Protecting Worker's Life and Health

KOSHA Newsletter

No. 50

May 2011

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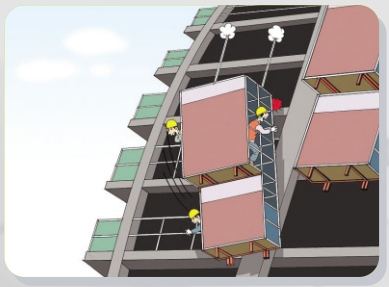

KOSHA
KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

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Transferring Advanced OSH Model to Mongolia

KOSHA organizes fellowship training program for Mongolian public officials in OSH

March 11, 2011

From March 7 to 11, 2011, Occupational Safety and Health Training Institute of Korea Occupational Safety and Health Agency (OSHTI-KOSHA; President: Min-Ki Noh) held fellowship training program for OSH officials from Mongolia.

The training program was held under the cooperative framework between Korea and Mongolia, based on the agreement on technical cooperation (MOUs) between the two countries. Twelve officials attended the training, including public officials from the Ministry of Social Welfare and Labour and inspectors from the General Agency for Specialized Inspection (GASI). Ministry of Social Welfare and Labour is in charge of policy making and legislative activities in safety and health. On the other hand, the GASI is a government agency responsible for conducting labor inspections in industrial sites.

The curriculum of the training program included 14 different training courses, which are: Korea's OSH regulations, accident prevention technologies (e.g. safety, health), construction safety, virtual safety training program, technical visits to excellent OSH worksites and so on.

"The course on OSH management system in Korea was most impressive. While Mongolia is in the process of establishing regulations related to OSH, it seems that Korea is making multi-faceted efforts to prevent accidents under systematic setting," said Ms. Magiljav Baljmaa from the Mongolian Ministry of Social Welfare and Labour, who attended the training program.

KOSHA concluded an MOU with the Mongolian Ministry of Labour and Inspection in 2003. Since then, there have been various collaborative activities between the two countries including fellowship training program targeting OSH officials, and the transfer of accident prevention know-how through technical consultations. In addition, in September 2010, KOSHA concluded an MOU on OSH with the GASI. KOSHA's endeavors to enhance OSH levels in Mongolia bore fruit in 2008 when it contributed to the enactment of OSH Act of Mongolia.

Director Gye-Wan Bae of International Cooperation Center in KOSHA said, "KOSHA's efforts to extend technical supports to developing countries in Asia, especially techniques related to accident prevention, have helped it to upgrade its image in international stage. I look forward to further improvements in OSH levels in Mongolia through this training."

Participants of Fellowship Training Program from Mongolia and KOSHA officials in OSHTI-KOSHA

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KOSHA and Ansan-si sign an MOU to Boost Safety

For a safer Ansan-si and workplaces

On March 23, 2011, the representatives of Korea Occupational Safety and Health Agency (KOSHA; President: Noh, Min-Ki) and Ansan-si (Mayor: Kim, Cheol-Min) signed a memorandum of understanding (MOU). The MOU signing was held in Ansan Culture and Arts Center in order to make Ansan-si safer and to create safe working environment.

"Safe Ansan, Safe Workplace" ceremony

- Date and time : March 23, 2011. 2 ~ 3 p.m.
- Place : Ansan Culture and Arts Center, Ansan-si
- Participants : Noh, Min-Ki (President, KOSHA)
  Kim, Cheol-Min (Mayor, Ansan-si)
  Park, Soon-Ja (Member, National Assembly)
  Kim, Kee-Wan (Chairman of Ansan-si Council)
  Jeong, Seong-Gyun (Director of Ansan Regional Office, Ministry of Employment and Labor)

The MOU between Ansan-si and KOSHA is to make Ansan a safer place, as the city is where many small and medium-sized manufacturing workplaces are located mainly in Banwol-Sihwa Industrial Complex.

As stated in the MOU, KOSHA and Ansan-si will launch many joint projects including the following:

- Providing financial assistance and technical consultation to create safe workplaces
- Providing assistance and consultations to help small and medium-sized companies to receive KOSHA 18001 certification.
- Safety monitoring and training on public construction projects, which are ordered by the city
- Other activities to make the city safer

In particular, KOSHA will focus on ensuring safety in public projects, which are led by the City.
The projects include:

- Risk assessment and safety training for public construction projects commissioned by the government
- Safety monitoring
- Preventing suffocation in confined spaces
- Customized training for workers in the public OSH sector

The ceremony was attended by some 600 participants including President Min-Ki Noh of KOSHA, Mayor Cheol-Min Kim of Ansan City, Director Seong-Gyun Jeong of Ansan Regional Office, Ministry of Employment and Labor, members of the National Assembly and representatives of public agencies and workplaces.

Together with the signing of the MOU, representatives of public agencies in Ansan, television and news media, employers' group, workers' group, OSH-related agencies, vocational training agencies, and civic groups renewed their commitments in creating safer workplaces.

