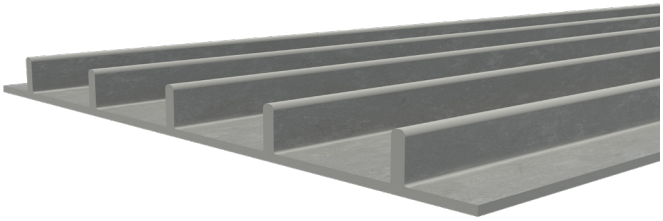
An Introduction to Mek-Dek

MEKINA INDUSTRIES
MANUFACTURER OF GRP FORMWORK

Product Description

Mek-Dek Glass Reinforced Polymer GRP Permanent Formwork panels are designed to support bridge decks during concrete pours and remain in place thereafter. This technique is otherwise known as Stay-In-Place formwork or sacrificial formwork.

With our in-house design capability, Mekina Industries can design and manufacture panels to suit specific applications.



Product Applications

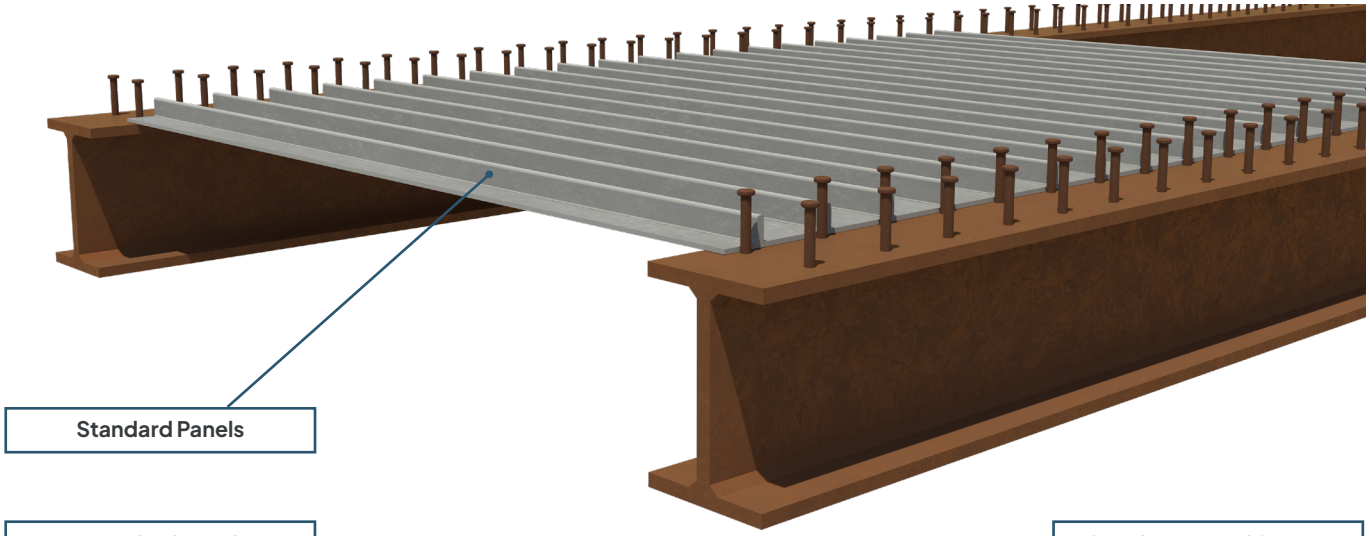
The most common application for Mek-Dek formwork panels include Bridges, Culverts, Jetties, Ramps, Water Treatment Works, Shaft Floors and Roofs. These mainly civil applications would include a cast insitu deck (often at height), to take advantage of the many benefits the products offer during installation.

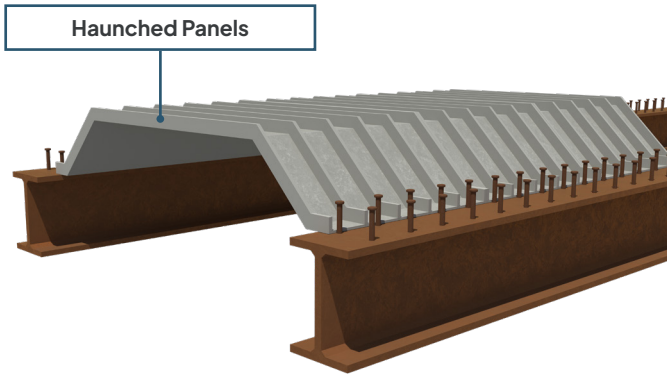
Key Features

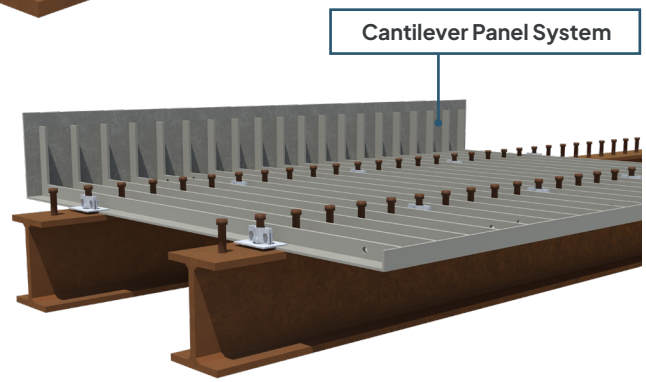
- Provides safe working platform
- Highly durable + sustainable
- Offsite installation often suitable on steel braced beams to minimise site works
- Minimal cranage required
- Safe for handling
- High strength to weight ratio
- Versatile to allow for complex geometries when required
- Manufactured to size to minimise site works
- Zero water absorption (0.5mm GRP equivalent to 50mm over) concrete cover
- Panels install simply from above
- Resistant to chemicals and salts
- Sealant system prevents grout loss
- No dismantling or removal required
- Non-corrosive & lightweight

Panel Shapes

Fully engineered panels offered in various shapes to suit geometry/application, whilst improving buildability.







