Lower Carbon Higher Performance

LCHP
CONCRETE

Typical applications:

- Civil works
- Commercial
- Infrastructure
- Industrial slabs
- Marine environment
- Post tensioned slabs

Concrite is committed to a lower carbon future. Concrite aims to achieve this by reducing the embodied carbon in the production process of the concrete and raw materials and by offering Lower Carbon Concrete (LCC) products to our clients. Concrite has three LCC product ranges, LC, LCP and LCHP which will cover all concrete applications from residential foot paths to high rise commercial towers.

Most of the embodied carbon in concrete is from the portland cement. To reduce the embodied carbon, some of the portland cement is replaced with supplementary cementitious materials (SCM) such as fly ash and granulated slag. All three LCC products have low portland cement contents and high SCM contents but LC Plus and LCHP have been designed to also have superior engineering properties.

LC, LCP and LCHP contain reclaimed water and manufactured sand which when combined with their low portland cement content will help projects achieve a Green Star* or ISCA rating**.

This data sheet relates to LCHP but data sheets on LC and LCP are also available.

LCHP is a sustainable concrete compliant with AS 1379 (Specification and supply of concrete) with following benefits.

Lower Carbon

- LCHP has a low portland cement content and is suitable for projects seeking to maximise the number of green star points from concrete.
- LCHP has a lower carbon content and is suitable for projects seeking registration with the Green Building Council of Australia or the Infrastructure Sustainability Council of Australia (ISCA).

Superior Engineering properties

- LCHP will achieve good early-age and is suitable for all post tensioned applications.
- LCHP has 20 percent greater flexural strength compared to conventional concrete of the same grade.
- LCHP achieves up to 50 percent reduction in shrinkage when compared to conventional sustainable concrete mixes. The low shrinkage of LCHP will allow for more engineering options such as the design of larger slabs with fewer joints.

Architectural Presence

- LCHP can achieve a range of architectural benefits because of its off-form finish and lighter colour.
- LCHP's lighter colour will enhance the use of colour oxides.

Superior Durability

- LCHP provides improved durability, through greater protection to steel reinforcement against chloride induced corrosion.
- LCHP has improved sulphate and acid resistance properties.
- LCHP mitigates the potential expansion due to alkali aggregate reactivity.

Properties

- AS 1379 compliance – Fully compliant
- Minimum portland cement reduction (cf GBCA reference case) - 50%
- Early age strength – Suitable for post tensioned applications (22 MPa at 3, 4 & 5 day, 25 MPa at 3, 4 & 5 day)
- Drying shrinkage @ 56 days – Nominal 400 microstrain (40 MPa/20mm).

*Green Building Council of Australia
**Infrastructure Council of Australia