In the case of Ansan City, the number of occupational injuries and illnesses is higher due to the concentration of small- and medium-sized manufacturing workplaces in the area. In 2010, 1,715 workers were injured or got ill in Banwol-Sihwa Industrial Complex alone, with the loss of 33 lives. The rate of occupational injuries and illnesses in Ansan City was 1.15%, which is much higher than the national average at 0.69%.

"A city where the safety of its people is not guaranteed cannot develop into becoming a world-class city. Various technical and financial assistance, training and a nation-wide campaign will be centered around Ansan City to make it a truly safe and advanced city," said an official from KOSHA.

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Joint Efforts to Reduce Accidents in Construction Industry

KOSHA and GUIC sign an MOU on Construction Accident Prevention

Efforts are being made to secure safety in construction sites in Gyeonggi-do where many public construction works such as residential towns and industrial complexes are in progress.

On March 30, 2011 (Wed), Korea Occupational Safety and Health Agency (KOSHA; President: Min-Ki Noh) and Gyeonggi Urban Innovation Corporation (GUIC; President: Han-Joon Lee) signed an "MOU on Construction Accident Prevention." The GUIC is in charge of public construction projects in Gyeonggi-do.

The MOU ceremony

- Date & Time : March 30, 2011 (Wed) from 3:00 to 3:40 p.m.
- Location : Gyeonggi Urban Innovation Corporation building (Gwonseon-dong, Gwonseon-gu, Suwon-City, Gyeonggi-do)
- Participants : President Min-Ki Noh of KOSHA, President Han-Joon Lee of GUIC, etc.

Signing of the MOU is aimed at preventing accidents in many major construction sites, which the GUIC is responsible for. The construction sites include Industrial Complex of Godeok International New Town in Pyeongtaek-City, Gwanggyo New Town, and Dongtan New Town.

Through the MOU, KOSHA will conduct joint safety inspections, provide safety and health training for workers, and develop and provide technical materials to construction sites of public projects being carried out by the GUIC.

On the other hand, to ensure safety in construction sites the GUIC will work on voluntary safety and health activities and develop customized safety and health materials suitable for each worksite. In the event of major accidents, a joint investigation team will be formed and take charge in the investigation.

So far, KOSHA has concluded MOUs with six public construction clients and six other related organizations. In total, KOSHA has signed 12 MOUs with organizations and agencies in order to prevent accidents in the construction industry. In addition to signing the MOU, KOSHA provides various support regarding accident prevention activities such as on-site safety & health inspections, training, development of technical materials and so on.

"Cooperation with the GUIC, which is the client of many large-scale construction projects, will contribute to ensuring the safety and health in many construction companies. KOSHA will spare no efforts to spread safety culture in construction sites in Korea," said an official from KOSHA.

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Information on Asbestos is Just One Click Away

KOSHA opens "Cyber Asbestos Information Exhibition Hall"

March 30, 2011

Information on Asbestos is now readily available on-line. Asbestos, a known carcinogen, has been widely used for many years.

Korea Occupational Safety and Health Agency (KOSHA; President Min-Ki Noh) opened "Cyber Asbestos Information Exhibition Hall" to provide easy-to-understand information about asbestos. The information offered to the general public and workers help them to better understand about asbestos, including the methods of handling it.

"Cyber Asbestos Information Exhibition Hall" is an on-line recreation of an off-line exhibition hall under the same name, which was established in December 2010 in the headquarters of KOSHA in Bupyeong-gu, Incheon.

The front page of the KOSHA website provides a link to "Cyber Asbestos Information Exhibition Hall", and visitors of the website can see all the features of the exhibition hall, without having to actually visit the place.

All the facilities and audio/visual materials of the exhibition hall are available in the cyber exhibition hall, and they look as real as they can be. A 360-degree view of the exhibition hall is possible using the computer mouse, and it adds a sense of realism.

It is possible to find out what asbestos is, the types of asbestos-containing materials, and their effect on human. Also, the on-line users can observe asbestos using microscopes and solve quizzes relating to asbestos.

In addition, the cyber exhibition hall informs people about the ways to wear PPEs, which are necessary when dismantling or removing asbestos in industrial sites.

The actual "Asbestos Information Exhibition Hall" located in Bupyeong-gu, Incheon is a single-story building with the total floor area of 375.8ß≥. Students, citizens, asbestos workers, safety and health managers and virtually all people who are interested in learning about asbestos can apply for a tour at KOSHA website and the visit is free of charge.

"The opening of on-line and off-line versions of Asbestos Information Exhibition Hall is aimed at providing correct information about asbestos. Thereby, it will help ease the fear of the unknown, while satisfying the general public°Øs needs to know more about asbestos. Also, I hope the exhibition hall will protect the health of workers who engage in asbestos dismantlement or removal works," said an official from KOSHA.

