

LEADING SOLUTION
PROVIDER FOR
OVERFILLED
PRECAST
ARCH BRIDGES



BEBO Arch System Vol.05





Leading Solution Providers

The BEBO Arch System is a standardised patented precast concrete arch system for the design and construction of earth overfilled bridges, tunnels, culverts and other underground structures.

The fully pre-engineered BEBO System features the world's largest precast concrete arch structures, offering spans from **3.7m to in excess of 35m**.

We are the official licensee for the UK and Irish markets, delivering BEBO arch structures since 2006.



The Best Overfilled Arch Structures Worldwide

Typical applications include:

ROAD BRIDGES
RAIL TUNNELS
UNDERPASSES/OVERBRIDGES FOR PEDESTRIANS
LIVESTOCK OR VEHICLES
GREEN BRIDGES
VIADUCTS
STREAM CULVERTS
SEWAGE OUTFALLS & FLOOD PLAINS

Used and Approved by:

CONSULTANTS
PUBLIC AUTHORITIES
LOCAL GOVERNMENT
PROPERTY DEVELOPERS
HOUSE BUILDERS & CONTRACTORS IN THE ROAD,
RAIL AND WATER SECTORS WITHIN THE UK AND EUROPE

Arch Types

The BEBO Arch System consists of a series of predefined highly efficient and optimised arch shapes. The different standard spans and rises allow for the fitting into different layouts such as shallow and high grade separation applications, the accommodation of various clearance profiles for the highway and rail structures overpasses as well as the fulfilment of stringent flow capacity requirements for river crossings.

BEBO E-SERIES

1. SPAN RANGE

3.7m (E12) up to 30m (E30mT)

2. SINGLE LEAF ARCH (E12 to E48)

For the smaller spans up to 14.6m a single arch element forms a complete arch ring.

The thickness of the concrete section along the development is constant.

3. TWIN LEAF ARCH (E15.5mT to E30mT)

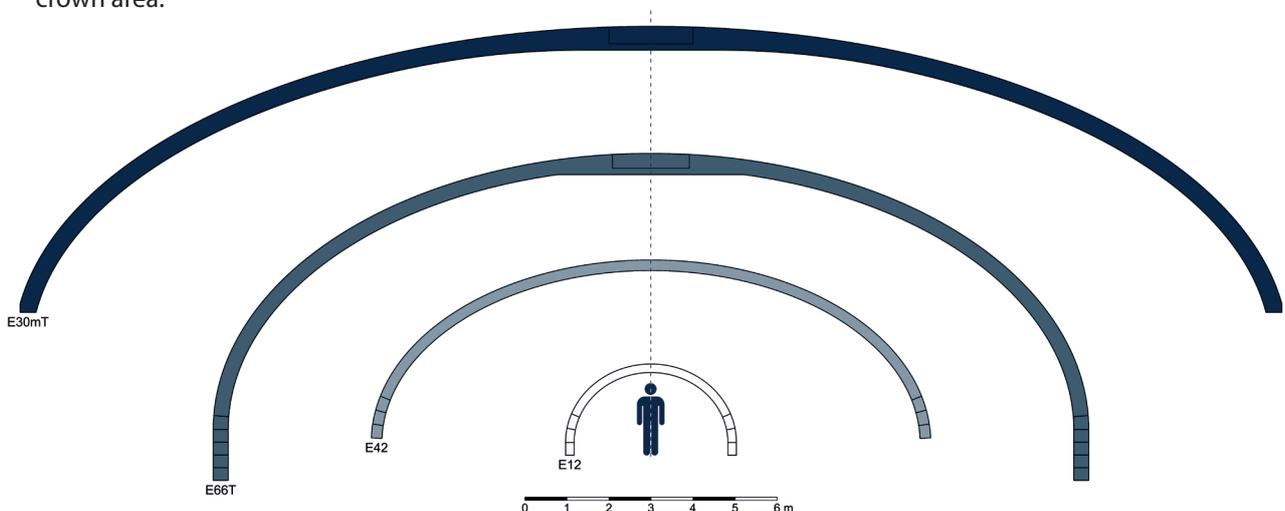
For the larger spans from 15.5m upwards two elements form one arch ring. The thickness of the concrete section is constant except for the crown area.

The connection of the two arch elements, the patented crown joint, incorporates a locally thickened section to allow for easy in-situ casting of the monolithic connection (no formwork required).

4. OVERFILL HEIGHTS

The standard range of overfill above the arch crown is 0.6m (minimum) to 5.0m (maximum).

Some BEBO E-Series arches can handle higher overfill heights. Such non-standard applications are designed on a project-by-project basis by the BEBO technical staff.





