



Ischebeck Titan Group

Founded in Germany over 120 years ago Ischebeck is renowned internationally for its aluminium formwork and false work systems, trench support systems and ground engineering products.

Ischebeck Titan Ltd

The company operates from headquarters centrally located in the heart of the UK.



Product Availability

Substantial stocks of equipment are available ex-stock from the company's strategically located 4-acre distribution site, with most main product lines available nationwide on a 48-hour delivery. Products are available for both hire and outright purchase.

Technical Support

We will participate in concept stage development. Providing input on applications, production rates, budget design, programming and costings. Active for on site support and training. We can provide guidance on industry special European and national standards.



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- High quality, low cost construction
- Average 15% cost and 25% time savings
- Significant acoustic and thermal benefits to the frame
- 24 hour construction cycle

The Outinord Tunnelform System from

The pressures of cost and time are familiar to everyone involved in the construction process, from the architect, engineer and contractor through to the client, who rightly demands build quality at the right price and within time schedules that allow the building's value and utility to be realised as quickly as possible.

For some time now, the construction industry has been aware that by adopting principles from the manufacturing industry, the building process can be completed efficiently and economically, with benefits for everyone concerned.

Available in the UK exclusively from Ischebeck Titan, the Outinord Tunnelform system allows these

principals to be realised and is recognised by The Department of Trade and Industry as a Modern Method of Construction. It promises significant savings in time and cost compared to other traditional methods of construction without compromising on quality.

Tunnelform has proved itself to be an effective method for cellular construction projects, such as hotels, student accommodation, flats, low and high rise housing, prisons and single soldier living accommodation. Many projects throughout the UK bear testimony to the system's effectiveness.



The benefits of using Outinord Tunnelform are exploited to the full when Ischebeck Titan is invited to become a technical partner within the design team. We have been associated with Outinord since 1994 and our experience with the Tunnelform system allows us to make recommendations in project design, management and methods that enable the entire project to take full advantage of the many benefits that Tunnelform offers.

Founded in 1955, Outinord operates in over 100 countries throughout the world, enjoying a global reputation for engineering excellence and innovation.

Rethinking construction



Outinord can manufacture more than 25,000m² of formwork per month at the company's ISO 9001 accredited production facilities and headquarters in northern France.

The company's commitment to product design and solutions development is renowned throughout the world's construction and civil engineering industries, making Outinord the market leader in tunnel formwork technology.



The Outinord Tunnelform System from

What is Tunnelform?

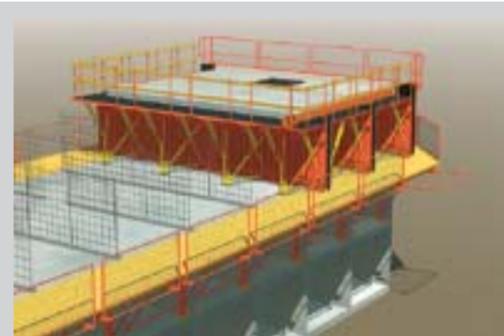
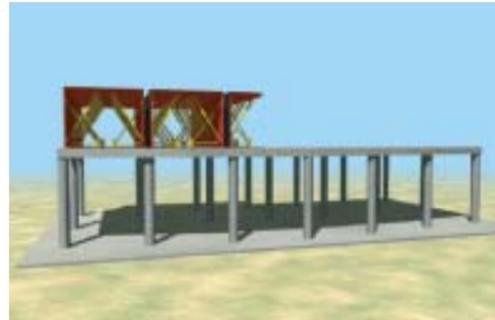
Tunnelform is a formwork system that allows concrete walls and floors to be constructed in one operation, making the system particularly suitable for cellular type construction.

Tunnelform can accommodate room widths from 2.4 to 6.6m. When rooms are wider (up to 11m), a mid span table is incorporated between the tunnels.