What is asbestos?

Once known as the "Miracle Mineral" asbestos has been widely used in daily lives such as insulation materials for buildings, brake pads for cars, etc.

Hazards of Asbestos

Asbestos fibers enter a human body through the respiratory system. After 10 to 40 years of latency period, asbestos causes diseases such as lung cancer and mesothelioma.

Regulations on asbestos in Korea

The production, import, use, transfer, or provision of asbestos in all forms are banned since January 2009 due to its hazards.

※ Total ban of asbestos in other countries: 1994 in the US, 2006 in Japan

The number of asbestos-related occupational diseases in Korea

Since 2000 and up until 2010, 116 people received compensations for their work-related diseases caused by asbestos. There were 59 lung cancer cases, 34 mesothelioma cases, and 23 other diseases including asbestosis. Out of these patients, 79 died.

The number of asbestos-related occupational disease since 2000/ unit: no. of persons

Year	Total	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total	116	2	2	3	11	4	11	8	15	14	30	16
non-fatal	37	0	0	0	2	0	1	1	4	3	18	8
fatal	79	2	2	3	9	4	10	7	11	11	12	8

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Opening of "Worker's Health Center"

Comprehensive health services available to workers in small workplaces

April 11, 2011-04-15

"Worker A" works in a small-sized worksite. He suffers from constant heavy workload and frequent over-time work, which make him feel tired and sick at times. However, it isn't easy for him to visit a hospital during his busy work day.

Six out of 10 occupational illnesses (4,817 out of 7,803 workers) occurred to workers in small-sized workplaces like "Worker A". These small workplaces employ less than 50 workers and the workers are often in the blind spots of health management.

However, from now on, there is a way for these workers to have access to free health care services. Through the services, workers can freely talk about their health problems and work related stress.

According to the MOEL (Ministry of Employment and Labor; Minister: Bahk, Jaewan) and KOSHA (Korea Occupational Safety and Health Agency; President: Noh, Min-Ki), the Worker's Health Centers will open in three industrials complexes where small workplaces are concentrated. The first Workers' Health Center will be established in Namdong Industrial Complex (in Incheon) on April 12, and also in Sihwa Industrial Compex (in Siheung) and Hanam Industrial Complex (Gwangju).

The Worker's Health Centers will function as designated health clinics, that protect the health of workers in small worksites employing less than 50 workers.

Name of the Center	Address	Website address (telephone no.)	Industrial Complex where the Health Center will be located
Incheon Worker's Health Center	4th floor, Incheon Jonghap Business Center, Gojan-dong, Namdong-gu, Incheon	www.icwhc.or.kr (1588-6497)	Namdong (4,133 worksites, 64,572 workers)
Western Gyeonggi Worker's Health Center	3rd floor, KT Sihwa division, Jeongwang-dong, Siheung-si, Gyeonggi-do	www.gswhc.or.kr 1577-6497	Sihwa - Banwol (7,017 worksites, 17,929 workers)
Gwangju Worker's Health Center	2nd floor, SMEs Support Center, Docheon-dong, Gwangsan-gu, Gwangju	www.gjwhc.or.kr (1599-6497)	Hanam (858 worksites, 26,447 workers)

The opening ceremony of Incheon Worker's Health Center was held at 11 a.m. on April 12. The opening event was attended by President Han-Joong Kim of Yonsei University, Mayor Young-Gil, Song of Incheon Metropolitan City, and President Min-Ki Noh, of KOSHA. Yonsei University will be in charge of the operation of Incheon Worker's Health Center.

※ Opening schedule of Worker's Health Centers: Banwol-Sihwa Industrial Complex in Gyeonggi-do
April, 20 (Wed.) at 2 p.m.
Hanam Industrial Complex in Gwangju
April, 22 (Fri.) at 2 p.m.

Medical doctors, nurses and work environment specialists performing in the areas will be providing professional medical services to workers. The occupational diseases prevention and health promotion programs include:

- consultations on general health and illnesses
- consultations on work stress and work environment
- follow-ups on health exams
- evaluation on work aptitude
- prevention on MSDs and CVDs

The medical services provided by the Worker's Health Centers are free of charge and the priority is given to workers in workplaces employing less than 50 workers.

On ordinary workdays, the Health Centers are open from 10 a.m. to 9 p.m. Should the need arises, the Health Center can provide medical services on weekends as well. By offering wide range of visit time for workers to use the service, busy workers can have access to the Health Center after work.

In addition, if workplaces want to have consultation services or training, they can apply for such programs and health experts will provide on-site services.

Starting with the 3 Worker's Health Centers, the MOEL plans to have 23 additional Centers by 2015 so that the benefit can go to as many workers as possible.

"Thanks to the Worker's Health Center, we now have a systemic way of promoting workers' health in small worksites. I will make continuous efforts to promote the health of workers and enhance their quality of life," said Minister Bahk, Jaewan of MOEL.

