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CONCRETE NEWS

ACI- Kuwait Chapter



ACI - Kuwait Chapter
Kuwait Society of Engineers - KSE
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CALENDER OF EVENTS 2000

- 26 - 31 March 2000 Exhibition: The 2nd Construction & Concrete Expo 2000
- 2 May 2000 Technical Seminar: "Designing Durable Concrete Structure According to the ACI, Australian and Euro code 2"
- 16 May 2000 Social Event: Dinner at MAYES AL-GHANEM
- 27 - 29 May 2000 Technical Training: "Design, Detailing and Construction Requirements of Concrete Structures in hot and Marine Environments"
- June 2000 News Letter: Volume 3 / No. 1
- Sept. (TBA) 2000 Field Visit: Ghassan Al-Khalid Factory for Hollow Blocks
- Sept. (TBA) 2000 News Letter: Volume 3 / No. 2
- Sept. (TBA) 2000 Technical Seminar: "Cracking in Concrete: A Panel Discussion"
- Oct. (TBA) 2000 Social Event: Dinner Location to be Announced Later
- Oct. (TBA) 2000 Technical Training: "Dependent upon members response to questionnaire"
- Nov. (TBA) 2000 Field Visit: ISO Foam Factory in Sabhan
- Dec. (TBA) 2000 News Letter: Volume 3 / No. 3
- Dec. (TBA) 2000 Election: With Dinner at KSE
(TBA = to be announced later)

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Fill in the coupon below and fax it to 4815223, we'll rush you complete information on ACI KUWAIT Chapter affiliation.

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The Opinions expressed in Concrete News are those of the authors and do not necessarily reflect the official views of ACI-Kuwait Chapter.

Dinner Party for All ACI-Kuwait - Chapter Members

Social Committee of ACI-Kuwait Chapter has invited for a dinner party on Tuesday 16 May 2000, (8:30 p.m.) at MAYES AL-GHANIM, on the sea face.

Glimpse on the Construction Business in Kuwait

KUWAIT Bids Opened, Contract Let for Oil and Gas Projects

The Kuwait Oil Company (KOC) has opened bids for two new oil and gas projects, and has issued a letter of intent for the Minagish water injection project (Kuwait. MEED Special Report, 25:2:00, page 15).

The award at Minagish has gone to Snamprogetti of Italy, with Athens-based Consolidated Contractors International Company (CCC), for KD 36.3 million (\$120 million). Its price was the lowest, narrowly ahead of South Korea's Shinwha Engineering & Construction Company.

These placings have been reversed for the recently opened tender for gas booster station 130/131. Shinwha was low bidder at KD 39.6 million (\$129 Million), ahead of Snamprogetti at KD 40.6 million (\$135 million).

Hyundai Engineering & Construction Company of South Korea was in third place, at KD 41.3 million (\$138 million).

KOC has also opened bids for the contract to expand the capacity of gathering centre 23 to 165,000 barrels a day (b/d) from 105,000 b/d. The low bidder is US-owned PetroFac International, with the local Kharafi National, at KD 16.7 million (\$55.6 million). In second place is South Korea's SK Engineering & Construction, at KD 17.5 million (\$58.3 million). Bids were also received from Hyundai, LG Engineering of South Korea and Clough Engineering of Australia.

Mitsubishi bids low for three more substations

Japns's Mitsubishi Electric has submitted a highly competitive low bid of KD 6.9 million (22.2 million) for the west Jaleeb B, E and G substation contract. The bid was 16 per cent lower than that of its nearest rival, South Korea's Hyundai Engineering & Construction Company. Six companies participated in the tender, which calls for the supply and installation of three 132/11-kV substations. The client is the Ministry of Electricity & Water (MEW).

The full list of bidders is:

- Mitsubishi - KD 6.9 million
- Hyundai - KD 8 million (\$25.8 million)
- Germany's Siemens - KD 8.4 million (\$27.1 million)
- France's Cogelex - KD 8.5 million (27.4 million)
- Zurich-based ABB Asea Brown Boveri - KD 9 million (\$29 million)

The west Jaleeb work is the latest in a series of 132-kV tenders issued by MEW to meet demand from new housing developments set up by the Public Authority for Housing Care. Contract awards are pending for another five substations, and tenders are expected to be issued for a further nine by mid-year.

In addition, MEW is expected to release tender documents soon for a new 300-kV substation at west Jaleeb. The conversion of the existing Shuabia 132-kV substation into a 300-kV substation is also planned (Kuwait, MEED Special Report, 25:2:00, page 16).

