

# 2011년 New & Upgrade Information Seminar

## ASTM Standards & Digital Library



**IEEE**

**Authorized Dealer in Korea**

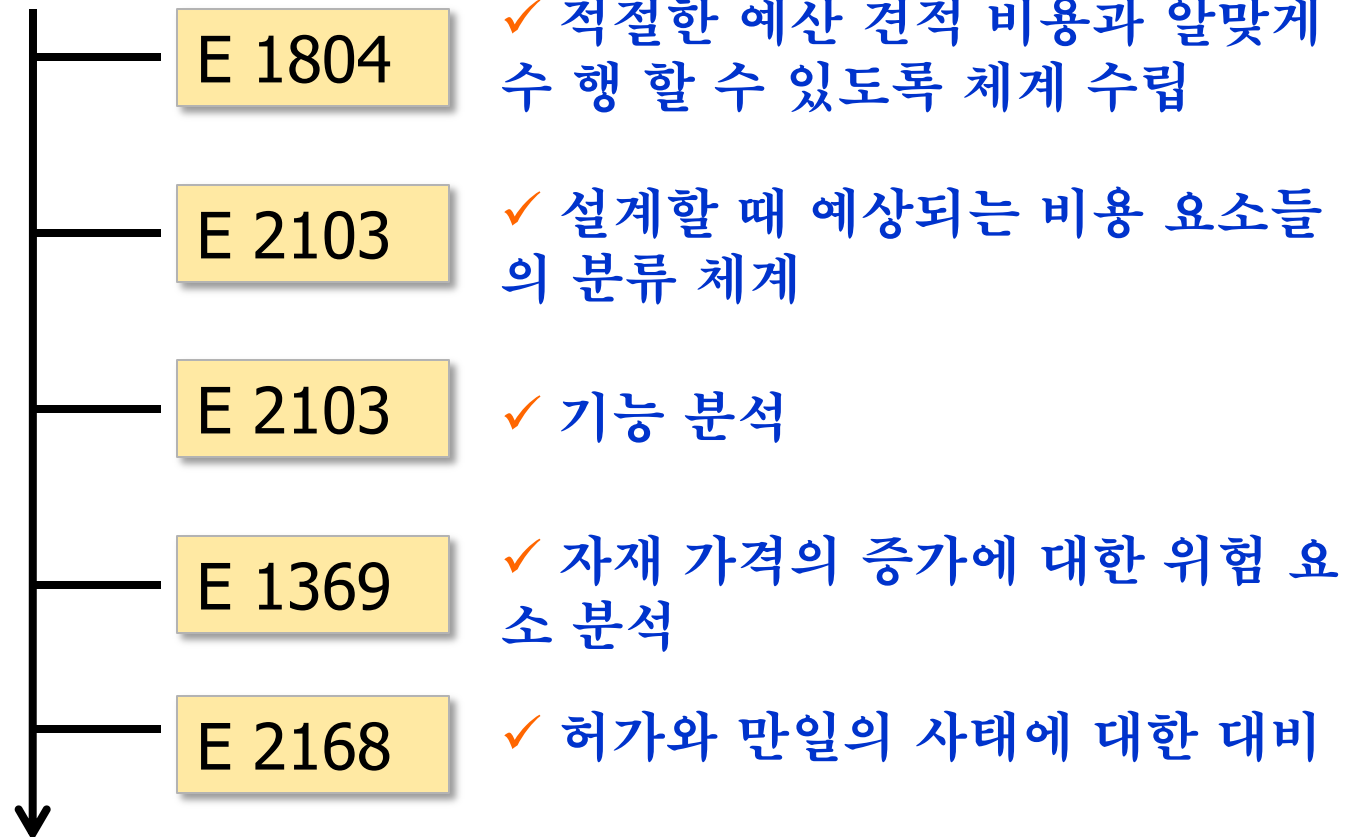


**키티스産學研情報社**  
KITIS Info. Company

# ASTM –Case Studies



Muthiah Kasi PE, SE, CVS (Life) is the chief operations officer of Alfred Benesch & Company in Chicago, Illinois. He is a member of ASTM Committee E06.81. Kasi leads all of Benesch's