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KOSHA's OSH Activities during Songkran Festival

KOSHA distributed OSH media materials for Thai workers in Korea

April 11, 2011

On April 10 (Sun), the people of Thailand living in Korea celebrated the Songkran Festival, in "Wa Stadium" in Ansan, Gyeonggi-do. During the festival, KOSHA (Korea Occupational Safety and Health Agency; President: Min-ki Noh) opened a booth to provide promotional media materials on safety and health.

Photo: KOSHA during Songkran Festival

The Songkran Festival, which is Thailand's traditional New Year's Day, is also celebrated in Korea for the Thai people living in the country. This year, the Songkran Festrival was organized by the Thai Embassy to Korea and Ansan City. With the participation of more than 8,000 Thai people, there were lots of festivities including Sukhothai traditional dance performance, Songkran beauty contest, Muay Thai and many more.

On the Songkran Festival day, about 10 people from KOSHA including Director Dong-ki Park from Training and Media Department distributed safety and health media material and other PR items. Also, consultations were given to Thai workers relating to safety and health training.

The safety and health media materials provided to Thai workers through the Songkran Festival, are about the manufacturing and construction industries. The materials contain safety tips and safe handling information about hazardous work, and machine and equipment.

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The 5th Gathering of the National Committee for the Implementation of the Seoul Declaration

Promoting the Seoul Declaration through Activities in Overseas

April 20, 2011

Photo: President Min-Ki Noh of KOSHA (3rd person from the left in the front row) and participants renewed their commitments to promote the Seoul Declaration on Safety and Health at Work

On April 20, 2011, Korea Occupational Safety and Health Agency (KOSHA; President: Min-Ki Noh) hosted the 5th gathering of the National Committee for the Implementation of the Seoul Declaration in KOSHA headquarters. The National Committee is comprised of representative tripartite organizations (workers, employers, and the government) in the field of safety and health in Korea.

The National Committee for the Implementation of the Seoul Declaration, formed in April 2009, was launched to promote the "Seoul Declaration on Safety and Health at Work." The Seoul Declaration is the first universal charter on safety and health of workers.

At the XVIII World Congress on Safety and Health at Work, the Seoul Declaration was signed by 46 representatives of workers, employers, and government groups. The signatories of the Seoul Declaration promised to protect workers' safety and health.

The National Committee for the Implementation of the Seoul Declaration is comprised of 21 members, including the President of KOSHA, and representatives of Federation of Korean Trade Unions (FKTU), Korean Confederation of Trade Unions (KCTU), the Korean Employers Federation (KEF), and other workplaces.

During the meeting, the past three years' activities since the adoption of the Seoul Declaration were briefed. In addition, discussions were made to further promote the Seoul Declaration through the Korean OSH organizations activities in overseas.

To that end, the participants of the gathering talked about ways to promote the Seoul Declaration during the XIX World Congress on Safety and Health at Work to be held in Istanbul, Turkey later this year. Furthermore, they shared thoughts on encouraging more organizations to join in the activities of ISSA's Special Commission on Accident Prevention, which KOSHA serves as the President of one of its International Sections.

"It is encouraging that the representatives of the tripartite organizations are working to promote prevention culture, highlighted by the Seoul Declaration. They recognize occupational safety and health as the basic right of workers, as well as the important means to achieve economic development. I hope with more active collaboration with workplaces, the principles and significances of the Seoul Declaration become widely spread," said an official from KOSHA.

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OSH Training for Southeast Asian Countries

KOSHA hosts fellowship training for ASEAN public officials

April 22, 2011

Korea Occupational Safety and Health Agency (KOSHA; President: Min-Ki Noh) organized a 4-day workshop for public OSH officials of the ASEAN.

※ ASEAN (Association of South East Asian Nations): Cambodia, Laos, Indonesia, Malaysia, Brunei, Singapore, Indonesia, Vietnam, Thailand, and Myanmar

The workshop, aimed at enhancing the safety and health of countries in the Asia-Pacific region, was held from April 18 to 21, in KOSHA headquarters located in Bupyeong-gu, Incheon.

The workshop this year focused on a specific topic, risk assessment, upon the request of trainees. Usually the yearly workshop covers the general occupational safety and health.

Korea's risk assessment system was introduced while practical exercises and discussions on risk assessment were made through on-site visits to workplaces. These exercises facilitated effective learning of risk assessment techniques.

Starting from 2004, KOSHA has been organizing the fellowship training for countries in the Asia-Pacific region to upgrade their safety and health levels.

Furthermore, KOSHA plans to work toward improving safety and health conditions of the ASEAN countries. To that end, KOSHA set forward "National Master Plans for Cambodia and Laos" as a pilot program and plans to extend systematic technical assistance in accordance with the countries' annual plan. The countries subject to special assistance from KOSHA is expected to grow in number.

