



## Repairing of side walls for urban and overland buses

The side walls of urban and overland buses are put under major strain by the day-to-day demands placed on them: stone chipping, scratches and minor and major accidents quickly cause damage to the thin-walled metal sheets found in older models. What's more, in some cases the effects of weather and chemicals such as de-icing salts and cleaning products can lead to unsightly signs of corrosion, which can damage the image of the bus company among its customers. This makes repairs and touch-ups necessary.

As non-corrosive plating is not always available for older vehicles, TC manufactures side walls made of glass fibre-reinforced plastic that are suitable for all such models and makes, and provide an optimal and durable alternative to older metallic plating.

- impact-resistant
- non-corrosive
- easy to stick
- top surfaces
- prefabricated to fit
- easy to assemble





### Wave goodbye to rust!

Corrosion is a thing of the past. Based on glass fibre-reinforced plastic profiles, our side walls are not made of metal and therefore cannot rust. This reduces the cost of servicing and maintenance.



### Flexible, custom-built production

Our modern machinery and flexible means of production allows us to ensure a consistent level of quality even when manufacturing large quantities and a wide range of parts. We can make items for nearly all requested dimensions. Parts can be delivered cleaned, primed or painted.



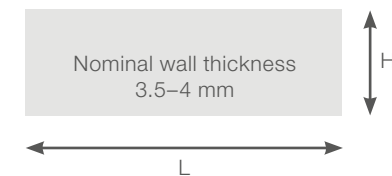
### Quick and easy assembly

Due to the high dimensional stability, the side walls can be stuck to the bus quickly and easily. There is no need for pretensioning as with metal side panels.

### Technical specifications

Description	Standard	Value	Unit
Wall thickness	–	3.5–4	mm
Thickness	–	1.8–2	g/cm <sup>3</sup>
Water absorption*	EN ISO 62	2–5	%
Fire protection	ECE R 118	OK	-
Thermal conductivity	–	0.3–0.4	W/m*K
Bending stiffness	EN ISO 527-4	17 / 5	GPa
Bending strength	EN ISO 527-4	170 / 30	MPa
Tensile strength	EN ISO 14125	170 / 70	MPa
Falling ball test	DIN 52306	OK	227 g ball, 3 m height

\* for the unpainted bare profile



Height H	Length L
max. 1.03 m	max. 6.7 m (bigger lengths of up to 12 m on request)
max. 1.20 m	max. 2.45 m

## Your systems supplier for the transport sector.

Composite materials are particularly popular in the transport sector due to their special technical and physical properties. TC has been working with renowned European manufacturers of railway vehicles, buses and lorries for many years. We use glass fibre-reinforced plastic (GRP) profiles to develop custom products that meet the most stringent requirements in terms of quality, safety and cost-effectiveness.

### Composite materials in the transport sector:

- Lightweight for minimal energy consumption
- Freedom in design for customised shapes
- High strength and rigidity, high breakage resistance
- Assessable fire protection properties
- High-quality, paintable surfaces

**IRIS**<sup>TM</sup>  
Certification

Certified for bonding in accordance with

**DIN 6701**

Class A1



### Bonding in accordance with DIN 6701 (Class A1)

We have been continuously expanding our expertise in the field of adhesive technology for years. A number of European Adhesive Engineers (EAE, DVS-EWF 3309), European Adhesive Specialists (EAS, DVS-EWF 3301) and European Adhesive Bonders (EAB, DVS-EWF 3305) have been trained in the process.

### Cutting-edge technology, vast expertise

When manufacturing pultruded profiles, the fire protection properties can be adapted to your requirements. We produce extremely high-quality surfaces that can then be painted for a textured or smooth finish. We machine the profiles with high precision using our modern 5-axis CNC machinery.

### Certified quality management

Every TC component is developed in accordance with the applicable requirements and standards. We conduct careful testing and documentation as a matter of course. Certification according to DIN EN ISO 9001:2015 confirms that our quality management is sound. We also hold IRIS certification in accordance with ISO/TS 22163:2017 for our customers in the rail vehicle sector.

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