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Int'l Committee on Concrete Model Code for Asia Newsletter, Vol. 11, February 2010

Special Issue for Prof SONG Ha-Won

Tamon Ueda
Hokkaido University, Japan
Chairman, ICCMC

This special issue of ICCMC Newsletter is dedicated to the late Prof SONG Ha-Won, who was an ICCMC member for more than a decade and served as Vice-Chairman from July 2004 until his untimely passing away on 25 July 2009. Prof Song had devoted himself to extend the international code activities of ICCMC in Asia to the other parts of the world through ISO. He had been Coordinator of the ISO Task Force in ICCMC since its establishment. Since Korea and Japan were the only Asian member countries actively participating in ISO/TC71 "Concrete, Reinforced Concrete and Prestressed Concrete", Prof Song and I worked together to have a new Subcommittee on Maintenance and Repair of Concrete Structures (SC7) which was finally established in 2004. In SC7, which was chaired by Prof Song, various standards, such as a set of umbrella codes on maintenance and repair of concrete structures and guideline for repair of water leakage cracks in concrete structures, have been drafted based on the works prepared by ICCMC. The recent success in ICCMC activities could not be made without Prof Song's great contribution.

My first meeting with Prof Song was at the University of Tokyo in 1990 when I was an associate professor there. He, a young researcher with a PhD from the University of Texas at Austin, joined the University of Tokyo as an assistant professor to become the first Korean professor at the University of Tokyo. He later joined his alma mater, Yonsei University, to work with Prof BYUN Keun Joo. Since Prof Byun was an active member in ICCMC, Prof Song later joined ICCMC.

Prof Song and I had two international collaborative study grants funded by the Korean and the Japanese governments. When I asked Prof Song to make a video message for my presentation at the hearing of the Japanese government grant, he kindly did so within one day. It was April 2009, three months before his passing away. My last communication with him on the invited paper for the international journal "Advanced Concrete Technology" that I asked him to write was two weeks before his eternal trip. He just worked with me normally without letting me know about his fatal disease. Ms PARK Youngsook, Prof Song's wife, told us about his last days at work when Werawan and I visited her to pay our last respect to Prof Song. He was truly a devoted excellent academia who continued to be active domestically and internationally until his very last moment.

The passing away of Prof SONG Ha-Won is a great loss to ICCMC. However his works would remain forever in ICCMC and his soul would watch over us and guide us to a bright future.

Photo - Prof Song as SC7 Chair with Dr Corley, TC71 Chair (Dec 2005, Seoul)

A Gentle Nature and Sturdy Personified – Prof Ha-Won Song

Oh, Sang Keun
Seoul National University of Technology, Korea
WG3 member, ICCMC

It is more than six months since the passing away of Professor Ha-Won Song who was a rising star in the horizon of scholarly civil engineering society of Korea. But the void created due to his departure is never to be filled. His death was reported widely in Korean media. It was very untimely and premature. The tireless devotion of Professor Song to his profession in teaching and conducting research till the last days of his life without letting anyone know of the killer terminal illness he had been suffering from moved everyone to no ends.

Professor Song worked his way through to the top echelon at Yonsei University. After finishing his Masters degree at University of California, Berkeley with flying colours, he received an all-expenses-paid scholarship to do his doctoral studies at Texas University in the USA. This did not go very well with the less lucky students who had to earn and pay for their studies. But Professor Song had the heart to support some of these students from his own scholarship clandestinely. He had the

same spirit working when he decided to donate all condolence money that would be collected to support poor students before his death, once again confiding only to family members. Consequently, his family donated all the condolence money of ₩ 30,000,000 to Yonsei University.

Professor Ha-Won Song was a perfect gentleman with very amicable nature with smile on his face all the time. But he was extraordinarily dedicated to his profession and possessed a sturdy spirit to complete any task he undertook. No doubt, he had many respectable achievements in his life.

He was a diligent researcher and within the relatively shorter life span of his, he managed to publish more than 40 SCI-grade papers. During the last few years he served as the Chairperson for the ISO/T71/SC7 and in that capacity contributed towards international standardisation of different national and international civil engineering topics and/or materials. His service to the profession was recognised even after his death as he was selected as the winner of Yonsei engineer '2009 prize.