"The workshop aims to bring about realistic help for each country's OSH-related tasks and accident prevention activities. The accident prevention techniques extended to developing countries in Asia will raise KOSHA's international standing in the field of occupational safety and health," said Director Gye-Wan Bae of International Cooperation Center in KOSHA.

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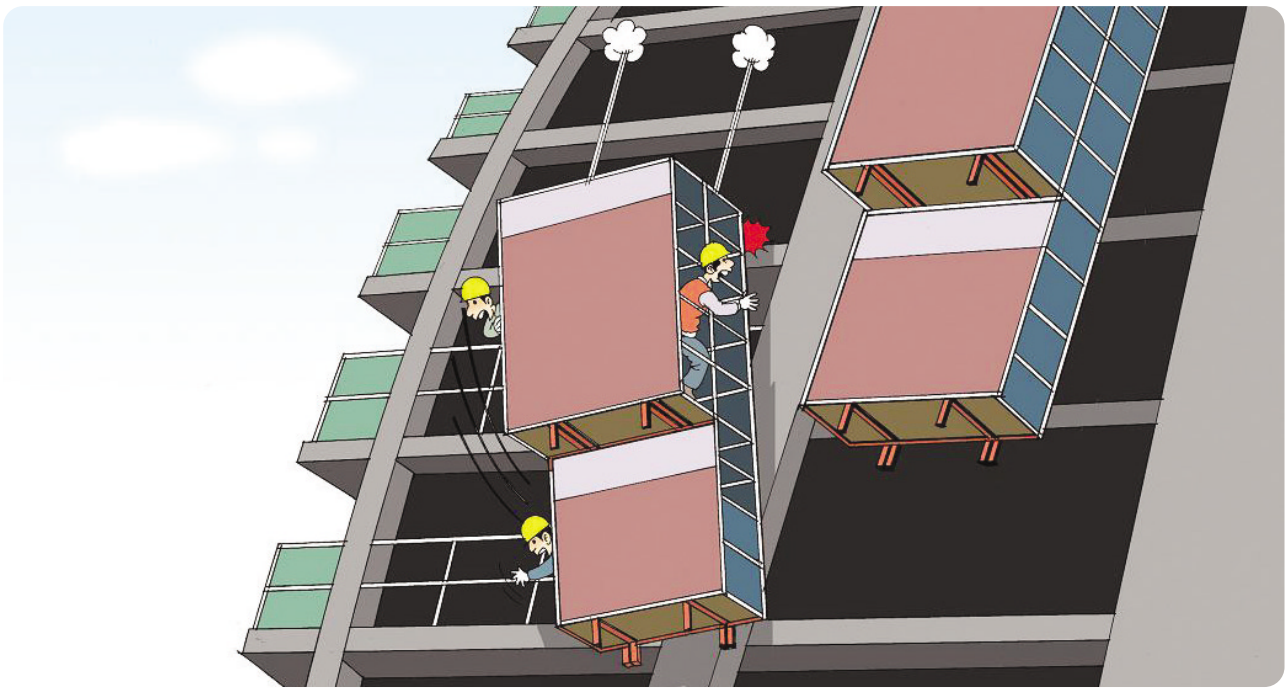
Rail Climbing System Platform Falls to the Ground during Dismantling Work

On July 27, 2010 at around 11:10 a.m. a rail climbing system (RCS) platform fell from the 64th floor (H≒219m) of a 72-story high-rise building. The construction of residential and commercial complex, consisted of five buildings, took place in Haeundae-gu, Busan City, and the fall killed three workers who were on the RCS platform.

Three workers were dismantling RCS platform from 64th floor of the high-rise building under construction. The workers were operating on the RCS platform when the climbing shoes were dislocated from the platform.



■ General Information

The building where the accident occurred had completed the structural work and was undergoing curtain wall works. The accident occurred while dismantling the RCS from 64 floors above ground on a building 72 stories high.

■ Description of the accident

- The day before the accident, the sub-contractor had submitted the application form of work instruction to main-contractor for dismantling work of the gang form and was permitted the work from main- contractor.
- On the day of the accident, the one of the three workers listed on the work instruction of the dismantling work was absent. Therefore, a new work group was formed.

※ Two other workers listed on the work instruction were assigned to a different task. The work group was re-organized, which included three workers (the accident victims), one signalman, and a worker in charge of connecting tower crane hoist rope.

