
# NEW ZEALAND THOROUGHBRED RACING

## SYNTHETIC SURFACE REVIEW 2021-2024

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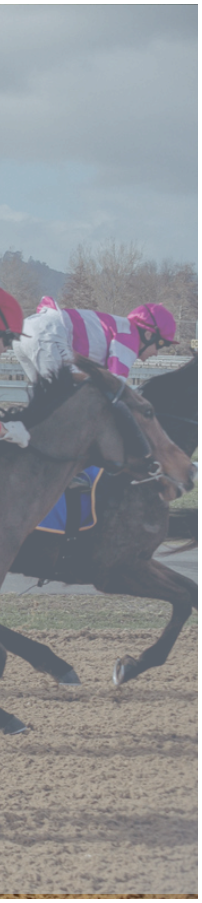
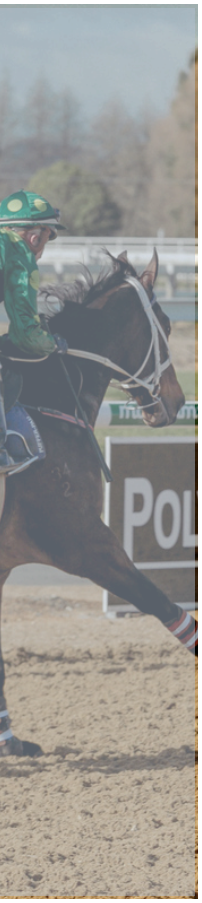
PUREI HŌIHO NĀTI O AOTEAROA



# OBJECTIVE OF THE SYNTHETIC SURFACE REVIEW

As we near the end of the 2023/ 2024 Synthetic Track season, and with the original track at Cambridge now having raced since May 2021, it is timely to update the industry on the performance of the respective tracks. This document includes injury and fatality statistics as provided by Massey University, and provides more information into the make up of all three tracks and the necessary maintenance to consistently deliver the highest quality surface.

The synthetic tracks play an important role in the winter ecosystem of NZ Racing. They allow our turf tracks time to recover when they are at their wettest, therefore playing an important part in the continued improvement of our summer surfaces. They also provide for a wider pool of horses to stay in work through the winter period, allowing for more racing with which to grow the wagering market for Entain. We will continue to refine the programming for racemeetings on the synthetic tracks to ensure field size and opportunities for all. They have already proved their worth through the extremely wet winters we have experienced over the past couple of seasons, and will continue to provide another option for trainers and owners moving forward.

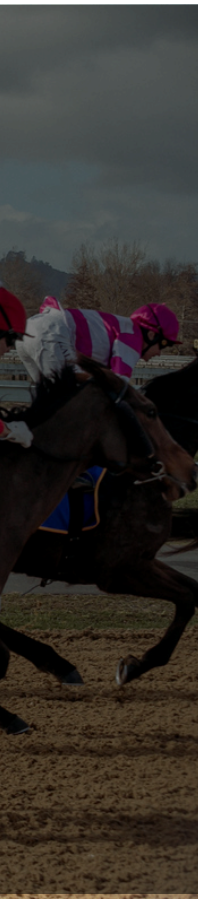


# WAGERING TURNOVER

The comparison table below shows the turnover on synthetic vs. grass track meetings held over the last three seasons for industry winter meetings. Winter has been defined for this purpose as May through to September (inclusive), which is the period when racing on the synthetic tracks has generally been programmed.

You can see that NZ turnover per start is very similar between track types and the only difference between the types of venues is the field limits that are smaller at the two North Island synthetic tracks. Australian turnover per start is positive on the synthetic tracks, perhaps an indication of a preference for betting on more consistent track conditions.

| | | | | | New Zealand Turnover | | | Australian Racefields | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Track Condition | Meetings | Races | Starts | Avg. Field Size | Per Meeting | Per Race | Per Start | Per Meeting | Per Race | Per Start |
| Good | 7 | 68 | 716 | 10.53 | $1,081,050 | $111,280 | $10,570 | $2,241,080 | $230,700 | $21,910 |
| Soft | 22 | 177 | 1,858 | 10.50 | $879,010 | $109,260 | $10,410 | $1,793,530 | $222,920 | $21,240 |
| Heavy | 79 | 622 | 6,334 | 10.18 | $861,960 | $109,480 | $10,750 | $1,649,450 | $209,500 | $20,570 |
| Synthetic | 70 | 548 | 5,181 | 9.45 | $755,030 | $96,450 | $10,200 | $1,685,710 | $215,330 | $22,780 |
| **Total** | **178** | **1,415** | **14,089** | **9.96** | **$830,630** | **$104,490** | **$10,490** | **$1,704,780** | **$214,450** | **$21,540** |