I take this opportunity to let the reader know of the happy news that Professor Song's eldest daughter He-Jin has just passed the examination for entry into the Department of Social Welfare of Yonsei University. He-Jin was always interested in doing degree in Social Welfare and she often told that she wanted to give to those who are in need. It seems she inherited the selfless warmth of heart from her illustrious father.

It was the newly established WG3 under ISO/TC71/SC7 when I became the convener for the WG3 and when I came in close contact with Professor Song. He used to chair meetings showing due respects to others exhibiting his humane nature, and at the same time he used to maintain a cool head and take actions decisively with clear, unambiguous flair – clearly the acumen of a true leader.

As a senior in international activities, he always gave me his opinions and suggestions whenever needed and he attended to my query even when he was busy. I cannot thank him enough for his kind help and friendly attitude towards me. His sudden demise came as a great shock to me. It seems it deprived me of expressing my gratitude to him properly. My short memories with him flashed in front of my eyes as black and white films.

Korean civil engineering professional community lost a great stalwart in Professor Song. The domestic construction and civil engineering field in Korea, the ISO, the ACF and the ICCMC will miss the services of Professor Song immensely.

Professor Ha-Won Song will never be forgotten. His gentle nature, warmth of heart and sturdy spirit will for ever be remembered. We should learn from the example of the way he led his life. For the first time through this article, I could really express my gratitude to Professor Song. At the same time, I feel with a heavy heart that I was robbed of the opportunity to thank him enough when he was still alive by divine intervention.

Photo - ICCMC General Meeting in Taipei, 2007

The Person Who Responded to My Opinion Seriously for Chloride Regulation of Concrete

Kazuo Yamada
Taiheiyo Cement Corporation, Japan
WG 2 Member, ICCMC

It was 2000 in Mont-Tremblant, Quebec, Canada. We met at one of the United Engineering Foundation Conference (now, succeeded as Engineering Conference International), *i.e.* Advances in Cement and Concrete Technology. At that time, I was surprised because Prof. Song spoke excellent Japanese! After that we've met many times at various international conferences.

During one of them, we were discussing about the chloride threshold for steel corrosion in concrete (C_{th}). It was a complain of him that the standard of KCI (Korean Concrete Institute) had adopted the total Cl amount per unite volume of concrete (total amount) such as 1.2 kg/m^3 as a chloride limit in concrete for corrosion. This is the same way with Japan but different from US and EU ways, *i.e.* mass proportion to unit cement content (proportional amount) such as 0.4 mass%-cement.

I have been insisting to modify Japanese way to European way in Japan. There have been so many different and conservative opinions. However, JSCE (Japanese Society of Civil Engineers) decided to modify the chloride limit only in grouting materials from "total amount" method to "proportional amount" method in 2009 version.

Prof. Song kindly invited me as a lecturer for an international seminar organized by KSCE (Korean Society of Civil Engineers) in Cheju Island, 2005 (Fig. 1). In this seminar I presented the difference of these two methods and insisted "proportional amount" method is reasonable. Prof. Song understood the meaning deeply. After that, I heard that Prof. Song had worked intensively on this issue in Korea and in Nov. 2009 KCI approved new method of "proportional amount" for C_{th} for concrete, *i.e.* 0.4 mass%-cement. For grouting materials, Ssanyong Cement Industry Co. proposed to change the regulating method from "total amount" to "proportional amount" and it was changed as 0.08 mass%-cement.

It is a great thing to change a unit of regulation. Changes of values may be possible. However, the change of unit requires the conversion of the way of thinking. Korea is now more challenging and advanced than Japan!? Of course, for these kinds of changes, many experts joined and discussed so many times and discussions are still continuing in both countries to search more reasonable solutions for many parts of various standards such as ready mixed concrete. In this special issue of ICCMC, I wish to memorize his great and honorable effort by explaining this important difference of two methods briefly.

1) Difference in the unit for chloride limit in concrete

The difference of describing way for chloride limit has no effect for general concrete having unit cement content around 300 kg/m^3. 0.1 mass%-cement of chloride as chloride limited in ready mixed concrete is equal to 0.3 kg/m^3 of total chloride ions in concrete. However, it results in a big difference in mixtures having more unit cement content such as high strength concrete or grout. When unit cement content is 600 kg/m^3, 0.1 mass%-cement of chloride is 0.6 kg/m^3. Which way is reasonable?