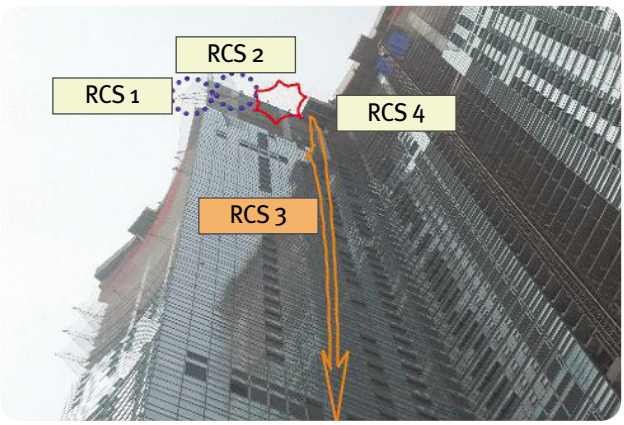
- At around 7:40 a.m. on the day of the accident, three workers started to dismantle the formworks on the facade from 64 stories above ground.

※ The upper part of the formwork was gang form whereas the lower part was RCS. The RCS was to be dismantled after dismantling the upper gang form.

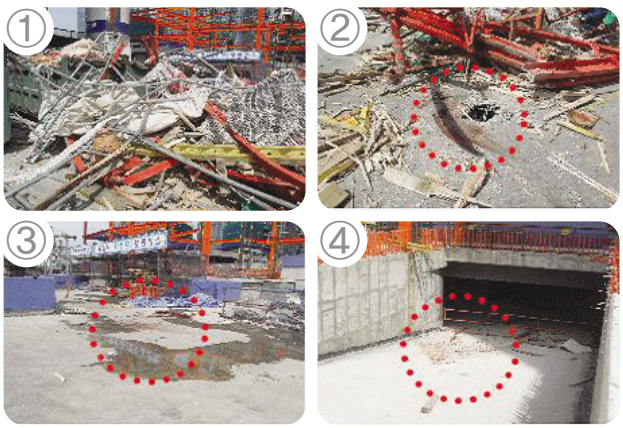
- At around 11:10 a.m. the upper gang form and one of the 4 sets of RCS working platforms ("RCS working platform 1") were dismantled and lowered to the ground. Also, the "RCS 2" was being lowered to the ground.

The status of work when the accident occurred

upper	gang form 1 : dismantlement complete	gang form 2 : dismantlement complete	gang form 3 : dismantlement complete	gang form 4 : dismantlement complete
lower	RCS working platform1 : dismantlement complete	RCS working platform2 : descending to the ground	RCS working platform3 : dismantlement in progress	RCS working platform4 : to be dismantled



The site of the accident
(The accident occurred while dismantling RCS 3)



The fallen RCS (no. 1)
and the spot where victims fell (no. 2,3, and 4)

- The workers were removing the RCS climbing shoes while the RCS working platform was not hoisted by the tower crane. During the work, the RCS working platform fell out from the climbing shoes and plummeted to the ground (H≒ 291m). Due to the accident, all of the three workers working on the RCS working platform fell to the ground and died.

■ Root Cause Analysis

- Key structure supporting the RCS(Rail Climbing System)

① Six sets of anchor bolts and brackets that fix the climbing shoes on the concrete structure.

☞ The anchor bolts and brackets were intact, fastened to the concrete slab. There were no traces of damage.

Anchor bolts and brackets in the middle

Climbing shoe remain intact

② Shoe and lock of climbing shoe (Six sets)

☞ All of the climbing shoes and locks were not damaged nor dislocated. However, there are traces of friction on the lock in the middle, which are likely to have occurred during the accident. The locks are where the RCS work platform had been supported by.

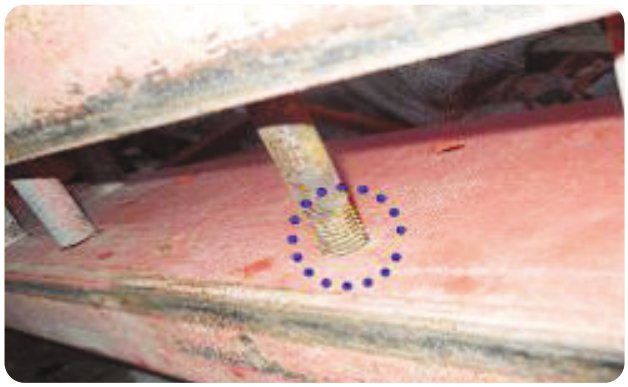
Anchor bolts and brackets in the upper, middle, lower

Traces of friction about climbing shoe

③ RCS rail and anchor bolts on the rail (two sets, M20x120)

☞ Rail flange, which was bound to climbing shoe, showed no traces of damage and the anchor bolts (M20x120) remained intact.

