



HYDRO™ HC-RCO2

Our prime Hydraulic binder **HC-RCO2** is designed to provide exceptional early strength performance to be used in concrete mixes. **HC- RCO2** is a multi-purpose combination hydraulic binder which can offer market leading performance where desired. We achieved a good 15% CO2 reduction compared to the normal GP CO2 emission and approx.. 50% CO2 reduction compared to CAC.

HC- RCO2 can be used in a range of applications including mining and construction. From grout to self-leveling applications from shotcrete to super strong concrete, HC Binders are unbeaten in their performance.

Our high performance, low environmental impact binders have a reduced carbon footprint compared to western carbon cement manufacture by up to 85%.

We also will have taken the cancer thread further away from a cement product saving lives by eliminating the Chromium VI content!

As a pure binder, minimum strength in 28 days 100 MPa it will surprise you how high it will go how fast it can get there! All this without any extra additives that are costly or environmentally questionable and unacceptable!

Working time around 30 minutes @ 23°C. Modified set times are available but require laboratory assistance based on mix designs. Final set 1 hour. Up to 4 hours delay can be achieved.

Technical Advantages:

The HC combination of binders keep the heat around 40°C.; given the unknown dosing rate of clients, a precise combined heat range can not be given, but in general it will be a be proportional to the reduction/replacement in OPC in the mixes. A reduction in hydration temperature is another environmental / product advantage unmatched by other alternatives.

As a binder in it's own right, it doesn't crack, it lends itself to positive expansion.

HC-RCO2 is also sulphate resistant, and considered impervious to water.

HC-RCO2 binder provides an eco-friendly application, and unmatched performance results.



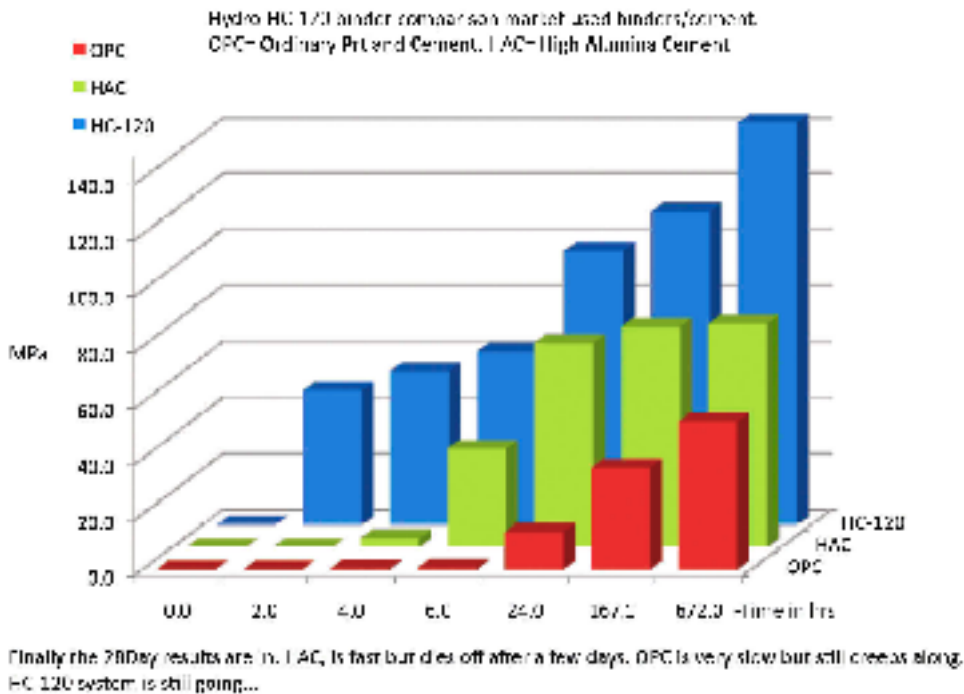
HC-binders also reduce environmental impact further, due to a reduced water powder ratio. The need for additives is no longer required since **HC- RCO2** will not need any additional additives simply add portable Water!

