

# TUNNEL CAPABILITIES



SERVICING THE CONSTRUCTION INDUSTRY

**D**anterr

# CONCRETE ACCESSORIES FOR AUSTRALIA



**Danterr** is a national concrete and construction products supply company. We source and distribute products to Australia's largest construction projects – projects that are meeting Australia's infrastructure, and public works needs. Our sphere of influence includes public transport initiatives, major road upgrades, transport tunnels, sporting venues, wind farms, bridges and rail lines just to name a few.

Our approach is to research and investigate the specific nature of each individual project and its requirements, and then, work with reliable local and overseas suppliers to ensure that our clients' needs are fulfilled.

Our passion to be at the leading edge of Australian construction capabilities is also a reason why so many building and construction companies choose **Danterr**. We never waver from sourcing and supplying the best of the best products, not to mention the most revolutionary.

Additionally, **Danterr** has a strong emphasis on sustainability and understand that the alignment of 'greener' outcome parameters is essential to the success of projects in an ever-evolving commercial market place regarding environmental sustainability.

**Danterr** approaches all projects with a determination to seek the best solution, which adheres to strict building and construction requirements, and is commercially viable for the client.

[Recent projects include...](#)



# PROJECTS



## Sydney Metro Stage 2

**Client: CPB Contractors & Ghella & John Holland JV**

Sydney Metro is Australia's biggest ever public transport project. The project entails tunnelling under Sydney Harbour for the installation of the rail track, as well as the construction of seven new metro stations, and the upgrading of 11 existing stations.

**Danterr** have supplied dozens of different products to Sydney Metro Stage 2 including bitumen board, dowels, backing rod, expansion foam, joint sealants, spacers including concrete spacers, plastic bar chairs, and plastic shims. Also for the Sydney Metro, **Danterr** have supplied the unique Nevosafe™ rebar protection system, reinforcing mesh, tie wire, bolts and nuts, expansion caps, builders film, curing compounds, bond breaker chemicals, formatubes, pile cage wheels and feet, polystyrene, denso tape, formply and fiberglass rod.



## West Gate Tunnel

**Client: CPB & John Holland JV**

The West Gate Freeway is to be upgraded and widened from 8 to 12 lanes. New express lanes between the M80 and the West Gate Bridge will reduce weaving and merging that leads to traffic congestion.

New tunnels from the West Gate Freeway to the Maribyrnong River upon completion, will take traffic underground and off residential streets.

There is also the Port to City precinct which will include a new bridge over the Maribyrnong River and an elevated road along Footscray Road will provide direct links to the Port of Melbourne, CityLink and an extended Wurundjeri Way.

**Danterr** will continue to endeavour to supply The West Gate Tunnel Project with required sacrificial formwork, spacers, debonding tubes, bitumen board and expansion foam. Backing rod, grouts, sealants, waterstops, membranes and builders' film will also be required, as will denso tape, epoxy and curing compounds. Almost anything that helps concrete remain structurally integral and keeps water out will be needed to complete the West Gate Tunnel. At **Danterr**, we are proud to say we have already started our distribution of products to this mammoth undertaking.



## Metro Tunnel

**Client: Cross Yarra Partnership JV**

Construction is well and truly commenced on the \$11 billion Metro Tunnel which will untangle the Melbourne city loop so more trains can run more often across the city. **Danterr** are thrilled to be involved in this much needed Victorian project. In the early Metro Tunnel works, **Danterr** have supplied a range of concrete joining systems and variety of concrete spacers to the Metro Tunnel with plenty more to come.

The Metro Tunnel will create capacity on the network to enable more than 500,000 additional passengers a week across Melbourne's train network, to 'ride the rail' during the peak periods. The project scope includes twin nine-kilometre rail tunnels from the west of the city to the south-east as part of a new Sunbury to Cranbourne / Pakenham line.

Five new underground stations will be created - North Melbourne (in the Arden precinct), Parkville (under Grattan Street), State Library (at the northern end of Swanston Street), Town Hall (at the southern end of Swanston Street) and Anzac (under the Domain Interchange on St Kilda Road). Two additional stations under Swanston Street will be directly connected to the City Loop at Melbourne Central and Flinders Street Station.

