PROTECTIVE SHIELD FOR RAILWAY BRIDGES

A modern electric protection roof designed for installation above overhead contact lines, intended to replace the old protective roofs made of steel mesh and sheet metal – developed in collaboration with the Swedish Transport Administration. The roof solution complies with the guidelines for electrical protection installation on bridges over railway lines. The design blends in with the surroundings, and forms a solid barrier against live conductors. The protective roof structure also serves as an effective suicide prevention barrier, suitable for both railway and road bridges.

The structure is fatigue-calculated by simulation of the snow- and wind load and the wind load from passing trains. The solution is watertight and tamper-proof and can be manufactured in execution class EXC2 or EXC3. The design also meets the fundamental requirements for noise barriers as specified in the CE standard EN 14388 and can be installed as splash protection at traffic interchanges.

The nano surface treatment of Hammerglass helps to ensure that dirt and dust are in most cases washed off by the action of rain. The surface treatment also provides 99.96% UV protection, which means that the material will not discolour or undergo any other change in optical quality over time.

Design and installation

The electrical protection roof is made of 12 mm Hammerglass, with 99.96% UV protection. The installation is carried out using an angled post system, bolted to the side of the bridge's edge beam. The screen can be mounted vertically or angled outward from the bridge and does not affect the properties of the bridge railing. During bridge renovation or new construction, the posts are mounted with a base plate beneath the railing posts.

Draft regulatory text

"Protective shields shall be designed in accordance with current electrical protection standards and strength- calculated on the basis of wind and snow load and of current wind load from trains, and shall be constructed in 12 mm chemical-resistant (must withstand acetone), hard-coated polycarbonate offering at least 99.96% UV protection, type Hammerglass, mounted on angled posts in execution class... [EXC2 or EXC3]... of surface coating class C5-M, type HMG iNFRA system Bridge-3."

TECHNICAL SPECIFICATIONS PROTECTIVE SHIELD	
Max cc distance	2000 mm
Product dimensions HFRHS	120x120 mm
Hammerglass dimension	12 mm
Height over road	1,8 m
IP class	IP3X
Requirements document	Bridge construction requirements (2016:0214), VGU (2015:086)
Corrosivity class	C5-M (1561:2009)
Execution class	EXC2, EXC3