Anchor bolts and brackets in the upper, middle, lower



Traces of friction about climbing shoe

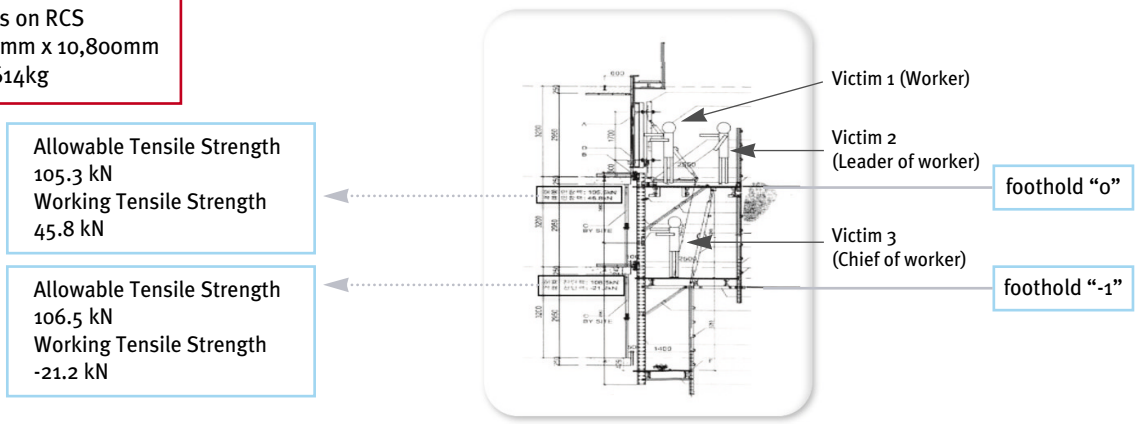
Visual inspection revealed no damage on the surface of rail, but there were traces of friction on some parts

- Work Instruction for RCS dismantlement

According to the work Instruction, the RCS work platform were to be dismantled by dislocating climbing shoe pin while the RCS work platform is hoisted by a tower crane.

Dismantling RCS platform

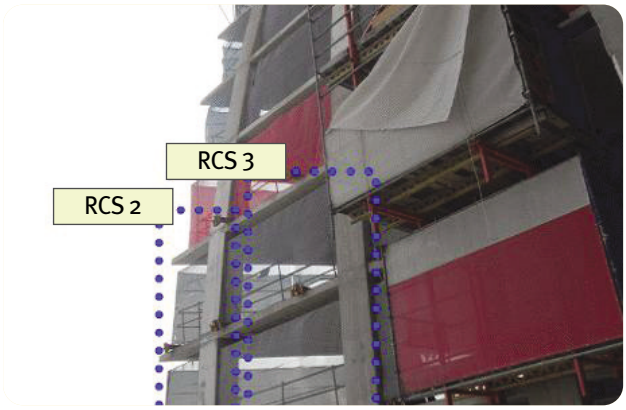
Specifications on RCS
- Size : 5,600mm x 10,800mm
- Weight : 3,614kg



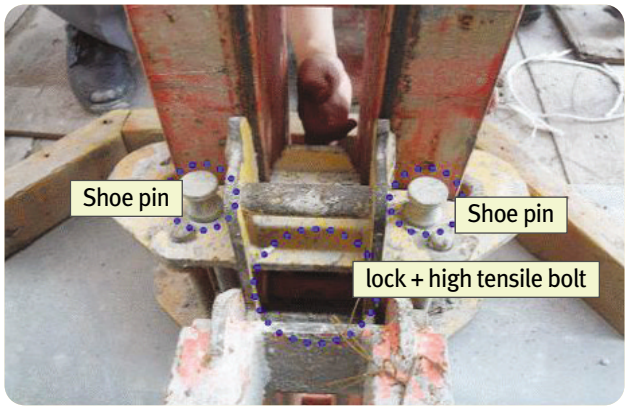
※ Wind load

According to the data provided by the KMA (Korea Meteorological Administration), the wind velocity at the time of the accident was 3.1~6.0 m/sec. The wind velocity increases about 30% (7~8 m/sec) at 100 meters above ground. Even after considering the work height, the wind velocity on the RCS work platform is within the safety limit (the wind limit set by the RCS manufacturer is 80 km/hr or 22.2 m/sec). Therefore, wind load is not considered as the direct cause of the accident.

- The work group, composed of unskilled workers, removed the shoe pin of the RCS without a crane hoisting the RCS work platform. The RCS work platform was unlocked from the shoe. The dislocation of RCS work platform from the climbing shoe is the probable cause of the accident.



The location of the accident (RCS 3 fell to the ground)