2) Chloride corrosion and regulation

From a simple chemical consideration, steel corrosions are controlled by the $[Cl^-]/[OH^-]$ ratio in pore solution in concrete. Therefore, theoretically, solved chloride in concrete is considered as the most rational factor to be regulated. However, in real concrete structures, there are many factors affecting the status of corrosion. Many researchers carried out field surveys in large scales in order to know the C_{th} in real field. Typical examples are UK and Japan. Both results based on thousands of structures are similar. Serious corrosions were detected in concrete structures when the chloride content is over than 0.4 mass%-cement or 1.2 kg/m^3. Chloride corrosion is natural phenomena including scientifically clear mechanism mentioned above and other factors, *e.g.* amount of voids such as entrapped air, cracks, moisture content, affinity between concrete and rebar, and neutralization. Therefore, it is reasonable to determine the regulation based on field experiences. Laboratory experiments and theoretical consideration can give the supporting reason for the regulations.

3) Normal concrete

According to Japanese standard, chloride is limited less than 0.3 kg/m^3. This number is based on the research results of 1.2 kg/m^3 of C_{th}. One forth may be a reasonable value for important concrete structures. In UK, after many discussions, based on the number 0.4 mass%-cement of C_{th}, 0.1 mass%-cement was adopted as allowable chloride level for prestressed concretes. It is interesting, in both UK and Japan, the regulation was determined as the same one-forth of real C_{th} values.

4) High strength concrete and grout

As mentioned above, both "total amount" method and "proportional amount" method has no difference when the unit cement content is 300 kg/m^3. However, when the mixture has more cement content, the discrepancy occurs. There is an experimental result comparing two methods of description[1]. A rebar is molded in a concrete block and the top surface of specimen was exposed in NaCl solution to be penetrated for chloride from one side. The depth of corrosion and the chloride content at the interface between corroded and un-corroded parts of a rebar was determined precisely by using EPMA, electron probe micro-analysis[2]. The results are shown in Fig. 2[1]. When C_{th} is described in "total amount" method, C_{th} is dependent on unit cement content. When C_{th} is described in "proportional amount" method, C_{th} is independent on unit cement content. These are quite reasonable as expected theoretically. Which way is better as a chloride limit?

1) K. Kono, K. Yamada, Y. Hosokawa, S.K. Yang, Chloride threshold contents for steel corrosion in concrete with various cement contents, Proceedings of the Concrete Structure Scenarios, JSMS, Vol. 6, pp. 267-274, 2006.
2) JSCE Standards on Area analysis for chemical element distribution in concrete using EPMA (JSCE-G574-2005).
3) Y. Hosokawa, D. Mori, K. Yamada, J. Otake, A study on the description of chloride threshold concentration for steel corrosion in concrete, Proceedings of JCI, Vol. 26, pp. 909-914, 2004.

Fig. 1 International seminar by KSCE in 2005 at Cheju Island. 2nd from left is Prof. Song and 3rd is the author.

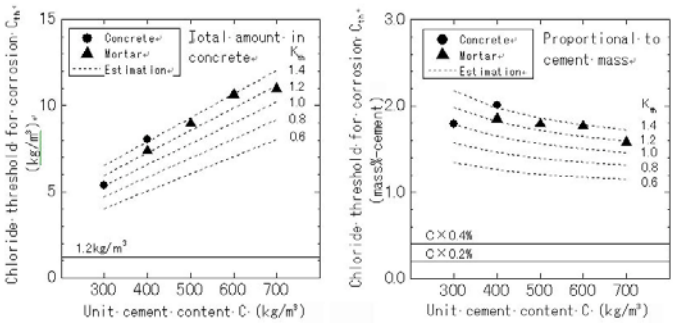

Fig. 2 Comparison of chloride threshold for corrosion expressed in two methods, total amount in concrete and proportional to cement mass. K_{th} is calculated $[Cl^-]/[OH^-]$ based on thermodynamic phase equilibrium model[3]

Professor Song and I and *Kimchi*

Werawan Manakul
Hokkaido University, Japan
Member, ICCMC

When talking to my husband, Prof Ueda I sometimes referred to Prof Song as "your brother". These two professors were so close to each other and seemed to understand what the other was thinking. Among numerous research, committee and educational activities that they carried out together, they made something unprecedented happen -- the setting up SC 7 Maintenance and Repair of Concrete Structures under ISO/TC71 with the chairmanship held by the Korea Concrete Institute while secretaryship held by the Japan Concrete Institute. No matter what media said about the relationship between the Korea and Japan, Prof Song was viewed by people who know him as a bridge between the two countries.

