

Carmel Resins Ltd.

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CBR - 264

Superplasticizer and water reducing agent for concrete

CBR-264 is the aqueous solution of a melamine based polycondensation resin specially developed for the building industry.

Typical Properties

Solids content, %	40 ± 1
Appearance	Clear liquid, colorless to light yellow
Solvent	Water
pH	min. 9
Viscosity, mPa.s (cP)	min. 50
Specific gravity, g/ml	1.25
Miscibility with water	Any ratio
Storage	Protected from excessive heat
Shelf life	At least 8 months, if stored under aforementioned conditions.
Sulfate	< 2%
Chloride	Nil

CBR-264 As superplasticizer for concrete

CBR-264 should be added towards the end of the mixing process. It can also be added together with the mixing water.

If CBR-264 is added to the concrete mixture in an amount of 1% by weight of cement. an increase of slump from 75 mm to 205 mm results, meaning an increase in workability as the concrete produced has high flowability.

Important : It is recommended that the amount of CBR-264 added to the concrete should not exceed 1% by weight of cement.

Excessive additions of CBR-264, such as 2%, without relative reduction in water content may cause segregation of the concrete.

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Applications :

High Workability Concrete

As the pump pressure is reduced, subsequent pumping of the concrete is easier.

Due to much lower consistency, the material is much easier to compact and the pouring of concrete, by both manual and mechanical means, is facilitated.

Recommended dosages

All dosages are given in % by weight of cement.

For High Workability Concrete : up to 1% CBR-264

CBR-264 as water reducing agent to produce high strength concrete

By adding CBR-264 to the concrete mixture, water content can be reduced by up to 30% - without a loss of workability. This water reduction in the concrete significantly increases both final and early strengths.

By incorporating CBR-264 into the mixture, an increase in the compressive strength of the concrete by up to 41% can be obtained; as shown in the table :-

Relative increase in compression strength, %			
CBR-264 added %	Water in mixture reduced by %	After 7 days	After 28 days
0 . 5	8	16	12
1 . 0	17	42	29
2 . 0	25	-	41

High-Strength Concrete

Both early strength and long term strength are improved when CBR-264 is added to the concrete mixture and water content is reduced. Furthermore, studies performed on high strength concrete produced with this type of additive have shown that the high compressive strength yielded is preserved for years.

Bulk density is increased.

This is explained by the fact that high-strength concrete contains less water than untreated concrete.

Reducing the cement quantity in concrete

This is possible when the water quantity is reduced through the addition of CBR-264 to the mixture. As well as reducing water quantity, less cement needs to be added. However, it is imperative that the water / cement ratio is the same as in untreated cement. Despite both these reductions, overall strength is still increased and workability not impaired. According to well documented reports, considerable savings of up to 30 - 80 kg/m³ in cement usage can be achieved.

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Improvements in different concrete properties

- Durability

Durability of the concrete is increased because of its lower permeability to different corrosive agents.

- Shrinkage

Since the concrete is more compact, dimensional variations due to evaporation and consequent cracking are reduced significantly.

- Creep

As the structure of the concrete is more compact (contains less water in the paste) there is less deformation (creep) under permanent load.

Recommended dosages

All dosages are given in % by weight of cement.

For High-Strength Concrete

: CBR-264 addition to be performed with concomitant water reduction - preferably at the end of the mixing process.

% water reduction
in concrete mixture

% CBR-264

15 - 20

1 . 0

25

2 . 0

SAFETY :

According to our best knowledge, CBR-264 has no adverse effect on health, provided it is used properly. As with any chemical, CBR-264 should be handled with precaution and the usual protective measures.

Note :

The information and statements herein are believed to be reliable, but are not to be construed as a warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their particular purpose of any information on products referred to herein.

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