N17/N18 - Gort to Tuam - OB241 Coole Green Accommodation Overbridge (BEBO Twin Arch E15.5mT - Span 14.3m - Rise 5.9m)



A470 Cwmbach to Newbridge -on-Wye- Red House Bridge (BEBO Arch E15.5Mt/5 - Span 15.5m - Rise 5.6m)

BEBO C-SERIES

1. SPAN RANGE

9.1m (C30T) up to 20.1m (C66T)

2. TWIN LEAF ARCH (C30T to C66T)

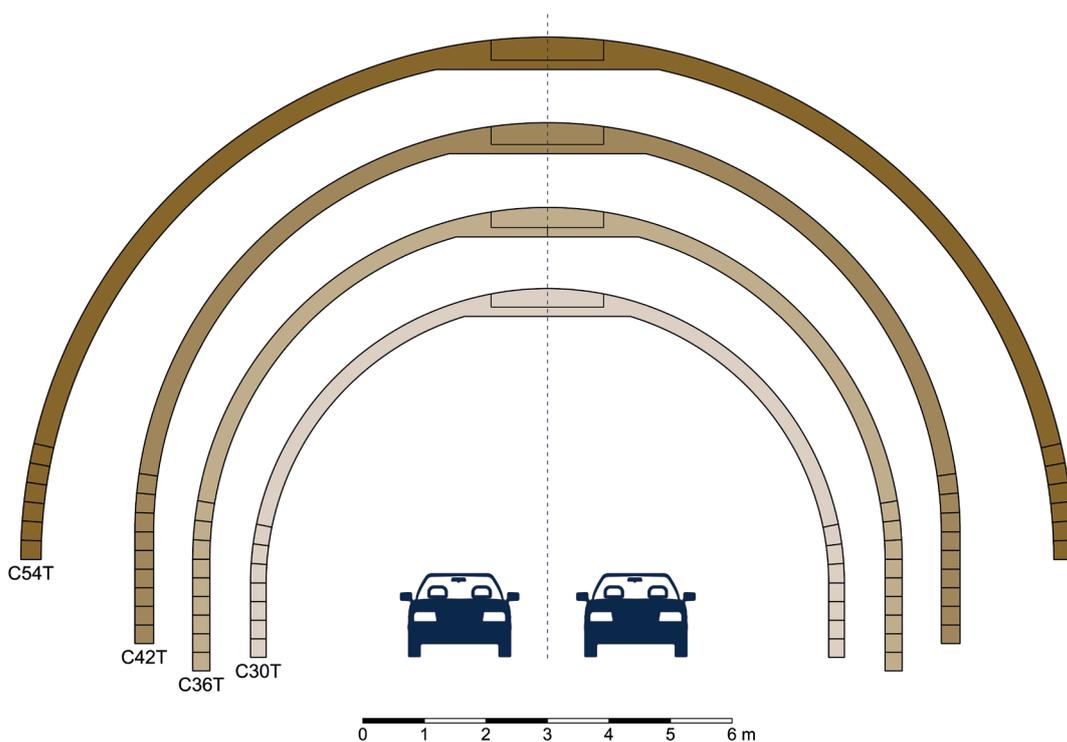
Due to the dimension of the circular-shaped arches (transportation), for all spans two arch elements form one complete arch ring. The thickness of the concrete section is constant except for the crown area. The connection of the two arch elements, the patented crown joint, incorporates a locally thickened section to allow for easy in-situ casting of the monolithic connection (no formwork required).

3. OVERFILL HEIGHTS

The standard range of overfill above the arch crown is **0.6m (minimum) to 5.0m (maximum)**.

C-Series arches, however, can handle considerably higher overfills in excess of **10m**.

Such non-standard applications are designed on a project-by-project basis by the **BEBO** technical staff.





Aberdeen Western Peripheral Route PS02 and PS41A (BEBO Arch C42T/9 - Span 12.802m - Rise 8.026m)



Camborne Pool - Redruth East - West Link - Red River Valley Arches (BEBO Twin Arches C42T/5 - Span 12.802m - Rise 6.807m)

BEBO T-SERIES

1. SPAN RANGE

10m to in excess of 30m.

2. SINGLE LEAF ARCH (T10m to T12.5m)

For the smaller spans up to 12.5m a single arch element forms a complete arch ring.

The thickness of the concrete section along the development is constant.

3. TWIN LEAF ARCH (T15mT to T30mT)

For the larger spans from 15m upwards two elements form one arch ring. The thickness of the concrete section is gradually increased towards the arch crown in order to accommodate the patented crown joint connection of the two arch elements.