# INJURY AND FATALITY STATISTICS

NZTR has a strong focus on animal welfare and thoroughly reviews all fatalities through the Equine Mortality Review Panel, which is comprised of representatives of NZTR and the RIB, veterinarians and retired trainers. All aspects of the incident are reviewed including (when available) necropsy results, veterinary records, track type and track condition, racing career and current preparation details, sales history, training regime and any other comments from the trainer or rider which may prove valuable. Through the Panel, NZTR is looking to identify trends or data that can assist us in reducing all racetrack fatalities across all surfaces.

In view of the industry's significant investment in the three synthetic tracks at Cambridge, Awapuni and Riccarton, New Zealand Thoroughbred Racing has monitored the performance of the tracks from an animal welfare perspective. As of the end of the 2023/24 racing season, we have now had sufficient starters on synthetics tracks to be able to compare the relative race day fracture rate between turf and synthetic tracks. In looking at this data, however, we must also be mindful of the relative low sample size for the three Synthetic Tracks, which can easily distort the statistics.

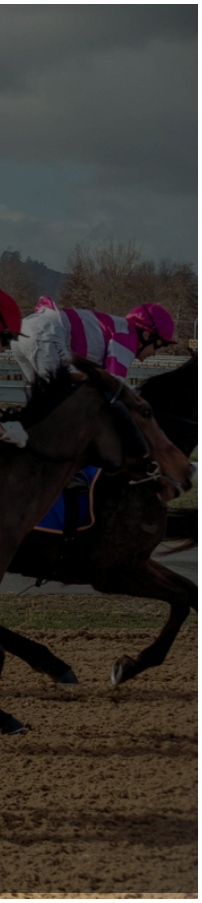

**INJURY AND FATALITY STATISTICS 2021-24 (MASSEY UNIVERSITY)**

| Track Condition | Starters | MS Injuries | MS Injury Rate (1000) | MS Fatal | MS Fatality Rate (1000) | Avg. Track Rating | Pene Mean | v600 Mean m/ps |
|---|---|---|---|---|---|---|---|---|
| Synthetic | 6,210 | 20 | 3.22 | 5 | 0.81 | | | 17 |
| Firm | 196 | 1 | 5.1 | 1 | 5.1 | 2 | | 16.9 |
| Good | 23,786 | 61 | 2.56 | 12 | 0.5 | 3.76 | 2.69 | 16.8 |
| Soft | 24,317 | 58 | 2.39 | 9 | 0.37 | 5.82 | 3.23 | 16.4 |
| Heavy | 20,067 | 31 | 1.54 | 3 | 0.15 | 9.34 | 4.78 | 15.2 |

**KEY**
**MS**- Musculoskeletal
**TC**- Track Rating
**Pene** - Penetrometer
**v600 Mean** - Last 600m speed metres/second

The preliminary data based on the official race day records potentially underestimates race day events, but still indicates a higher injury rate on synthetic than turf tracks (3.22 [1.97-4.97] vs 2.21 [1.88 – 2.59] respectively). This data demonstrates that race day Stipendiary Stewards Reports are a relatively blunt tool to differentiate risk between different surfaces.

Overall, the rate of fracture on synthetic tracks appears higher compared to turf tracks (0.81 [0.26-1.88] vs. 0.37 [0.24-0.54]). (Massey University)



The synthetic track with the greatest data set is Cambridge, which is operating at around the same rate as a Turf Venue, at 0.52 per 1000 starters. When we compare this rate internationally, it is still relatively low with the USA synthetic track fatalities reported at 0.97 per 1000 starters and the United Kingdom synthetic fatalities reported at 0.90 per 1000 starters.*

## WHAT MAKES UP OUR SYNTHETIC TRACKS?

NZTR is aware that there is some confusion within the industry regarding the design and profile of the synthetic tracks and, in particular, the depth and structure synthetic material layer of the tracks.