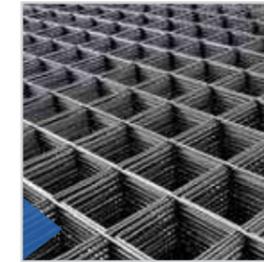
# TUNNEL

## SITE ESTABLISHMENT / PRECAST CONSUMABLES



### Hydrotite

Hydrotite is a hydrophilic waterstop with unmatched expansion and water sealing capacity. As Hydrotite expands it absorbs water and fills up concrete joint gaps conforming to the void variation. Hydrophilic material expands in a controlled fashion by approximately eight times by volume in the presence of moisture to create a pressure seal within the joint.



### Reo Mesh

Danterr Reo Mesh is a 500mpa steel reinforcing mesh suitable for use in a variety of applications. Standard reinforcing mesh sizes are 6.0m x 2.4m for the SL range of products. The wire used has a ribbed profile which improves bonding to concrete, which limits any concrete cracking that may occur as a result of concrete shrinkage.



### Joint Sealant

Danterr Joint Sealants are one-component, moisture-curing, low modulus, Class A, polyurethane sealants, with excellent joint movement capabilities. They cure into a flexible, durable and weather resistant sealant and exhibits excellent adhesion to a wide range of substrates.



### Slab on Ground Plastic Chairs

Slab on Ground Bar Chairs are designed to support reinforcing mesh in slab-on-ground projects. They are manufactured to provide dual-cover options in the one bar chair size for increased application flexibility. As they are manufactured from plastic there is zero-risk of corrosion and their lightweight and stackable design makes handling easy.



### Builders Film

Builders Film is a concrete underlay membrane that comes in Polyethylene sheet form. Builders Film is produced from a combination of virgin polyethylene resins and resins generated from recycled plastics. As Polyethylene is of a very low biodegradability, Builders Film is perfectly suited for use as a damp-proof underlay on the soil beneath a pour, or as a vapour blockade.



### Concrete Spacers

Cast Concrete Spacers ensure that the specified concrete cover to the reinforcement for structures and structural elements is achieved, both before and during concreting. Concrete Spacers are commonly used for the walls, columns and foundations in civil concreting applications.



### Pecafil®

Pecafil® is a flexible and versatile sacrificial formwork material perfect for concrete encasing service pipes. Pecafil® is also suitable for ground beams, footings and bases, pile caps, construction joints (stop ends), special shapes or curves, void formation, ribbed and waffle slabs, penetrations, recesses, temporary fencing and safety screens.

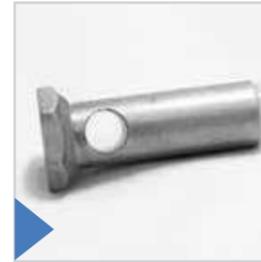


### Injection Hose Systems

Injection Hose Systems are used for sealing structural joints in below-grade structures and tunnels. The hoses act as a conduit for the passage of various injection materials; (both resin and cement based), into the concrete matrix thus sealing the joints and honeycombs.

Injection hose BPA-Predimax® 11 / 19 and Injection hose BPA-CEM11 / CEM19 available.

# TUNNEL PRECAST ELEMENTS



## Ferrules

Danterr supplied Ferrules provide a metric thread fixing point in precast concrete panels and are used for the attachment of permanent structural fixtures and the attachment of temporary braces and strongbacks.



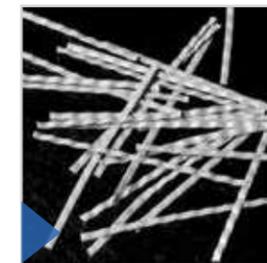
## Curing Blanket

Concrete Curing Blankets effectively trap water, providing improved hydration, less discoloration and a more evenly cured concrete slab.



## Slab on Ground Plastic Chairs

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## Macro-Synthetic Fibres

Macro-Synthetic Fibres are 50mm long fibres that are sold by the kilogram with a dosage on average of between 5kg and 9kg per cubic metre of concrete. Macro-Synthetic Fibres are non-corrosive and can be considered as an alternative to both steel and fabric fibres.



## Curing Compound

Danterr supplies the following variances of Concrete Curing Compound - Aliphatic Alcohol Evaporation Retardant, Bituminous, Water Based XDS, Water Based Acrylic and Wax Based. Curing concrete results in the full development regarding strength of concrete.



