



**Portland Cement Concrete Pavement– XCS®PCCP**

**Description**

Portland Cement Concrete Pavement (PCCP) using natural crushed aggregate is a low consistency wet mix which has been developed through trials, in conjunction with Contractors projects requirement, to be compliant with the ADAC/SCADIA Technical Specification for Airside Construction.

Cement Concrete Pavement (PCCP) is a mixture of all-in aggregate of maximum size 20mm or 37.5mm, cement, water and chemical admixture. PCCP is produced by introducing 430kg/m<sup>3</sup> cement. An average density of 2400kg/m<sup>3</sup> is achieved.

Using lower W/C produces a dense and cohesive concrete with the desired plasticity and strength. Strict water control is necessary for satisfactory workability to create this specialist product, which is easily placed and compacted either using Machine-laid or hand-laid.

**Technical Data**

- All-in aggregate grading complying with the ADAC/SCADIA Airside Construction Specification, Volume 3, Section 2.1
- Aggregate magnesium sulphate soundness <4%
- Aggregate percentage of Los Angeles Abrasion <30
- Ratio fine aggregate to total aggregate 38-43%
- Ratio either coarse aggregate size to total aggregate 40-60%
- Cement content 430kg/m<sup>3</sup>
- CCP class C55 (cube strength)

- 28d compressive strength >55MPa
- 28d flexural strength >5MPa
- Slump during placement 15-40mm machine laid and 25-50 for hand laid
- Cement content 6% by weight
- Optimum Moisture Content 5%
- Maximum dry density (MDD) 2.300 g/m<sup>3</sup>
- 7d average compressive strength 12MPa

**Mixing & Transportation**

CBTC is produced at an XCS batching plant which has sufficient capacity to thoroughly mix all ingredients in the required proportion to produce CTBC consistency as required. Chemical admixture meet the requirements of ASTM C494 Type G is added in such a manner it is uniformly maintaining the consistency throughout site-spreading and compaction process. When necessary an air-entraining admixture may be added during the batching process in the amount necessary to produce the required air content.



CCP is hauled by using transit-mixers with controlled water added to the mix, for suitable





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*XCS - Product Datasheet*

time-elapse until deposited in place at the job site. Finally it is compacted to the required degree of compaction.

### **Curing**

It is recommended after CCP is placed, that plastic sheet or wet burlap is used for curing and protection from rapid loss of moisture from the fresh concrete.

### **Benefits**

- CCP is prepared in the batching plant for maintaining the required consistency for Machine-laid or Hand-laid application, and minimum cement in order to achieve the target compressive and flexural strength
- Technical support by XCS all the times
- CCP is locally produced to enhance LEED MR-5 and Estidama SM-9 under 'Stewarding Materials' category to achieve Pearl Building Rating System
- When necessary the chemical admixture can be regulated based on method of placement.

### **Quality & Care**

Cement Concrete Pavement (CCP) using natural crushed aggregate has been developed by XCS Technical R&D Team to meet the special project requirements, and taking into account GCC weather conditions. CCP produced by XCS Abu Dhabi in our batching plants is designed under our Integrated Management System (IMS), which is independently certified to conform to the requirements of quality ISO 9001, environmental ISO 14001 and occupational health & safety ISO 18001 standards.

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