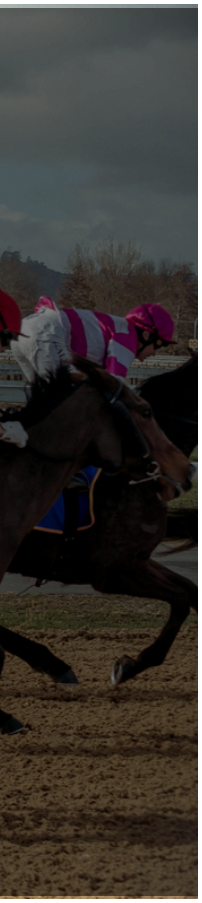
The synthetic profile (or layer) and drainage profile (or layer) for each synthetic track were built in accordance with Martin Collins' specifications and design. As part of the completion of each project, an independent engineer was required to certify that the synthetic profile and drainage profile had been built in accordance with Martin Collins' specifications and design. The synthetic profile and depth at each synthetic track are, therefore, identical other than the type of sand used in construction which was, in each case, chosen by Martin Collins to meet their specifications.

The constituent parts of the principally sand-based synthetic profile are bound together by wax, which adds cushioning and is water repellent. Accordingly, rain readily moves through the synthetic profile and into the drainage system.

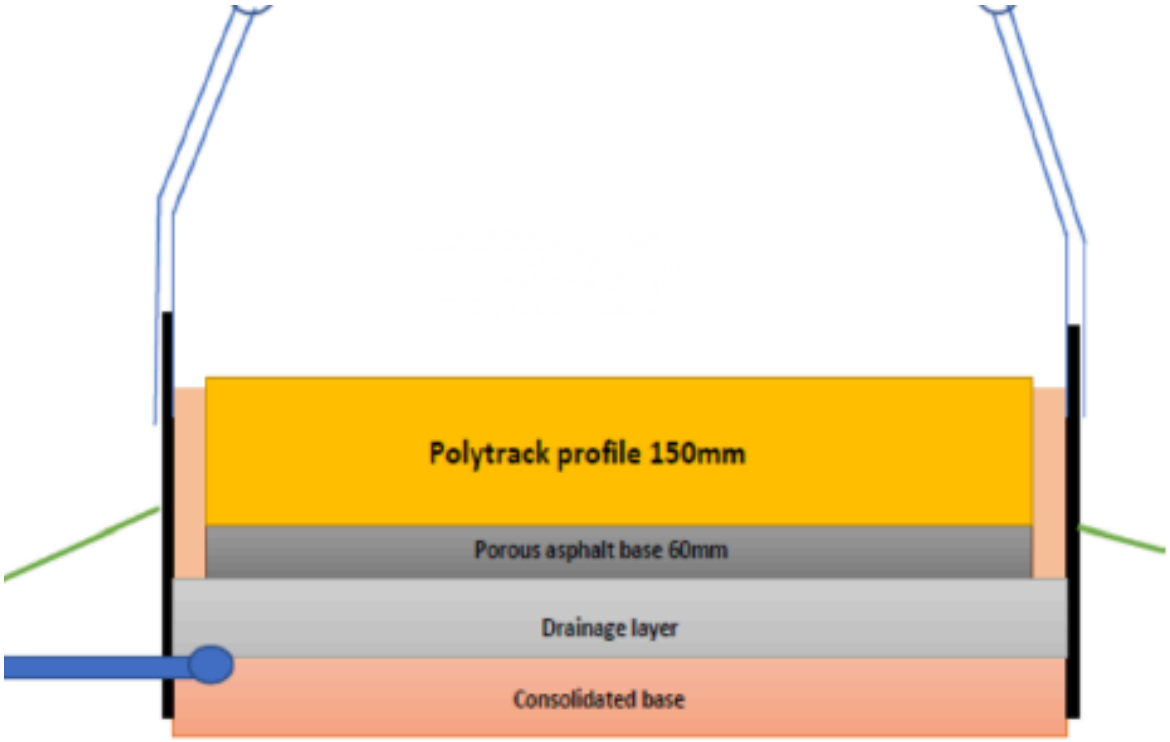
In principle, the Polytrack profile at each synthetic track should be thought of as having three layers with different levels of firmness. The lowest layer is, in effect, a "pad" that sits immediately above the porous asphalt shown in the diagram below. The middle layer provides a shock absorbent "cushion" and then there is a loose layer, which is generally around 50mm (or two inches) deep, above the "cushion" layer. The looser the cushion layer is made when grooming the track, the deeper or slower the track will be, and the opposite applies if the cushion is tighter or more consolidated.