Hyundai bid lowest in Kuwait oil pier tender

KUWAIT, May 24, (Rtr): South Korea's Hyundai put in the lowest bid of 100.5 million Kuwaiti dinars (\$326.5) in a tender for a new oil export pier in Kuwait, industry executives and bankers said on Wednesday. "The tender closed yesterday (Tuesday) and Hyundai Engineering and Construction Co. Ltd came in with the lowest offer," said one executive after reviewing the bids on Wednesday. Executives told Reuters that according to official documents: Australian engineering firm Clough Ltd came in second place with 105.4 million dinars, Swedish NCC ABB bid 118.3 million dinars and Italy's Saipem bid 180.6 million dinars for the new pier at Kuwait's southern export terminal in Ahmadi. The Kuwait National Petroleum Co (KNPC) tender is for engineering, procurement and construction of a new oil pier and associated topside facilities at Mina Al-Ahmadi refinery. Kuwait, which sits on almost 10 per cent of the world's oil, currently has an Opec quota of 1.98 million barrels per day (bpd). Its actual production capacity stands at around 2.4 million bpd but it hopes to raise it by another million in the next few years.

Report on

First Middle East Chapter Roundtable May 8, 2000, Abu Dhabi, UAE

ACI Kuwait Chapter President (Dr. Bader Al-Hoti) and Vice President (Dr. Naji Al-Mutairi) attended on May 8, 2000 the First Middle East Chapter Round Table at UAE which was called for by the ACI International. Six regional chapters attended the Meeting as follows:

ATTENDEES

United Arab Emirates (3)

Dr. Abdul-Rahim Subouni
Mr. Mike Smith
Mr. Mamdouh Hamouda

Saudi Arabia (3)

Dr. Maher Bader
Dr. Marwan Daye
Dr. Omar S.B. Al-Amoudi

Kuwait (2)

Dr. Bader Al-Hoti
Dr. Naji Al-Mutairi

Iran (2)

Dr. Ali R. Khaloo
Mr. Mostapha Ahad-Vand

Lebanon

Mr. Khaled Awad

India (2)

Dr. Surendra K. Majrekar
Mr. R.N. Raikar

ACI International

Mr. William R. Tolley

A reception dinner took place on the night of May 7, 2000 where attendees got to introduce themselves and chat with each other. On the day of the meeting (May 8, 2000) the meeting started at 9:00 am and concluded at 4:00 p.m.

The meeting started with a presentation by Mr. Bill Tolley about ACI which included information about the organization such as:

Members Worldwide	1650
Countries Represented	112
Members serve on ACI Committees	3000
Chapters worldwide	88
Home page for chapters	
Chapter Link	
Chapter news section in ACI Concrete International etc.	

The chapters representatives gave an overview on their chapters as follows:

1. India Chapter presented themselves:

21 years old
1200 members
4-5 paid staff members to keep record
Fees US \$ 3-4 dues for members
Location in Central Bombay
Board includes: president/Vice President/Secretary Officer/six Directors

2. UAE Chapter presented themselves:

3 years old
65 members
no dues for members (an ACI International member can be a chapter member)
Location in Abu Dhabi
Board includes: President/Vice President/Secretary/five Directors

3. Kuwait Chapter presented themselves:

3 years old
20 organizational members fees US\$ 300
170 individual members fees US\$ 50
30 student members fees US\$ 15

Location in Kuwait City

Board includes: President/Vice President/five Directors

4. Iran Chapter presented themselves:

Established in 1976-1977 but was slowed down due to the revolution in Iran.
5-6 year active
17 member of ACI International Members
100 + local member US\$ 16 fee
Board includes: President/Vice President/Secretary

5. Saudi Arabia presented themselves:

Started in 1993 as 7 Board members now 11 Board members
500 members (200 in Central Chapter, Riyadh, 300 in East Province, Dammam)
Fees US\$ 40 for members
Fees US\$ 15 for students
Under the Umbrella of Al-Omran Society

6. Lebanon Chapter presented themselves:

Under establishment
15 members → fees US\$ 33 for member
fees US\$ 13 for students

The chapter representatives then exchanged their experience in different topics . Many ideas were shared to address issues of concern regionally and how to deal with challenges.

It was clear from the meeting that Kuwait Chapter has an excellent overall performance because of its clear By-Laws, its technical activities (lectures, seminars, exhibitions), its technical publications, its newsletter, etc. The chapter representative distributed some of the chapter publications to the attendees. As a result of the good impression that ACI International representative and the other regional chapters representatives got about Kuwait Chapter, ACI International will consider Kuwait as one of the possible locations for one of its future regional conferences .

Overall the meeting was excellent and a good opportunity to establish links with regional chapters. All attendees thought that such an event should take place periodically.