The main component of the system is the half tunnel. Manufactured entirely from steel, including the face of the form, the half tunnel provides the rigidity and smooth face necessary to produce a consistently high quality finish to the concrete.

When two half tunnels are put together this creates a tunnel. The tunnel sections come in two lengths, 1.25 and 2.5m. These are fixed together to produce a tunnel length that suits either the building dimensions or the craneage. The tunnel is tailored to the room width and height by the inclusion of infill sections which are sacrificed at the end of the job. These are not loose fittings but are an integral part of the tunnel.

Benefits of the Tunnelform technique are maximised where the production process is operated on a 24-hour cycle, an achievable objective thanks to the support and training offered by Ischebeck Titan's experienced engineers.



Typical first pour set up: Two and a half tunnels, a gable wallform and a set of dismantling platforms. Three walls and two slabs are poured, which, in the context of a hotel, would constitute four bedrooms.



For the second pour, four of the half tunnels are moved to the next position. One half tunnel remains in place as it is supporting a section of slab on the first pour. On the second phase, two walls and two slabs are poured, creating a further four bedrooms.

The 24-hour cycle



07.00
The engineer completes a concrete test to make sure that the previous day's pour has achieved the required strength. At the same time, the site team removes the heaters, ties, stop ends and other non-structural work.



07.30
When the engineer gives permission, the tunnels are struck, manually pushed onto the dismantling platform, picked up by the crane, scraped, oiled and repositioned. This procedure is usually complete by 10.30



10.30
The next phase is to fix the reinforcement, any cast-ins or inserts and the stop-ends on the slab.



14.30
The concrete is poured at around 14.30 each day. This operation can take between 2 and 3 hours.



17.00
After pouring, the curtains are closed and the heaters fired up. Heating accelerates the curing process of the concrete



The whole exercise is repeated the next morning at 07.00.

The Outinord Tunnelform System from

What makes Tunnelform effective?

The Structure

Tunnelform is most effective when the structure satisfies certain criteria:-

Repetition- A minimum of around 100 rooms in the case of a hotel.

Consistency- Wall to wall dimensions, wall thicknesses and floor to ceiling heights.

Layout and surrounding access have to suit the system and extensive use of mesh reinforcement aids the 24 hour cycle.



Preparation and planning

Preparation is vital to achieving the daily cycle. Vertical elements, such as kickers, reinforcement, services (if any) and box-outs need to be fixed in place to facilitate the 24-hour cycle. Where applicable, the casting-in of services saves a considerable amount of time and minimises the need to bring on other trades, such as electricians.

Training

As part of the package, Ischebeck Titan places a qualified technician onto the job. His main function is to train the site team on how to use the system properly and safely. He makes sure that the team achieves the all-important daily cycle and does not leave site until this happens. He also ensures that the designs are being interpreted correctly and that operatives have a clear understanding of elements of the work which may occur after he has left the site.



The benefits of using Tunnelform

Cost

Tunnelform promises savings of an average of 15% on the cost of the frame compared to other traditional building methods. Most of the cost savings are achieved through the considerable savings in time, an average of 25% is commonplace. Contractors' forming costs are reduced thanks to the quick turnaround of the system and the reduced number of operatives required to make Tunnelform work.



Quality

With Tunnelform, faster and cheaper do not mean sacrificing quality. The even steel face of Tunnelform's shutters creates a smooth, high quality finish capable of receiving direct decoration with the minimum of preparation, reducing the requirement for finishing trades, providing additional cost savings and speeding up the entire process.

The environment

Sustainability in construction and throughout the whole life cycle is crucial for contemporary structures. Concrete is meeting these demands, especially in the house-building, hotel and student accommodation sectors. Its thermal and acoustic performance makes concrete an excellent choice of material to meet these ever-important challenges.



Versatility

Tunnelform offers the design team a great deal of freedom in the layout and overall appearance of a building development. Crescent and S-shaped structures are common, whilst Tunnelform's versatility allows a wide variety of schemes to be created to suit many different requirements.