Colours

Our panels are manufactured in RAL 7023 Concrete Grey as standard. If your project requires a different colour, simply provide us with a RAL colour.

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Mek-Dek Technical Information

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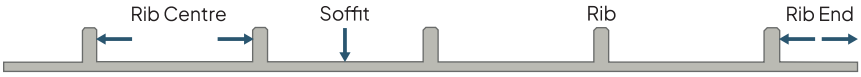
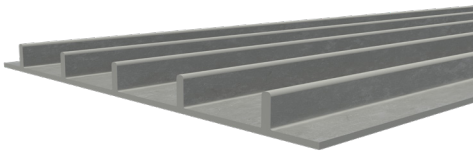
Product Information

The design table below shows our most commonly used panel types and their capacity. Should you have a requirement for larger panels to cater for greater loads or varied shapes, please get in touch as we also offer bespoke manufacture to order.

Indicative Section Through Mek-Dek Panel





Panel Type	Panel Width (mm)	Panel Height (mm)	Soffit Thickness (mm)	Rib Centres (mm)	End Rib (mm)	Ribs Width (mm)	Weight (kgs/m²)
40/100	700	40	8	100	50	7	24–42
50/100		50					29–51
60/100		60					40–80
70/100		70					43–89
75/100		75					73–99
40/125	750	40	8	125	62.5	6	23–37
50/125		50					26–44
60/125		60					35–67
70/125		70					39–77
75/125		75					40–82
40/150	750	40	8	150	75	5	22–33
50/150		50					29–39
60/150		60					32–58
70/150		70					35–67
75/150		75					54–71

Data

The below table is based on panels carrying a 200mm concrete deck depth (25kN/m² Concrete Density) along with 1.5kN/m² Live load. The span data table below has been created in accordance with Highway Structures & Bridges CD 359 Design requirements for permanent soffit formwork.

Code	Span (m)														
	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0
40/100															
50/100															
60/100															
70/100															
75/100															
40/125															
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Installing Mek-Dek

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Material

Glass Reinforced Polymer (GRP) Mek-Dek panels are produced from glass fibres laminated together using a Polyester Thermosetting Resin system. The resulting panel is resistant against a wide range of chemicals and temperature spectrums. Material samples are available upon request. There is a standard resin finish to the soffit, however we can provide a Gel-coat soffit finish to suit marine environments or similar if required.

Handling

We advise the installation team to check the weight of each panel to ensure it meets the sites' minimum lifting threshold. There are no sharp edges on the panels, however suitable PPE (including gloves) is advisable.

Cutting

Should the need arise to cut any part of the Mek-Dek panel then this must be carried out by a competent person nominated by the Contractor/Installation Manager in line with all Health and Safety requirements.

Please ensure you wear FFP1/2/3 Mask-Higher Grade P3 or Respirator when cutting or drilling, along with eye protection, gloves, and all other relevant PPE on site.

GRP Only

- Cutting through Mek-Dek panels will require a Diamond tipped blade.
- Drilling the Mek-Dek panels will require a Tungsten Carbide drill bit.

GRP & Ribs

Cutting through GRP and ribs (containing steel inserts) will require a Carbide tipped blade to suit the chosen machinery on site. Once the panel has been cut and the inserts are visible, it is important that the exposed steel is protected using a cold zinc/galvanise protection spray such as Galvafroid. (Please read the instructions carefully to ensure correct product usage).

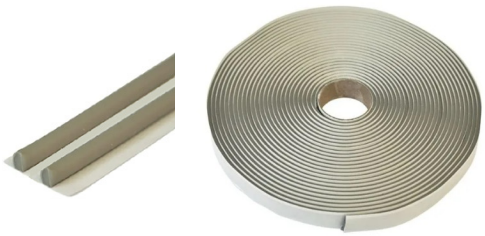
Use of Power Tools

Please follow general guidelines when cutting or drilling GRP products with power tools, as the material produces a non-toxic biologically inert dust. Dust levels should be kept as low as is reasonably practicable and must not exceed occupation exposure limits. In isolated cases, GRP dust may cause a slight, transient skin irritation. Should these effects become prolonged or should any signs of a rash occur, medical advice should be sought. All exposed skin should be thoroughly washed with soap and water. Any eye contamination should be washed out with copious amounts of sterile water.

Sealant System

Sealant System Key Features

- High Tack
- Extremely flexible and strong
- Colour – Grey
- Non-Toxic
- High Weatherproofing performance



Butyl Twin-Track Bead 2× Ø6mm x 10m long roll

Used to seal between the panel and supporting structure (concrete/steel).

Sealant is provided in 10m rolls for manual application to beam prior to panel installation. Please ensure beams are dry and free of debris. Push firmly to ensure good adhesion. Paper backing to be removed prior to panel installation.

Butyl Tape 1×50mm x 25m long roll

Used to seal between adjoining panels on top surface.

Sealant is provided in 25m rolls for manual application on top of joints of panels once in position. Please ensure panels are dry and free of debris. Push firmly to ensure good adhesion. No backing to be removed.

Transport / Packaging

Mek-Dek panels should be unloaded with care. Panels arrive banded to wooden chocks/skids and are fully shrink wrapped with appropriate information included. We advise storing panels in a secure area away from heavy machinery until installation.