Corrosion Protection Systems Applications and Implications Engineering Newsletter

Following the widespread cases of premature deterioration of reinforced concrete structures in the Arabian Gulf region, and based on many research studies, surveys and investigations conducted in the region over the last twenty years, the construction industry has realized the vital role of applying corrosion protection systems to prolong the service life of concrete structures and their durability. Studies conducted on marine and non-marine structures have proved that lack of corrosion protection measures, particularly for marine structures, is the major contributing factor for deterioration of structures in the region.

In the last decade, and due to the vast development in the corrosion protection systems around the world, the Arabian Gulf region has been designated as one of the main concrete corrosion research areas. A large flux of corrosion protection technologies, which were developed in Europe and America, were utilized in construction projects which are particularly subject to risk of corrosion induced deterioration and related symptoms. Applications of these technologies were based on their good performance under the environmental conditions of the place of origin. In many incidents, in different Arabian Gulf states, improper application of corrosion protection can render the structures worse than the original condition. Lack of technical data on performance of

these systems under service and local environmental conditions, have instigated the need for proposing a research program to investigate performance of these systems and to establish the necessary technical data base record.

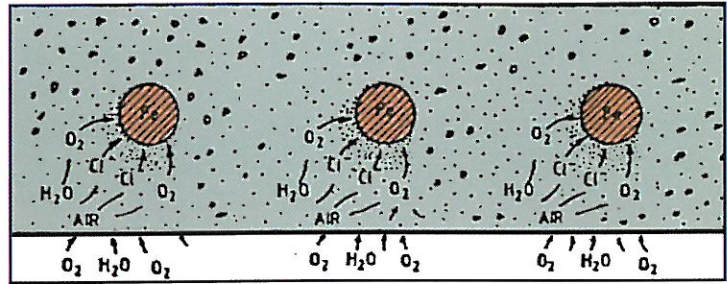
Civil Engineering and Building Department of the Engineering Division at Kuwait Institute for Scientific research (CBD / ENG / KISR) is leading two research activities to fulfill these objectives: Performance of Slag Concrete, and Evaluation of Selected Corrosion Protection Systems for Reinforced Concrete Structures in Kuwait.

The objectives of these research activities are:

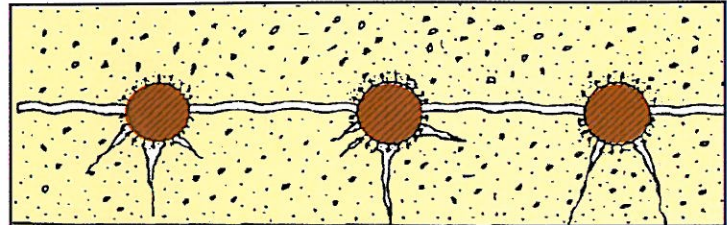
- Identify corrosion protection systems that are most suitable for application in reinforced concrete structures in Kuwait and other Arabian Gulf states.
- Establish performance data on selected corrosion protection systems under typical local service conditions.
- Demonstrate enhancement achieved in concrete durability when corrosion protection systems are used under the environmental conditions in the Arabian Gulf region.
- Determine the economic benefit of using the corrosion protection system(s) found to be most suitable for application in Kuwait and other Arabian Gulf states.

Repair Strategy for Corrosion Damaged Concrete

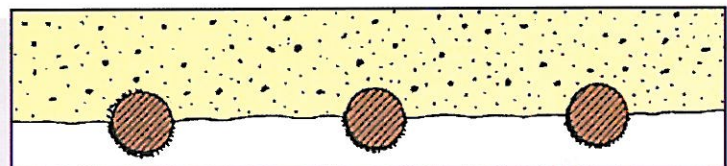
Step 1: Corrosion product due to penetration of chloride ions, moisture and oxygen



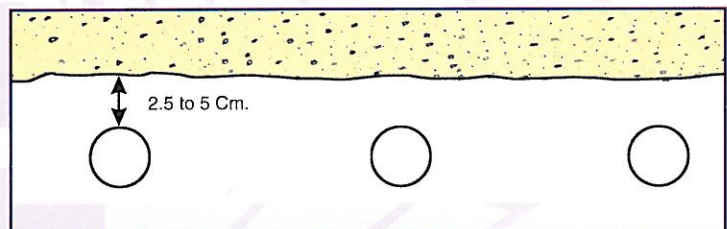
Step 2: Manifold increase of volume of rusting reinforcement produces tensile forces which causes cracking.