He was someone indispensable to me while I was ICCMC administrative manager. Whenever I needed but did not any response from some Korean members, I contacted him. Likewise when he wanted to make sure that my husband received his message, Prof Song carbon copied his message to me. He shared with me laughs as well as concerns about student matters particularly when he started to accept international students to his laboratory. I could see a caring professor in him and as a result a barrier free friendship between him and his students.

A New Year card prepared by Prof Song's students

I think those who attended the dinner after the ICCMC meeting in Seoul in 2001 can still recall Prof Song's lecture about *kimchi*. "Like concrete, the quality of *kimchi* depends on the curing time" we were told. Then he went on to describe different stages of *kimchi* from fresh to mature.

During one of his trips to Japan, he gave us a Tupperware containing *fish kimchi.* It was the most delicious *kimchi* I had ever eaten. Although I should not, I later asked him to get me that *fish kimchi* again. According to Prof Song that *fish kimchi* was not sold on the market and his wife got it from somewhere. Since then Prof Song brought me all kinds of *kimchi* hoping that one of them might be a substitute for that *fish kimchi*.

Thank you Prof Song for enriching our lives with your knowledge, friendship and a variety of *kimchi!*

Email messages from ICCMC members

We received many email messages from ICCMC members when Prof Song passed away. Many of them expressed gratitude for Prof Song's great contribution to ICCMC and condolences to his family. Here are some of the messages that we received.

Email message from Dr Hung (Jul 25, 2009)
Dear All,

We as Vietnam Concrete Association would like to share with Korean friends of our sincere condolence to Prof Ha-Won Song. We remember him as active member of ICCMC.

Le Quang Hung (WG3 member)
Institute for Building Science and Technology (IBST), Vietnam

Email message from Prof Yokota (Jul 26, 2009)
Dear ICCMC members,

I am very much sorry to hear about the loss of Prof Song.

He was a great professor and it was my proud to have known him, it really was. I never forget his great contribution to ICCMC and ISO/TC71.

In deepest sympathy,

Hiroshi Yokota (WG3 member)
Hokkaido University, Japan

Email message from Dr Chiang (Jul 26, 2009)
Dear all

This is a shocking news to all of us in ICCMC. We did not know of Prof. Song's severe health. I would like to offer my deepest condolence to Prof. Song's immediate family on his passing. He will be missed by all for his dedication and his memory will be an inspiration to all of us.

Rgds

Jeffrey Chiang (WG1 and WG4 member)
University of Tunku Abdul Rahman, Malaysia

Email message from Dr Chowdhury (Jul 27, 2009)
Dear all,

I am deeply shocked and stunned at the sudden death of Professor Song. It was only last year I spent four months from January to May on my sabbatical with Professor Song at his laboratory. I had no idea that he has been suffering from such a deadly disease at that time. His involvement and contributions to ICCMC is known to all and it's an immense loss for the ICCMC.

My deepest sympathy and condolences to Professor Song's family and colleagues. May his soul rest in eternal peace!

Regards to all.

Sanaul H. Chowdhury (WG4 member)
Griffith University, Australia

Email message from Prof Somnuk (Jul 27, 2009)
I personally and on behalf of the Thailand Concrete Association, would like to deeply express my sincere condolence to Professor Ha Won Song's family members and those who had relation with him. We all realize that he had been contributing greatly to ICCMC and Asian concrete societies. It is really a great loss for us. We would never forget his contribution. May his soul rest in peace.

Somnuk Tangtermsirikul (WG2 and WG3 member)
Thammasat University, Thailand
(President of Thailand Concrete Association)

Email Message from Prof Loo (Jul 27, 2009)
Dear ICCMC Colleagues

It is with profound sadness and incredulity that I note the untimely passing of Professor Song Ha-Won.