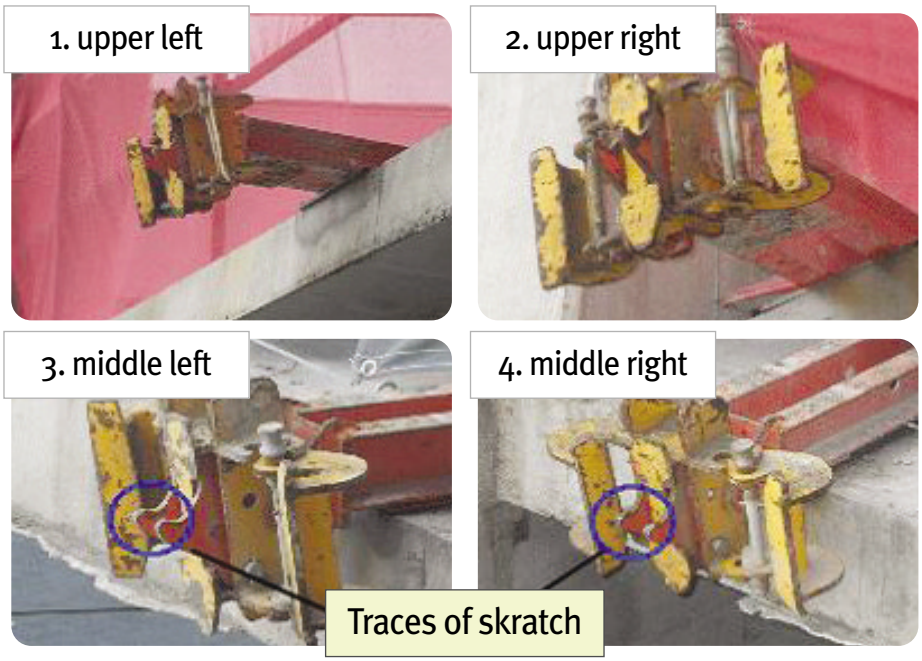
Climbing shoe of RCS 4, which was about to be dismantled

- The round trip of RCS work platform between the building facade and the ground takes about 30 to 40 minutes by tower crane. It is likely that the workers started the operation without having their work platform hoisted by the tower crane in order to finish the work quickly.

qualified
: RCS anchor bolt on other areas

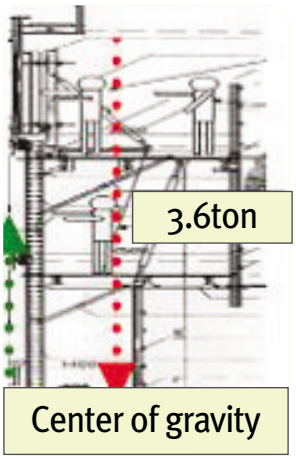
not qualified
: anchor bolt of RCS3 where accident occurred

Climbing shoe on the upper part of RCS 3, where anchor bolt was not fastened to the lock



Climbing shoe, which supported the fallen RCS 3

- Key structures supporting the RCS remain intact and the climbing shoe is open. Considering these observations, the center of gravity moved away from the supporting point and this is likely to have caused the dislocation of RCS work platform due to eccentricity. The body weight of workers, impact caused by work, and wind are possible secondary causes of the accident.

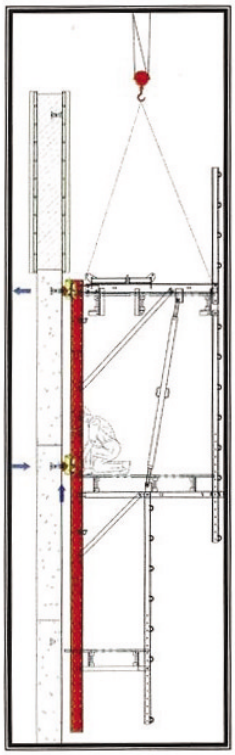


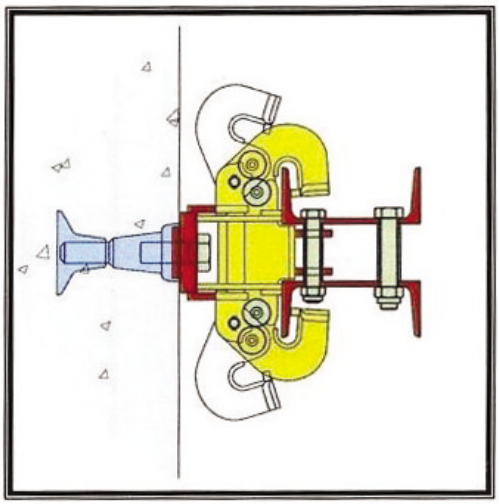
Eccentricity can occur, which is caused by self-load(self-load + working load)

The lock at a gentle angle [RCS 4]

- The angle of climbing shoe can be readjusted by 4°. In the case of other RCS installed nearby, the RCS rail anchor bolt was placed on top of the lock at a gentle angle.

Detailed drawing of climbing shoe





■ The guide to accident prevention

- When dismantling RCS, the work procedure and method written on the work instruction must be followed. Also, safety measures, such as hoisting the work platform to a tower crane, should be taken to prevent any unexpected occurrences of accidents such as falls.

- When assembling or dismantling formwork, only qualified workers are eligible for the work. (In the case of formwork that is being done less than 10 meters above ground, workers with three months or more experience are eligible). When organizing a work group, make sure that workers who have completed vocation training in the respective area or experienced workers handle the tasks.

※ The guide includes all the necessary technical methods to prevent future accidents of the same or similar types. Therefore, details of this report may differ from that of the actual accident.