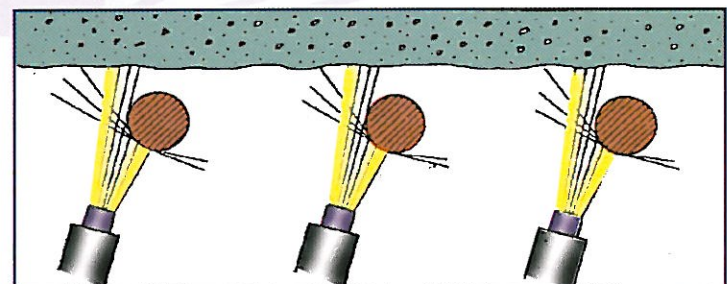
Step 3: Cracked or spalling concrete is removed.



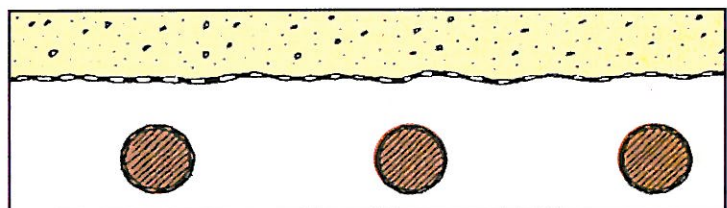
Step 4: Concrete is removed to a depth of about 1 to 2 in. (25 to 50 mm) from behind reinforcement



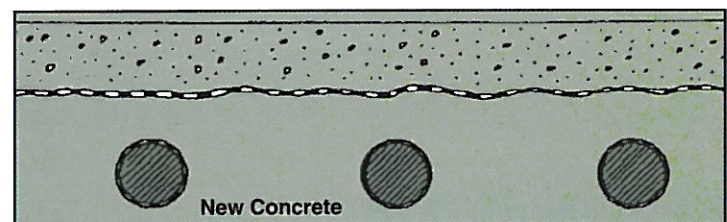
Step 5: Sandblasting of steel and concrete to remove rust and loose materials.



Step 7: Application of a bonding agent for concrete and a protective coating for reinforcement



Step 7: Concrete replacement system



New Concrete Corrosion Laboratory

A Concrete Corrosion Laboratory has been recently established at the (CBD / ENG / KISR) to support research and development facilities for durability testing, evaluation and assessment of concrete and composite materials resistivity and ability to hinder the corrosion process activities. The Concrete Corrosion laboratory provides research and testing facilities in the following areas:

- 1- Time - to - corrosion initiation, performed on concrete blocks by measuring macrocell corrosion current between top and bottom steel plates (ASTM G109).
- 2- Corrosion rate performed on concrete prisms to detect corrosion activities and determine concrete resistivity in terms of half-cell potential.
- 3- Electrochemical Impedance technique for observation and analysis of ionic activities on steel reinforcement.
- 4- Electrical indication of concrete ability to resist chloride ion penetration (ASTM 1202).
- 5- Chloride penetration profile by performing chloride ponding test (AASHTO T-259).
- 6- Evaluation of porosity, permeability, and diffusivity characteristics of concrete.

The Concrete Corrosion laboratory is equipped with the following testing and measurement facilities:

- 1- Corrosion meter.
- 2- Corrosion mapping system.
- 3- Electrochemical impedance equipment.
- 4- Electrical indication to resist chloride penetration coulomb.
- 5- Zero resistance ammeter.
- 6- Data acquisition system.
- 7- Rapid chloride tester.

ACI-KUWAIT CHAPTER ORGANIZED ITS FIRST TRAINING PROGRAM JOINTLY WITH PROJACS

The Technical Committee of the ACI-Kuwait Chapter organized jointly with Projacs, training and development group the first training program. It was held at Kuwait Society of Engineers during the period 27 - 29 May 2000. The title of the program was:

DESIGN, DETAILING AND CONSTRUCTION REQUIREMENTS OF CONCRETE STRUCTURES IN HOT AND MARINE ENVIRONMENTS

The course directors were Dr. Ahmed Sherif Essawy (Course Coordinator), Dr. Moetaz El-Hawary and Dr. Khaldoon Rahal. The topics discussed in this program were the following:

- 1- Concrete Structures in the Local Environment
- 2- Hot Weather Concreting
- 3- Concrete Materials and Admixtures
- 4- Concrete Mix Design and Quality Control
- 5- Design Considerations for Concrete Structures in the Gulf Region
- 6- Reinforcement Detailing and General Recommendations

A total of 21 participants all of the ACI chapter members attended the program and their evaluation of this program indicated its success. The technical committee will therefore arrange for another program after summer vacations.

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American Society Of Civil Engineers: <http://www.asce.org/>



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