In agreeing with all the eulogies already appeared on the email pages, I further wish to remember with gratitude Professor Song's association with and support for the academic endeavours of Griffith's School of Engineering. In November 2001 to February 2002 six third year Civil Engineering students gained their once in a life time working experience at Yonsei. The students thoroughly enjoyed their stay in Seoul in addition to learning a great deal from Professor Song and his then colleagues. All this was possible only because of his generosity and hospitality. My colleague Dr Chowdhury has already mentioned below the sabbatical he spent last year with Professor Song with his magnificent support. Lesser known to many is that another colleague Dr Jeung-Hwan Doh has benefitted professionally from his helpful advice and encouragement over the years.

Professor Song is forever remembered fondly for his relentless efforts and undiminished enthusiasms in promoting the ICCMC ideals, not to mention the many a post-committee meeting/ post-conference dinner party where he and I had enjoyed a drink or three together with other ICCMC colleagues - in Seoul, in Sydney and elsewhere. He visited Griffith Gold Coast campus in January last year. Unfortunately I was interstate and regrettably will never again have another such opportunity ever.

Vale Professor Song! And may you rest in peace.

Yew-Chaye Loo (WG1, WG2 and WG4 member)
Griffith University, Australia

Email message from Prof Ekasit (Jul 28, 2009)
Dear ICCMC-Community

I am very much sorry to hear about the loss of Prof. Song, Vice President of the ICCMC.

It is my great pleasure to work with him in ICCMC, ACF and ISO-TC71 of his great deal contribution to these organizations. I would like to offer my deepest condolence to his family on his passing and his dedication will be an inspiration to all of us.

Dr. Ekasit Limsuwan (WG1 and WG3 member)
Chulalongkorn University, Thailand

Email message from Dr Dai (Jan 21, 2010)
We still can not believe Prof Song's sudden leave at his most productive age because he always looked strong and self-confident. We really appreciate all great contributions he made to our research committees and we share the sadness on his leave, which is an unamendable loss of not only his family but also our whole research society. I wish to convey a message to Prof Song's family that Prof Song's smiles and spirits are alive in our hearts and I sincerely wish Prof Song a good journey in Heaven.

Jian-Guo Dai (WG3 member and the former A.M of ICCMC)
The Hong Kong Polytechnic University

Photo1 - From right, Prof Song, Dr Rostam and Dr Dai in Hokkaido University, 2005

Photo2 - Conference dinner at ConMat'05, Vancouver, Canada

ICCMC publications

2001	ACMC 2001
	An example of design for seismic actions – performance examination of RC building designed according to the Architectural Institute of Japan (AIJ) Guidelines
	ACMC 2001, Vietnamese version
2004	Vietnam Construction Standard TCXDVN 318: 2004 - Concrete and Reinforced Concrete Structures - Guide to Maintenance
	Guidelines for Maintenance and Rehabilitation of Concrete Structures against Chloride Induced Deterioration
2005	The Standard Specification for Materials and Construction of Concrete Structures in Japan
2006	ACMC 2006
2007	Design for Fire Actions – Guidelines for the Design of Reinforced Concrete Buildings against Fire Actions
2009	Design for Seismic Actions – Guidelines for Designing Transverse Confinement Reinforcement of Reinforced Concrete Columns against Seismic Actions

Joining ICCMC

ICCMC membership is open to anyone interested in concretes. Visit our website (http://www.iccmc.org/) to apply on-line or write to Mrs Naoko Masaki (admin@iccmc.org) for more information. As of Feb, 2010, ICCMC has 83 individual members from 15 countries/economies, 4 representative members from 4 countries, and 7 corporate members from 2 countries;

Individual Member:

Australia	4
Bangladesh	1
China	10
India	6
Indonesia	3
Japan	28
Korea	13
Malaysia	3
Netherland	1
Pakistan	1
Philippines	1
Singapore	1
Taiwan	3
Thailand	7
Vietnam	1

Representative Member:

China	1
Indonesia	1
Japan	1
Vietnam	1

Corporate Member:

Japan	6
Korea	1