

# Job Reference

## New Flemington Racecourse Horse Tunnel 'On Track' with a Waterproof Finish



## Quality Waterproofing Solutions

**Project:**

Flemington Racecourse  
Horse Tunnel

**Client:**

Victoria Racing Club (VRC)

**Contractor:**

Austress Freyssinet Pty Ltd

**Location:**

Flemington, Victoria

**Completed:**

2007

**Products:**

Coniroof® 2113  
Waterproofing Membrane  
System  
Masterflex® 900 FUKO  
Injection System

 **BASF**

The Chemical Company

## Project Background

Part of a massive \$13 million redevelopment of the racecourse's famous 'Birdcage' area, the new Horse Tunnel at Melbourne's Flemington Racecourse has been designed to improve safety at the track by diverting horses away from crowds as they make their way from the stalls to the mounting yard before each race.

Stretching some 193 metres from the stables through to the mounting yard, the project incorporates 80 metres of 'cut and cover' tunnel with internal dimensions of 3.5m x 3.6m.

Ensuring that the tunnel was totally waterproof was of paramount importance. Austress Freyssinet worked with the Victoria Racing Club (VRC), architects the Buchan Group, engineers Grogan Richards, and the builder Construction Engineering, to develop a design concept and specification for the tunnel waterproofing.



## The Challenge

The Flemington Horse Tunnel presented a number of significant design, engineering and construction challenges, including its location in relation to the Maribyrnong River (which is immediately adjacent to the track), the prevailing geology, and an extremely tight construction time-frame.

The fact that tunnel has been constructed below the water table in Coode Island Silt, means that the performance of the waterproofing methods and materials used are critical factors in the success of the project. The VRC wanted to be sure that the finished tunnel was totally waterproof and didn't leak, and what's more, that it would remain that way for the long-term.

## The Solution

After making a detailed assessment of the project requirements, Austress Freyssinet recommended using a range of waterproofing solutions from BASF Construction Chemicals, including the Masterflex® 900 reinjectable hose system and the Coniroof® 2113 waterproofing membrane system.

Following the excavation works and the establishment of a 'blinding slab', Bentonite matting was laid down prior to the tunnel's floor slab being poured. This was then followed by the construction of the poured-in-situ walls and roof sections. For maximum waterproofing effectiveness, all joints - both along and between the floor, wall and roof sections - were fitted with the Masterflex® 900 FUKO Injection System reinjectable hose system from BASF Construction Chemicals.

Specifically designed for 'jointed' concrete structures which are subjected to hydrostatic pressure on one or both faces of the structure, Masterflex® 900 hose is installed along the joints and then injected with an appropriate injection material - causing it to swell and seal any voids along the joint. Importantly, Masterflex® 900 is able to be injected at any time, thereby allowing it to cater for slight movement and/or expansion of joints which can occur over time. For the Flemington Horse Tunnel project, the Masterflex® 900 hose has been installed as a 'secondary' waterproofing solution, which can be injected with Masterflex® 801 - a highly flexible methacrylate crack injection resin - if need be.

The second stage of the tunnel waterproofing process incorporated an application of Coniroof® 2113 to the external surfaces of the tunnel roof and walls. A member of the state-of-the-art Conipur® family of waterproofing membrane systems, Coniroof® 2113 is a waterproof membrane system comprising a primer coat followed by a layer of Conipur M810, a highly elastic polyurethane resin-based crack-bridging membrane. Suitable for use on vertical and horizontal concrete substrates (including inverted roofs), the Coniroof® 2113 system delivers the ideal combination of outstanding long-term durability, high elasticity and extremely fast curing time.

## The Result

The combination of the Masterflex® 900 and the Coniroof® 2113 system has provided the ideal waterproofing solution for the Flemington Horse Tunnel.

"We're very happy with the result," Gemma Nolan, Business Development Manager with Austress Freyssinet Pty Ltd, explained.

"The versatility and flexibility of the Masterflex® 900 reinjectable hose, together with the toughness and flexibility of the Coniroof® 2113 membrane system, have combined to deliver a highly-effective long-term total waterproofing solution," she added.

