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ProtectPav, the Protective Pavement for Vulnerable Road Users

When considering the safety of vulnerable users in urban areas, the pavement is rarely the first element to be investigated, even though it is responsible for severe injuries when falling on it. Paving is everywhere in our cities and must have an important place in improving our infrastructures and community wellbeing. Therefore, to enhance vulnerable users' protection, this project focuses on designing innovative impact-absorbing pavements, to make the pedestrian and bike lanes pavements less dangerous than the classic ones made out of rigid traditional asphalt. Specifically, the project's aim is to reduce the severity of possible human injuries resulting from falls and increase users safety. To achieve this, crumb rubber from end-of-life tyres is successfully utilised as the primary resource, bringing into the innovative layer its elasticity to absorb the impacts. Containing more than 50% (by volume) of recycled rubber, the impact-absorbing material considerably fosters the circular use of tyres and is environmentally friendly. Inspired by the playground materials, the challenge is to transpose the technology in the traditional asphalt paving methods making the implementation of extended portions of impact-absorbing pavements (e.g. by municipalities). Finally, besides the shock-absorbing properties, the use of a cold binder makes possible a heat-free process. Together, these aspects enable the creation of more sustainable, accessible, and safer urban infrastructures. The advanced "soft" material "ProtectPav, the protective pavement for vulnerable road users" allows significant injuries reduction results, without heat-related issues including smell and fumes and eventually, an overall lower carbon footprint impact.

MINI STORY

WHAT IF SIDEWALKS WERE SOFT?!

