

Conplast X421

Integral waterproofing admixture for concrete

Uses

To waterproof concrete and cement/sand mixes such as structural and precast concrete, renderings, brickwork mortar, screeds and granolithic toppings. Ideal for swimming pools, sea walls, tunnels, basements etc.

Advantages

- **Chloride-free** - All grades of Conplast X421 and Cebex 031 are chloride-free
- **Water absorption** - All grades of Conplast X421 and Cebex 031 reduce water absorption
- **Compressive Strength** - The water reducing properties of Conplast X421 enable higher compressive strengths to be obtained in concrete at the same workability
- **Workability** - Increased plasticity, easier workability
- **Easy to use** - No special skills or extra labour required
- **Integral** - Not a membrane or surface film

Description

Conplast X421 and Cebex 031 are the name given to a range of waterproofing admixtures in liquid and powder form designed for different applications

Cebex 031 - for screeds, renderings and mortars

A red/pink liquid which contains an air entraining plasticiser and hydrophobic material that impart fattiness to the mortar, which when applied to the substrate, facilitate spreading, and reduce cracking and crazing.

Conplast X421 - for concrete

A red liquid which is added to concrete to inhibit the passage of water, and contains a non-air entraining plasticiser to assist optimum compaction.

Dosage

An overdose of Conplast X421 will result in retardation of the concrete.

Properties:

- **Specific gravity** : 1.05 at 25°C
- **Chloride content** : Nil to BS 5075
- **Compressive strength** : Two series of tests were carried out to measure compressive strengths and water absorption after 24 hours. The tests were carried out using various types of cement and aggregate,

Mix proportions:

Cement	300kg/m ³
Sand	600kg/m ³
Aggregate	1200kg/m ³
Workability	50 mm slump
Conplast X421	dosage 6 litres/m ³

The results are given in Table 1.

Specification clauses

"The concrete shall be waterproofed with Conplast X421 as supplied by the manufacturers and used strictly in accordance with their instructions."

For a more complete specification, the following paragraph can be added:

"For waterproof concrete the mix shall consist of:

Cement to BS 12 (OPC) or ES 4027 Sulphate Resisting (state type) 300kg/m³

20-5mm graded gravel aggregate to BS 882, 123kg/m³
Grade M washed sand to BS 882 665kg/m³ Conplast X421 6 litres/m³

Water added to give a slump of 50mm.

Conplast X421

The concrete shall be fully compacted by mechanical vibration and shall be cured using Concre curing membrane, wet hessian or damp sand.”

Application Instructions

Conplast X421 will not make poor quality concrete waterproof. Good concrete practice must be followed at all times. Care must be taken to ensure good grading of the aggregates, and a minimum cement content of 300kg/m³ is recommended. Adequate water bars between lifts and floor bays must be provided in accordance with BS 5337

Packaging

Cebex 031 and Conplast X421 in 25 and 210 litre containers.

Precautions

Health and safety

Conplast X421 and Cebex 031 are slightly toxic and must not be ingested. It is mildly alkaline and prolonged contact with the skin must be avoided.

Splashes to the skin should be removed with water. In the event of splashes to eyes, flush immediately with plenty of water and seek medical advice.

Should Cebex 031 or Conplast X421 be subjected to severe frost, the contents of the container must be stirred before use when temperatures rise.

Only the correct grade of Conplast X421 and Cebex 031 for the job should be used:

Cebex 031 for Renders

Conplast X421 for Concrete

Admixture	Cement Type	Aggregate Type	W/C	Density kg/m ³	Compressive Strength N/mm ²		% Water absorbed after 24 hours
					7 Days	28 Days	
None	OPC	Gravel	0.62	2335	27.5	39.0	5.0
Conplast X421	OPC	Gravel	0.57	2345	33.0	55.0	2.2
Conplast X421	SRPC	Gravel	0.55	2345	27.0	39.0	2.8
Conplast X421	OPC	Limestone	0.56	2405	37.0	55.5	2.1
Conplast X421	OPC	Quartzite	0.57	2360	35.0	51.0	2.2

These results show that Conplast X421

1. is compatible with different types of Portland cement and aggregates
2. lowers the water / cement ratio and give high compressive strengths
3. significantly reduces the amount of water absorbed.

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