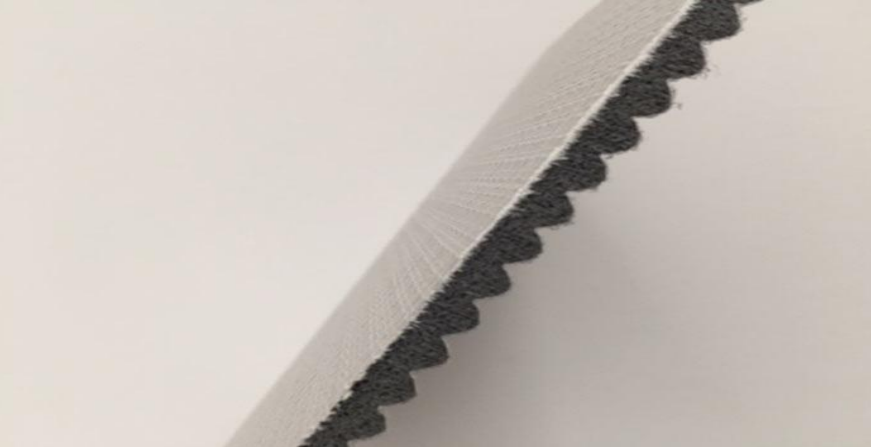
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The exposed outer layer provides mechanical resistance.

The intermediate layer has the desired degree of thermal insulation thanks to the crosslinked polyethylene or polyolefin foam.

The inner face, the one that is in contact with the tunnel surface, provides mechanical resistance, weldable and drainage and consists of a CHANNEL-EMBOSSED ALU FILM.



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## ROAD TUNNELS



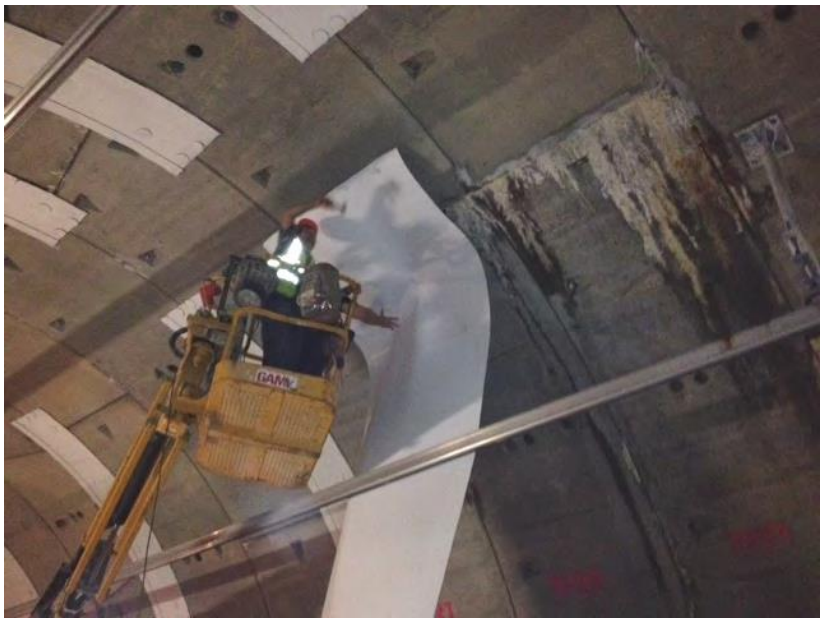


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### METRO AND RAIL TUNNELS



November 22-23, 2023, Mumbai, India



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### GALLERIES





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### CONCLUSIONS

- IMPORTANT ECONOMIC AND TIME SAVINGS.
- VALID FOR ALL TYPES OF TUNNELS, NEW AND TO BE REHABILITATED.
- REFERRING TO THE ENVIRONMENT AND SUSTAINABILITY:
  - SAVINGS OF RAW MATERIALS BECAUSE IT IS NOT NECESSARY TO WATERPROOF THE ENTIRE TUNNEL AND INSTALLATIONS IN OLD TUNNELS ARE USED.
  - VERY IMPORTANT SAVINGS OF CONCRETE IN NEW TUNNELS.
  - SAVINGS IN TRANSPORTATION AND CO2 EMISSIONS.
  - PRODUCT WITH EPD CERTIFICATE.



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Thank you very much for your attention and at your disposal for any clarification or expansion you may need.

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