As shown in the diagram on page 5, the synthetic profile or layer at each synthetic track is 150mm (or around 6 inches) deep but its depth increases to around 170mm to 180mm once it is "fluffed up" or loosened for racing or training.

**Rosanowski, S. M., Chang, Y. M., Stirk, A. J., & Verheyen, K. L. P. Risk factors for race-day fatality in flat racing Thoroughbreds in Great Britain (2000 to 2013). PloS one 13, 3 (2018)*



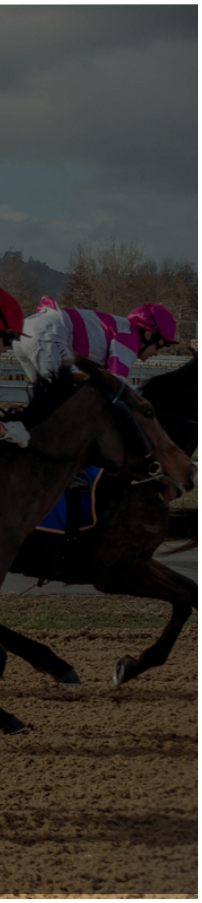
## TRACK PROFILE




# TRACK MAINTENANCE

Maintenance of each synthetic track is carried out by the relevant club in accordance with a maintenance contract with Martin Collins and the maintenance schedule instructions provided by Martin Collins. If a club wishes to carry out maintenance outside of Martin Collins' instructions, it needs to obtain the consent of Martin Collins before doing so. Martin Collins is required (amongst other things) to carry out inspections of each track, and to relevel and deep harrow each track, at quarterly intervals. Accordingly, each synthetic track ought to be prepared and presented for training and racing in substantially the same condition. That said, some differences have been made to the grooming regime at the tracks for training purposes to reflect the preference of local users e.g. providing a deeper soft layer of the synthetic track for training.

NZTR readily acknowledges that with each track there has been a bit of a "bedding in" process as the club and track users better understand their preference for the synthetic tracks and how they work best in the different climates, with the tracks being susceptible to variations in temperature. In each case, any changes to the maintenance or grooming regime for racing and/or training need must be approved by Martin Collins to ensure that track performance and quality is not compromised.



# TRACK PERFORMANCE AND PREPARATION

NZTR is committed to providing the best possible training and racing surfaces for the industry. All industry concerns with tracks and their preparation are taken seriously. We constantly review the way we operate when it comes to the preparation of tracks, including the three synthetic tracks, and are always looking at how the industry can improve in this area. In relation to the synthetic tracks, this includes working closely with Martin Collins and importantly utilising the experience gained by Cambridge over the past 4 years in managing the surface there. The lessons learned at Cambridge are conveyed to the other venues to assist with their track preparation techniques. We will continue to monitor data to ensure our venues remain among the safest in the world.

We are also improving the transparency and communication of information about the synthetic tracks by moving to publish the Clegg hammer readings prior to raceday for all synthetic track meetings. Clegg hammer record the level of compaction of the synthetic profile. The publication of these readings will give comfort that the tracks are where they need to be and avoid speculation and misinformation filling the void.

As noted above, the synthetic tracks are susceptible to variations in temperature and can become tighter with extremely cold weather. They do, therefore, require constant attention (just as turf tracks do) to ensure they remain in the best condition for racing and training, and are not (and have never been considered to be) a low maintenance solution, with their preparation depending on the proposed use (e.g. racing or training) and weather conditions. Accordingly, NZTR subsidises the extra cost of the maintenance of the synthetic tracks to ensure Clubs can maintain them to the level that is required.