## Concrete Spacers

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## Lanotec Form Oil

A ready to use concrete release agent for formwork, precast and tilt panel applications.



## Tie Wire Coils

Tie Wire Coils come in a standard diameter of 1.57mm which is the industry standard required to cover various civil concreting applications. Wire comes in a galvanized or stainless finish as to resist corrosion. Black wire coils are also available. Coils are convenient enough to carry yet contain enough wire for a huge number of ties.

# TUNNEL

## PILING / CAPPING BEAM



### Pecafile®

Pecafile® is a flexible and versatile sacrificial formwork material perfect for concrete encasing service pipes. Pecafile® is also suitable for ground beams, footings and bases, pile caps, construction joints (stop ends), special shapes or curves, void formation, ribbed and waffle slabs, penetrations, recesses, temporary fencing and safety screens.



### Pile Cage Wheels

Pile Cage Wheels provide correct concrete cover to pile cage reinforcement bars. They are particularly suited to Raked Pile applications. Pile Cage Wheels can be attached as the pile cage is lowered into the ground. Their performance is maximised by their push fit and security clip fixing mechanisms.



### Formply

Formply is made with a radiata pine core with a harder density surface. Both hardwood surfaces are faced with a high-density resin finish, that is usually black in colour and very smooth. Formply is ideally suited for use in concrete formwork and can be reused multiple times.



### Pile Cage Feet

Pile Cage Feet ensure correct concrete cover at the bottom of a reinforcing pile cage is achieved. The 3 sizes provide 85mm, 100mm or 150mm of cover and are engineered to support up to 500kg of centre weight per unit.



### Formatubes

Formatube is a cardboard tube used to pour concrete columns, both above and below ground. Formatube too can be used in-ground to prevent soil collapsing. Formatube is easy to use which is intended to stand upright when used as formwork for in-ground or above ground columns. The outer layer is impregnated with plastic coating thus allowing water resistance. The inside is coated with an oil lining to prevent the concrete sticking to the tube.



### Debonding Tubes

Debonding Tubing is flexible polymer plastic tubing used to prevent concrete from adhering to the prestressing strands.



### Dowels

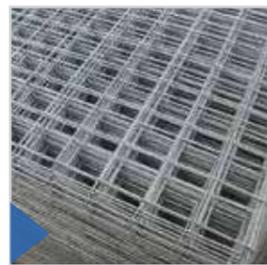
Danterr provide round, square or diamond dowels in galvanized, stainless or black structural grade friction cut. Danterr are an industry leader in the sourcing and delivery of high-quality dowels in all cuts, shapes, diameters and finishes.



### Bitumen Impregnated Fibreboard

Bitumen Impregnated Fibreboard is an expansion joint filler supplied in sheet form and is used to form and fill expansion joints in in-situ and pre-cast concrete construction. Ideal for concrete pavements, roads, runways, ramps, foot paths and other high pedestrian areas.

# TUNNEL SHOTCRETE



## Galvanized Mesh

Galvanized steel mesh sheets can be supplied in various sizes. The steel is hot-dipped galvanised ensuring the steel grid has a long, corrosion resistant performance.



## Green Fibres

**Danterr** are the Australian distributor of Green Fibres – fibres that won't clog shotcrete pumps and are perfect for plastic shrinkage. These fibres stack up very well against Polypropylene fibres in terms of tensile strength, compressive strength and flexural strength. Green Fibres also encourage crack reduction and produce a superior finished surface.



## Tie Wire Coils

Tie Wire Coils come in a standard diameter of 1.57mm which is the industry standard required to cover various civil concreting applications. Wire comes in a galvanized or stainless finish as to resist corrosion. Black wire coils are also available. Coils are convenient enough to carry yet contain enough wire for a huge number of ties.



## Strip Drain

Strip Drain is an effective subsurface drainage for the removal of excess water from the aggregate layers within road and rail formations, from behind retaining walls or in sports fields. Strip Drain has twice the inflow capacity and drains water 60% faster than 100 mm slotted round pipe.



