

# LIGHTER, COST-EFFECTIVE, LOW-MAINTENANCE BRIDGE DECKS

## MARSHAL JOZEF PILSUDSKI BRIDGE, TORUN, POLAND

“The Marshal Jozef Pilsudski Bridge project is a fantastic showcase for pultruded composites in civil engineering. Nearly 1 km long, the new walkways highlight not only the weight-saving and durability benefits of composites, but also the on-site cost and time advantages of a large-scale custom profile design. The PulStrand® 4100 product performed beautifully during fabrication.”

— Izabela Reich, Fibrolux GmbH

### Project Overview

**More than 300 tons of Owens Corning® PulStrand® 4100 (19200 Tex, single-end roving) was used to manufacture pultruded composite bridge deck components for Fibrolux GmbH’s largest civil engineering project to date.**

Originally constructed in Münsterwalde, Germany in 1909 as a road and railway crossing, the main bridge structure was disassembled and moved to Torun in north-central Poland in 1934. The Marshal Jozef Pilsudski Bridge now links the southern part of town with Torun’s UNESCO World Heritage Site, Old Town.

In need of a functional update, it was determined to widen the current pedestrian/bicycle areas of the bridge deck. With the existing bridge structure unable to support the weight of wider steel pathways, engineers needed a solution that was lightweight, cost-effective, and low maintenance.

### Project Results

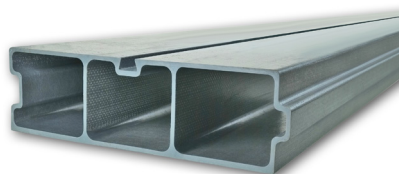
Engineers, architects, and specifiers are building smarter with next-level materials. Using Owens Corning® PulStrand® 4100 single-end glass roving, Fibrolux fabricated and supplied more than 16 km of large-scale, custom fiberglass pultruded deck panels that enabled a lighter, more durable, and low-maintenance solution for the refurbishment of the 1-km-long bridge.

The 19200 Tex of PulStrand® 4100 allowed Fibrolux to produce larger-than-normal parts without impacting line efficiency. Their team found the product to possess smooth handling and processing, and good wet-out, with the desired mechanical properties.

The bridge enhancement included an interlocking deck formed from eight massive triple-cavity pultruded profiles, 500 mm x 150 mm per section. The design expanded the walkway area from 2 m to 4.5 m in width, creating a safe space for pedestrians and cyclists.

The pultruded sections were delivered to the site, cut to length, assembled using custom stainless steel fasteners, and then coated with an anti-slip coating, creating panels approximately 4 m x 10 m that could be lifted into position using a small crane due to the low weight of the pultruded sections.

Fibrolux will also supply a range of standard fiberglass pultruded sections that will directly fasten to the composite walkway slabs and will be used to support the rainwater drainage system for the refurbished bridge.



Owens Corning in collaboration with

**Fibrolux**

#### Americas

**Owens Corning Composite Materials, LLC.**

One Owens Corning Parkway  
Toledo, OH 44659 USA  
1-800-GET-PINK®

#### Europe

**European Owens Corning Fibreglas Sprl.**

166 Chaussée de la Hulpe  
B-1170 Brussels  
Belgium  
+32 3 674 8211

#### Asia Pacific

**Owens Corning Shanghai Regional Headquarters**

40/F, Pudong Kerry Parkside,  
115 Fang Dian Road, Pudong,  
Shanghai, 201204, China  
+86-21-6101 9666

<https://www.owenscorning.com/composites> | [Composites@owenscorning.com](mailto:Composites@owenscorning.com)