

CLASSIC DURA[™]CONGUARD

Migrating Bipolar Corrosion inhibiting Admixture for Re-inforced concrete with cathodic & anodic protection

Product:

Classic Dura Conguard highly recommended for all structures in re-inforced concrete, normal or prestressed in particular in aggressive situation like bridges, viaducts, exposed concrete facades. This product is certified that CENTRAL ELECTROCHEMICAL RESEARCH INSTITUTE (CECRI-INDIA)

Used & Futures:

- Anodic and cathodic protection
- Contains multiple complex migrating corrosion inhibitors Contains passivating functions.
- Reduction of the chloride permeability
- Reduction of carbonation >85%
- Reduction of the corrosion potential >80%
- Highly effective even in presences of chloride salts increased concrete durability.
- It does not contains nitrites and chlorides

Description:

Classic Dura Conguard liquid admixture composed out of reactive complex mixture of multifunctional corrosion inhibitors which would be migrating and interfacial with anodic and cathodic protection with a special efficiency in the nano-capillary of concrete and mortars. It can also be used to achieve better protection against re-inforcement corrosion. It is active not only in contact with the metal, but also it migrates through the micro porosity of the concrete to reach the re-inforcement of existing structures to ionize consequently provide cathodic and anodic protection.

Classic Dura Conguard is a superior technical solution to extend the life time expectancy of reinforcement concrete subjected to aggressive corrosion promoters such as oxygen, humidity, chlorides from deicing salts or marine environments etc.,

Packing

Available in 20 and 200 litre HDPE Containers.

Dosage:

Classic Dura Conguard is normally recommended for use at a dosage rate of 2 Litre/m ³ for all the congested re-inforced concrete aggressive corrosion environments and chloride ions exposure of the structure etc..

How to Use:

Compatibility

Classic Dura Conguard is compatible will all other range of admixtures in the same concrete mix. All admixtures should be added to the concrete separately and must not be mixed together prior to addition. The performance of concrete containing more than one admixture should be assessed by the trial mixes to ensure the desired combination of effects is obtained.

Classic Dura Conguard is suitable for use with all type of ordinary Portland Cement. Contact Primadonn for advice on to use with sulphate resisting cements and cement replacement materials.

Dispensing:

The correct quantity of **Classic Dura Conguard** should be measured by means of a recommended dispenser. The admixture should than be added to the concrete with the mixing water to obtain the best results.

Curing:

As with all structural concrete, good curing practices should be maintained. Water spray, wet hessian or a Classic CURE WB White spray applied curing membranes should be used.

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Typical Properties:

Appearance: Light pink coloured liquid

Specific Gravity: Typically 1.035±0.02@20 °C

Chloride content: Nil to BS 5075

pH Value: 10 to 12 @ 20 °C

Storage:

Classic Dura Conguard has a minimum shelf life of 12 months provided the temperature is kept within the range of 2 °C to 50 °C.

Classic Dura Conguard is an oxidizing agent and should be stored away from the reducing agents and combustible materials.







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सीएसआईआर-केन्द्रीय विद्युतरसायन अनुसंधान संस्थान

CSIR-CENTRAL ELECTROCHEMICAL RESEARCH INSTITUTE

(वैज्ञानिक तथा औद्योगिक अनुसंघान परिषद् Council of Scientific & Industrial Research) कारैकुडी-630 003, तमिलनाडु, भारत Karaikudi-630 003, Tamil Nadu, India

CSIR-CECRI

REPORT

Project title : Evaluation of corrosion protection efficiency of migrating inhibitor for reinforced

concrete structures

Sponsorer : Primadonn Buildtech Private Limited, Chennai

: To evaluate the efficiency of migrating corrosion inhibitor in concrete Objective Product : Primadonn Classic Dura Conguard - Corrosion inhibiting for concrete

1. Influence of inhibitor on properties of concrete

Property	Value		Remarks
	Concrete without inhibitor	Concrete with inhibitor	
Slump (mm)	83	92	As per ASTM C1582/C1582M – 11 (2017), the slump value is > 75mm and < 200mm.
Setting time (min) Initial Final	330 469	365 540	j
Fresh density (kg/m³)	2,585	2,599	- 7
Cylinder compressive strength (MPa) 3-day 7-day 28-day	5.71 8.36 15.41	4.64 6.82 12.83	As per ASTM C1582/C1582M – 11 (2017), the compressive strength of concrete with inhibitor is within the permissible limits (not less than 80% of control concrete).
Flexural strength (MPa)			As per ASTM C1582/C1582M – 11 (2017),
3-day 7-day	1.47 1.28	1.21 1.30	the flexural strength of concrete with inhibitor is within the permissible limits
28-day	1.67	1.87	(not less than 80% of control concrete).

2. Uniformity and equivalence characteristics of inhibitor

2.1 Properties	
Colour - Pink	
Odour - Pungent	
pH - 11.89	

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Dr V. Saraswati

Principal Investigator Dr. J. DANIEL

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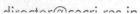
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Touching Lives Through Electrochemistry.

REPORT

Wave No. (cm ⁻¹)	No. (cm ⁻¹) Functional groups		
3660-2649	O-H and N-H stretching groups		
2920-2950	Asymmetrical stretching of CH2 & CH3 and also to N-H vibrations		
2863	Stretching of CH3		
1733	C=O carboxyl stretching vibrations		
1598	Vibration of (COO-) ionic carboxyl group and N-H deformation modes in the NH2 group		
1476 and 1373	Stretching and bending modes of aliphatic C–H		
1196	C-N stretch secondary amine		
1107	C-O-C group		

2.3 Residue by oven dry	ing method	
Percentage residue	5-6%	< 12% as recommended by ASTM C494 / C494M – 05a

3. Corrosion experiments

- Visual examination of the surface condition of rebars showed that, the corroded area of the rebar embedded in concrete containing Primadonn Classic Dura Conguard inhibitor was less than that of the rebar embedded in concrete cast without inhibitor.
- Addition of Primadonn Classic Dura Conguard inhibitor showed tendency to decrease the corrosion potential values.
- The Primadonn Classic Dura Conquard inhibitor improved the corrosion behavior of the embedded steel rebars in concrete by delaying the initiation of corrosion with an efficiency of 85%.

----- End of Report -----

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