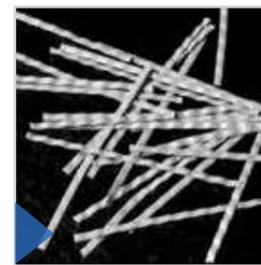
## Fiberglass Reinforcement

Fiberglass rebar has a large decisive load and due to its contour, it offers a maximum bondage with the concrete. But perhaps the biggest benefit of fiberglass reo is its high corrosion resistance. Concrete does absorb water, and therefore steel reo can corrode. Fiberglass reo will never corrode and will last for approx. 200 years in any concrete slab.



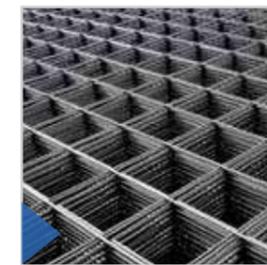
## Concrete Spacers

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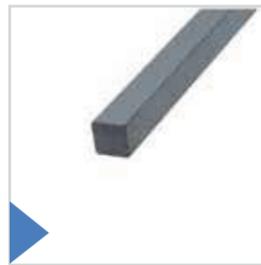
# TUNNEL

## DIVE STRUCTURE SLAB



### Nevosafe™

Nevosafe™ has been developed for the use all building sites where exposed rebar is present. It is clipped on to the protruding ends of reinforcement bars as a transition to further layers of concrete. These are essential to preventing a falling worker from being impaled on an exposed beam.



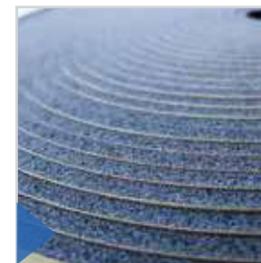
### Concrete Rail Spacer – Square or Triangle

Concrete Rail Spacers are used to ensure that specified concrete cover to the reinforcement is achieved. They come in a range of profiles; square, round, square with groove, triangle and custom-made spacers are available.



### Joint Sealant

Danterr Joint Sealants are one-component, moisture-curing, low modulus, Class A, polyurethane sealants, with excellent joint movement capabilities. They cure into a flexible, durable and weather resistant sealant and exhibits excellent adhesion to a wide range of substrates.



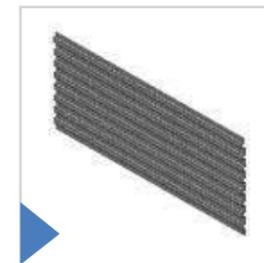
### FutureFlex™

FutureFlex™ is Danterr's unique Expansion Foam that is a crossed linked, non-absorbent, closed cell, polyethylene expansion joint filler. FutureFlex™ is non-absorbent with excellent properties allowing it to be used in water retaining / excluding structures where chemicals and variances of water such as potable, salt, chlorine and sewerage water is abundant.



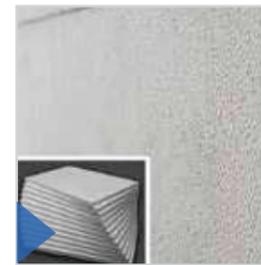
### Slab on Ground Plastic Chairs

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### Stremaform® Flat

Stremaform® flat is used for medium-sized structural components, installed between the upper and lower reinforcement layers. Stremaform® in the concrete gives a rough surface that satisfies the requirements of an indented joint according to DIN 1045-1 and / or Eurocode 2 and does not need scabbling. Stremaboard, Stremaform® For self-compacting concrete (SCC) and Stremaform® Strong also available.



### Polystyrene

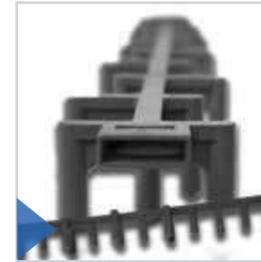
Polystyrene is light, easy to handle, durable, strong, flexible, and recyclable, making it ideal void former for use across a range of industries / applications.



### Backing Rod

Backing Rod is a compressible, closed cell polyolefin foam tube with an outer skin. It is used as a backing for cold applied sealants in expansion / construction joints and building seal applications.

# TUNNEL FITOUT



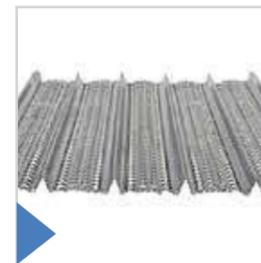
## Deck Rail Spacers

Deck Rail Spacers are a continuous spacer for formwork applications. The male and female connections at either end will join rail on rail to 750mm segments. Once connected the clip will not separate. Clipping bar chairs onto the reinforcement after the reinforcement has been placed is now eliminated.



