

HAMER ST SFRC SLAB AUCKLAND

WIRAND FIBRE FLOORING APPLICATION

Products: Wirand Steel Fibre - FF1

Problem

Firth Industries needed exterior floor slabs for their new concrete batching plant at Hamer St in Central Auckland that would be economical to build and be highly durable under concentrated loading from heavy vehicles. The location of the new batching plant was some 3-4 lots down the road from the existing plant.

A SFRC (Steel Fibre Reinforced Concrete) slab area of approximately 4,300m² was required. The slab would be located over a subgrade having a design CBR strength of 6%. The flooring slab had to be designed to accommodate a maximum axle load of 8 tonne for a total of 48,000 vehicle movements per year.

Solution

Wirand FF1 Steel Fibre was chosen for the project due to a good balance between fibre performance and ease of fibre dispersment and dosage. A minimum fibre dosage of 20kg/m³ of Wirand FF1 for a 150mm thick slab was proposed by Maccaferri using PAVE software, developed by Officine Maccaferri for concrete floor applications. The structural analysis and calculations of the SFRC slab was based on the codes of EN 206, Eurocode 2 and on the technical recommendation from TR34/3, 3rd Edition.

The first slab pouring took approximately 2 hours to complete. 7 workers were involved with the slab pouring, which covered an area > 280m² (18.4m x 15.4m). The Maccaferri portable conveyer belt system was used to feed the steel fibre directly into the concrete truck, significantly reducing time and efforts of adding the fibre into the concrete trucks and ensuring an even dispersion of fibres through the concrete mix.

The SFRC slab was saw cut with an early entry cut (soft cut) on the same day they poured. The depth of the saw cut was < 50mm at a maximum of 6m c/c.

Client:

FIRTH INDUSTRIES

Main Contractor:

FLETCHER CONSTRUCTION

Products used:

WIRAND STEEL FIBRES - FF1

Construction date:

SEPTEMBER 2009



Maccaferri Portable Conveyer Belt System



Pouring of concrete



Completed SFRC Floor Slab

Maccaferri NZ Ltd.

14 Goodman Place, P.O. BOX 12536, Penrose, Auckland, New Zealand
Tel. (+64) 9 6346495 - Fax (+64) 9 6346492, FREEPHONE 0800 60 60 20
E-mail: sales@maccaferri.co.nz - Web site: www.maccaferri.co.nz
Quality System AS/NZS ISO 9001:2000

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