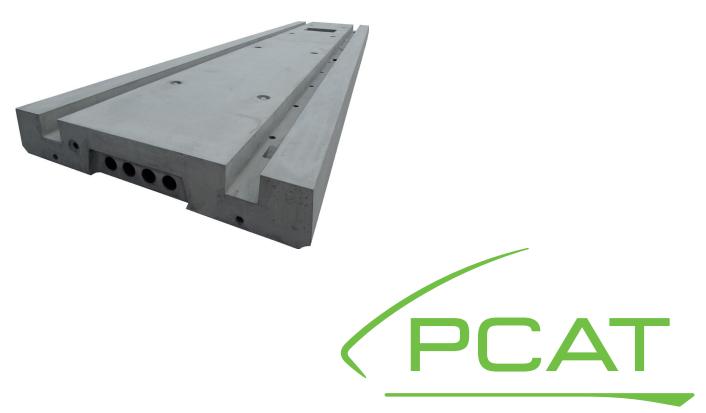
# Precast Advanced Track Ltd next generation slab track technology

# PCAT Light Rail Slab



Precast Advanced Track

# PCAT Light Rail Slab

Precast Advanced Track Ltd (PCAT) is a British company offering an innovative range of slab track systems for the 21st Century. Combining safe and rapid construction methods, with minimum city centre disruption and less impact on residents and development during construction and future maintenance of light rail projects.

# Low Impact Construction for City Centres

Key to the success of constructing a new light rail network is rapid installation whilst maintaining good quality construction, and minimizing the impact on the city centre. One of the expensive and time consuming items is moving all services from beneath the tracks in advance of construction. PCAT provides a completely different approach. Highest quality off site manufacture means completed pre-cast slabs delivered to site and installed using the latest fast track installation techniques. Uniquely, PCAT slabs can be removed after installation if required for access to utilities, so enabling the majority of services to be left in place below the tracks.

## **Design Features**

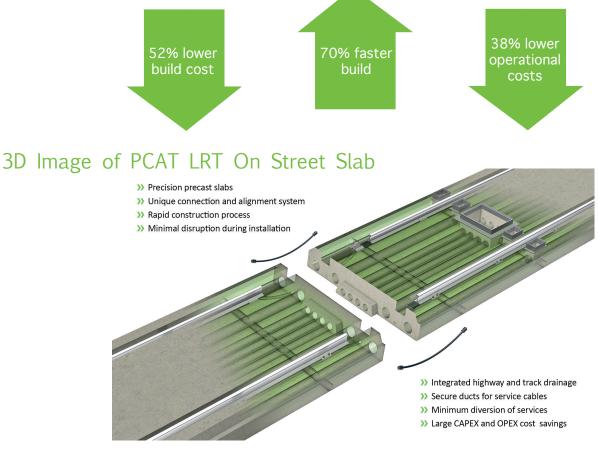
PCAT Light Rail slabs are available in 2 forms: the On Street slab which has a flat surface profile and is recessed for grooved rails and the Off Street slab which is a stiff, light weight slab system for out of town applications. Both slabs feature integral drainage ducts to allow management of surface and ground water, whilst service ducts keep cables secure within the slab and reduce the need to move services during construction.

The unique PCAT jointing method allows rapid construction without needing to use in situ concrete, and enables slabs to be lifted and removed if needed and are simply replaced if required.

# Concrete Technology

PCAT modular slabs are manufactured entirely from high strength macro synthetic fibre reinforced concrete, that eliminates stray current leakage issues and improves the toughness and durability of the slab structure. PCAT slabs have a 120 year design life and so reduce whole life cost.

## Key Deliverables



#### Rapid Installation

Key to PCAT systems is rapid, safe and accurate installation using mechanised panel lifters. Foundations for the slabs are designed to accommodate the residual strength of the existing road or track structure which can be formed by recycling the existing base materials thereby reducing the need for new imported materials and also reducing material removed from site as waste. The Hydraulically Bound Material (HBM) base provides a long life foundation minimising the risk of post installation settlement. The PCAT construction processes have been engineered to minimise weather dependent activities and provide a faster, less disruptive build sequence in city centre's. PCAT Rail slabs incorporate standard rail clip designs to suit the requirements of the railway operator and can facilitate any type of rail fixing.

#### Smart Technology

PCAT LRT slabs can incorporate a range of rail types within the LRT On Street slab and a range of standard rail clip designs can be used in the LRT Off Street slab to suit operators preferences.

### PCAT System Solutions For:

- Heavy Rail <
- High Speed Rail <
  - Underground <
    - Tram Train <
    - Light Rail <
- Ultra Light Rail <

#### **Applications**

- Track Lowering
- ► Tunnels and Underground
- Track Renewal & Replacement
- Switches & Crossovers
- ► Poor Ground Conditions
- Upgrading Ballasted Track



LRT On Street Slab



**Integrated Services** 



LRT Off Street Slab

#### Services & Security

The construction of PCAT LRT slabs means there are opportunities for ducts and drainage channels to be incorporated into the slabs without detriment to the long term performance of the structure. This means features such as surface water drainage can be incorporated within the slab and diverting water to suitable outlet points. Provision is made within the slabs for the incorporation multiple service ducts, thereby allowing services to run along the route within the track slab, as well as crossing through it. Manhole chambers incorporated within the LRT On Street slab provide intermediate access where required.

#### Minimising Maintenance

The PCAT LRT slab systems are all about reducing the impact of the construction of a light rail system. The reduced build time, means a lower first cost, and the reduced maintenance results in lower whole life costs.

# Acknowledgements

PCAT would like to acknowledge the assistance and research funding provided by the UK Tram during the development of the PCAT Rail slab track system.

Funding was provided under Phase 1 of the Low Impact Light Rail project from UKTram, Innovate UK, and DFT.

K Tram



Pre Cast Advanced Track Ltd, Union Bank, King Street Cheshire, WA16 6EF, UK

www.precastadvancedtrack.com | info@precastadvancedtrack.com

Tel: +44 (0)1565 633111 | Fax: +44 (0)1565 633555