

MARKET

for composite solutions

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INFRASTRUCTURE

Composite decking for subway evacuation platforms offer a durable alternative to concrete

China's 12th Five-Year Plan for scientific and social development targets the construction or expansion of urban rail transit systems in over twenty-five large cities across the country to alleviate traffic congestion, thereby helping to reduce environmental pollution. It is estimated¹ that over 2,600 km of tracks could be laid, most of which will be in underground tunnels requiring reliable, safe and cost-effective emergency evacuation infrastructure.

Installing walkways throughout the entire length of subway tunnels provides a reassuring solution following an incident which requires passenger evacuation. The self-supporting flooring, which is composed of pultruded composite decking, is made using a phenolic resin matrix reinforced with Advantex[®] glass fiber from Owens Corning, and manufactured by established Nantong Mincom Composite Materials Co., Ltd. for the Kunming City (Yunnan Province) subway extension project.

Essential safety features

The phenolic glass fiber resin reinforced composite decking displays an inherent high-heat resistance of up to 200°C, excellent fire retardancy and low-smoke toxicity thereby meeting the China-specific testing method GB/T 8624 for the flammability of building products,

essential properties for a subway evacuation application. The decking also exhibits a compression strength over 80MPa - five times greater than concrete equivalents - and a flexural strength of 291MPa, both contributing to a secure walkway for train passengers in case of emergency. In addition, with a water absorption rate one-fifth of that of concrete, the pultruded composite decking is extremely durable, waterproof and rot proof.

Six times lighter than concrete, easy to install

“Per square meter, the weight of a pultruded composite evacuation platform is 25kg - six times lighter than a concrete counterpart which is over 150kg.”

says Jing Zhou, General Manager, Nantong Mincom Composite Materials Co., Ltd. Installing a concrete platform needs prefabrication, greater mechanical handling and offer limited on-site adjustments. However, two construction workers can manoeuvre, cut and fit individual lightweight pultruded composite decking and construct up to 25 kilometers of walkway in about two months.

¹ According to Nantong Mincom Composite Materials Co., Ltd. All technical data provided by Nantong Mincom Composite Materials Co., Ltd.

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