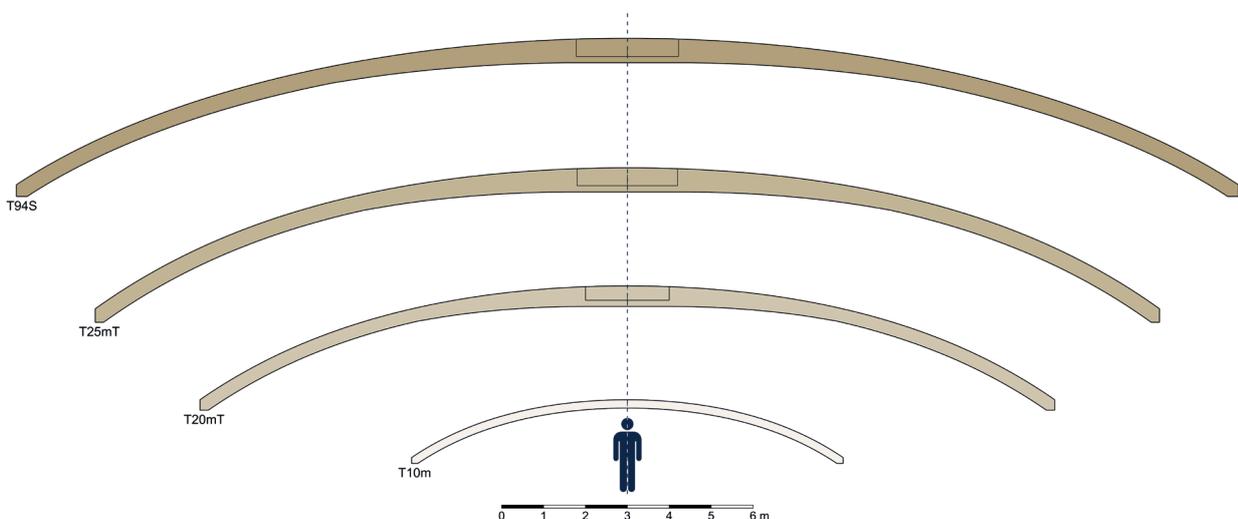
3. OVERFILL HEIGHTS

The standard range of overfill above the arch crown is 0.6m (minimum) to 2.0m (maximum).

4 FOUNDATIONS

T-Series arches require a special foundation to account for large horizontal support forces. Such foundations have to be designed on a project-by-project basis taking account of the site specific geotechnical data.

** Larger spans can be considered on a project-by-project basis**





Stornaway - Gisla Bridge (BEBO Arch T36 - Span 12.108m - Rise 1.382m)



Heysham to M6 Link - Milestone Canal Bridge(654BI) (BEBO Arch T94S - Span 28.651m - Rise 3.213m)

asset BEBO® Concrete Arch System



The **asset BEBO® Arch System** is a standardised patented precast concrete arch system for the design and construction of earth overfilled bridges, tunnels, culverts and other underground structures.

Suitable Applications:



Road



Rail



Environmental

Product Features:



Span



Arch



Shapes



Modular

What are the benefits of a BEBO® Concrete Arch System?



Types of System:



Access Bridge



Green Overbridge

Approvals & Certification:



Dedicated Contact:

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FREE DESIGN SERVICE

Our Free Design Service includes:

- Initial discussion of the project to review client's requirements including the project application, the project brief or scope of works.
- A review of the project is undertaken in order to provide a solution from our product range.
- Produce 2D cross-sections or a plan layout prior to offering a formal quotation.
- Conduct a design check to CD375 when offering asset MultiPlate® MP200 solutions.
- Provide initial technical support up to 1 hour.
- Collaborate to develop a value-engineered solution and provide a quotation.



PROFESSIONAL DESIGN SERVICE

Our Professional Design Service includes:

- Professional design service contract, which can incorporate superstructure, design to Eurocodes, AIPs and complete engineering drawings.
- Substructure design on our own products can be offered with local engineering support.
- Produce 3D overview layouts.
- In-house CAT2 design and check certificates on our own products.
- Desk study reports for a chosen product and potential applications.
- Provide design capacity check on existing corrugated steel bolted structures.



MATERIAL SUPPLY SERVICE

- Off-site manufactured modular products quality checked to arrive on site right first time.
- Just-in-time delivery of products to minimise site construction times and promote health and safety.

PRODUCT PRESENTATIONS

We are happy to deliver in person or digital Product Presentations via Teams. Get in touch with us today to find out how we can assist.

PROJECT CONSULTATIONS

Our experienced Product Managers are readily available for any pre-start and/or project consultation meetings you may require.

APPROVAL IN PRINCIPLE

We are able to assist in completing an Approval In Principle (AIP) on your behalf (chargeable service), related to the structure.



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