## Plastic Shims

When packed under precast concrete panels or tilt-up panels, shims effectively level the high load objects and achieve alignment. **Danterr** Shims have undergone extensive testing to ensure they meet Australian standards. Ribbed patterning on each shim helps to prevent slippage during on-site panel alignment operations.



## Hy-Rib®

Hy-Rib® Sacrificial Expanded Metal Formwork allows concrete slurry to flow through the keyjoint, ensuring aggregate interlock. Hy-Rib® is primarily used in construction joint applications but is also usable in wall, beam, column and soffit slab constructions, where the formed surface will not be seen.



## GP Grout

GP Grout is a general-purpose grout suitable for most concrete applications. It is generally considered an essential in the concrete and construction sectors. **Danterr** supplied GP Grout complies with Australian Standard 3972 – General purpose cement.



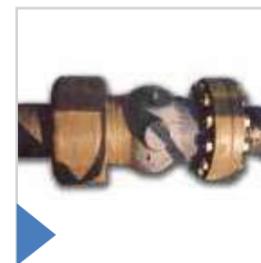
## Hydrotite

Hydrotite is a hydrophilic waterstop with unmatched expansion and water sealing capacity. As Hydrotite expands it absorbs water and fills up concrete joint gaps conforming to the void variation. Hydrophilic material expands in a controlled fashion by approximately eight times by volume in the presence of moisture to create a pressure seal within the joint.



## Screw Bolts

Screw Bolts are screw-type anchors used in solid concrete applications. As the bolt is screwed in, it creates its own undercut by tapping the concrete hole using specialised thread indentations. In addition, serration on the underside of the flange head gives superior grip to the anchor point.



## Denso Tape

Denso Tape is composed of a non-woven synthetic fabric carrier, fully impregnated with a neutral compound based on saturated petrolatum and inert siliceous fillers. Designed to withstand extreme temperature variations, Denso Tape provides corrosion protection to pipes, flanges, valves and related surfaces.



## Mungo® Pure Epoxy

Mungo® Pure Epoxy is two component, moisture-insensitive, 100% solids, high modulus epoxy gel adhesive ideal for anchoring bolts, dowels, and reinforcing steel in concrete. It is also ideal for vertical and horizontal structural bonding and patching. Mungo® Pure Epoxy may also be used to seal cracks and set injection ports prior to injection grouting.

# TUNNEL

## FEATURE PRODUCT

# NEVOSAFE™

NEVOSAFE™ REBAR SAFETY STRIP



The NEVOSAFE™ safety strip provides peace-of-mind for all those working around exposed concrete rebar.

The unique rebar capping system complete with steel reinforcement, has landed at **Danterr**. In the past, someone at a site would have to individually cap each exposed rebar.

Yes, the steel capped individual protection points are still available, and are still relevant for certain jobs. But now employers can protect their employees in a much more efficient and effective fashion.



### SPECIFICATIONS:

Item No.	For iron Ø mm	Length m	Pcs/Bundle	Pcs/Pallet
104094	8-40	1	6	252

### BENEFITS:

- › Reusable
- › Highly visible colour
- › Easy and quick to use
- › Weather resistant plastic
- › Secure and robust - 100kg from a height of 3m
- › Secure and stable on all reinforcement diameters
- › Can be applied in horizontal and vertical positions



### STATEMENT OF THE EMPA TEST CERTIFICATE 460' 353/2 FROM 9TH MAY 2012

The NEVOSAFE™ safety strip has been developed for the use on building sites. It is clipped on to the protruding ends of reinforcement bars as a transition to further layers of concrete. These are essential to preventing a falling worker from being impaled on an exposed beam.

The objective of the investigation was to test the effectiveness of the safety strip. The strips were mounted on vertical reinforcement bars with diameters of 8, 10, 12, 14 and 16mm and at the spacing commonly used in actual practise.

A 100kg sandbag was then dropped centrally from a height of 3m to simulate a falling worker. In all tests, the sandbag was protected from being impaled. As a result, those strips successfully passed the assurance tests and were ready to be used on any construction site.



Above: NEVOSAFE™ safety strip



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