W:P ratio is around 0.20-0.28 : 1. Because the binder addition develops a very low heat during curing, watering down not necessary, thus reducing further water, time, and recourse.

As a result of the low water consumption and low heat curing, the final product if used correctly and fit for purpose, will out-perform cementitious products in the market.

HC- RCO2 can develop a very high compressive strength of 120MPa after 28days and beyond. As a singular product, strength gains of 50MPa at 2 hours, 70MPa at 6 hours, over 80MPa at 12 hours and 100MPa in 7 days.

HC- RCO2 our regular early strength binder comparison:



Corrosion and steel protection provided by a reduction in alkalinity will adds to the list of (environmental) benefits. The binder has lower pH, measured at around 10 on the Litmus scale.

Perfectly suited for time restrained workloads such as road works, airport runways, formwork or castings and emergency work.

Application in the field:

- Fast set concrete / shotcrete
- Concrete repair
- Pre-cast addition
- Non-shrink grouting
- Underlay
- Casting
- Anchoring
- Base plates
- Rapid construction
- Basement / car park



- Roadways
- Airport runways
- Marine

Features and Benefits:

- Self-leveling
- Rapid early strength
- Controlled late strength
- Low CO₂ (compared to OPC and CAC)
- Lower pH (compared to OPC and CAC)
- Extreme controlled performance
- Can be slowed to improve workability

If a company making blocks for building used Portland cement to bind their products, the sequence would be clean moulds, cast blocks, leave to next day to demould, place in storage to cure and clean and recast the moulds. In this scenario the block maker can make as many blocks as he has moulds each day. If the **HC- RCO2** were substituted he would clean moulds, cast blocks, leave for two hours to demould and ship the recently cast blocks. He would then be able to re-clean moulds, cast a second batch of blocks, leave for two hours to demould and ship these too. In this scenario the block maker can make two or three times as many blocks as he has moulds each day, thus increasing efficiency and profits.

Further, as the blocks are constructed of a material which is unaffected by drying conditions, even tropical conditions and strong sun light will not damage the hydration process. Maximum performance can be attained at a consistent level.

Additionally, the **HC- RCO2** binder system is impervious to both marine and sulphates which are abundant in volcanic derived soils.

Available in 1hr, 2hr and 4 hr delay versions

Available Packaging for all HC-binders

20kg, 1000 kg, 1200 kg

Compressive Strength for HC-120 @ AS1012.9

3hr- 30MPa- 6hr-40MPa- 12hr - 50MPa- 1day-60MPa- 7 days 80MPa- 28days- 100MPa minimum

Shrinkage AS1478.2 = 186 micronstrain@56 days, 218 micronstrain@402 days

Yield = Each 20 kg bag mixed with 5 liters of water yields 0.012m³ volume.

Water powder ratio of 0.20-0.28:1 by weight of binder do not exceed 0.31 W:P as this W:P may negatively affect the overall product performance!

Wet Density @ W:P 0.25, it is 2080kg/m³

Yield/Addition Rate: each 20kg bag mixed with 5 liters of water yields 0.012m³ volume.

If kept in its original packaging in a dry environment, shelf life of at least 6 months is to be expected. This time may be reduced if the product is subject to elevated temperatures or humidity. Bulk bags are expected to remain covered in plastic until use.



Further information please contact us through mailbox:fluxdesignaustralia.

Notice to reader

While the Information provided in this TDS is believed to provide a useful summary of the hazards of this product as it is commonly used, the safety data sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with this product to produce cementitious products or similar. Users should review other relevant material safety data sheets before working with this product or its mixed state.

Health & Safety:

- Avoid contact with skin and eyes. Wear suitable protective clothing.
- Avoid inhalation or ingestion.
- In case of contact with skin or eyes, rinse immediately.
- Seek medical attention immediately if ingested.

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