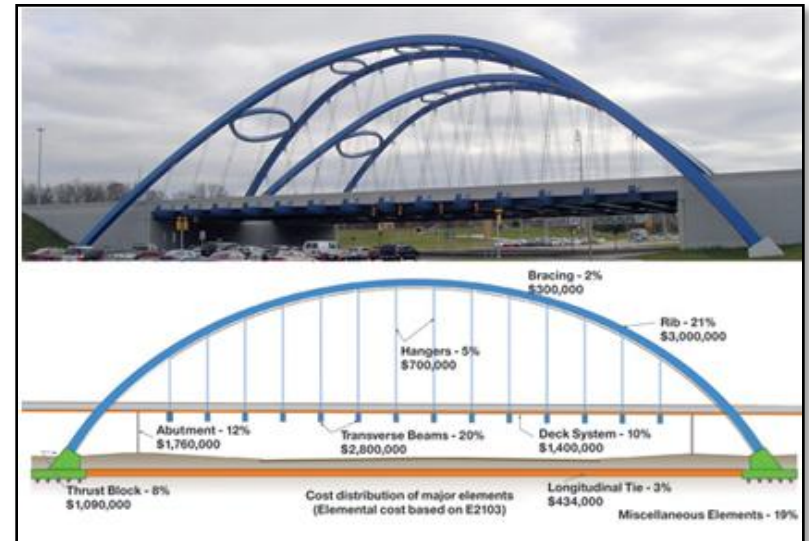


# ASTM –Case Studies



✓ \$1.1- Billion Roadway Reconstruction

✓ Modified Tied-Arch Bridge



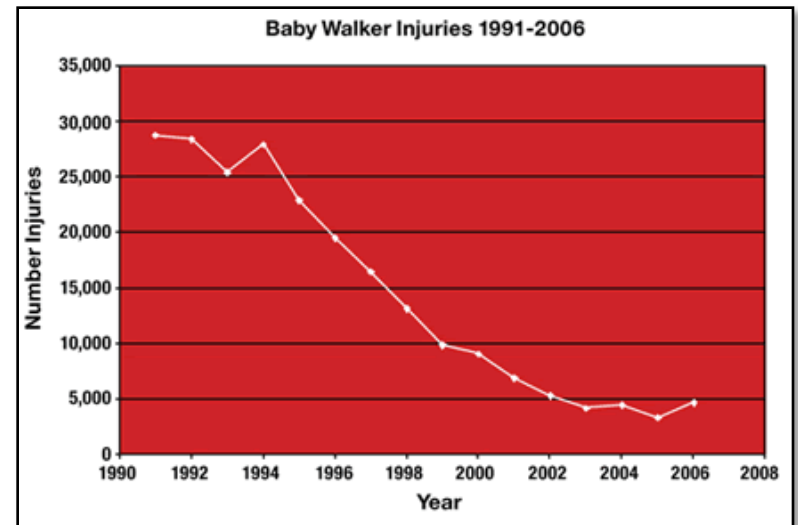
# ASTM –Case Studies



✓ Baby Walker

✓ 1973년도 보행기 사고 급증

✓ ASTM F977 채택 후 감소



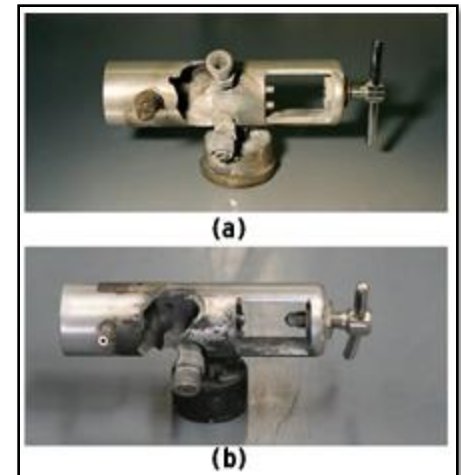
# ASTM –Case Studies



✓ Post-incident condition of ambulance from Aug. 27, 1998, fire

✓ ASTM G175

✓ Preventing Oxygen Equipment Fires



# ASTM –Case Studies

## Steel Core Wire 관련 규격

- ✓ 전기전송효율을 극대화 할 수 있는 전달케이블(Transmission Cable) 관련 규격
- ✓ ASTM B957, B958



# ASTM –Case Studies

## Hand Sanitizers 관련 규격

- ✓ ASTM E35.15 위원회에서 손 살균제와 관련된 규격인 ASTM E 2755를 개발
- ✓ 손 살균제 사용시 박테리아가 제거되는 정도와 효과의 새로운 표준 기준, 성분에 대한 실험방법 제공





# ASTM –Case Studies

## 친환경 페인트 관련 규격

- ✓ ASTM D01.57 위원회에서 친환경 페인트 관련 규격인 ASTM D 7355를 개발
- ✓ 친환경 페인트 개발 이외에도 산업페인트의 친환경적인 폐기물처리 표준기준과 예술가, 미술교사, 학생 등이 사용한 미술재료의 안전한 폐기방법 제공





# ASTM International Campus



**Dean Alberson spoke about the use of standards in testing vehicle crash barriers at the University of Southern Florida**

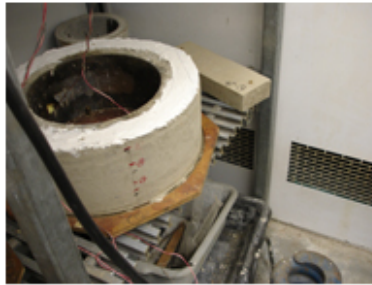
As ASTM International's Year of the Student continues, Dean Alberson, assistant agency director, Texas Transportation Institute, and a member of ASTM International Committee F12 on Security Systems and Equipment, and Joseph Hugo, manager, ASTM, met with 30 students at the University of Southern Florida School of Civil and Environmental Engineering. The meeting took place Oct. 30 in conjunction of ASTM International's October Committee Week in Tampa, Fla.

Alberson, a task group chair within Subcommittee F12.10 on Systems, Products and Services, spoke on the use of standards in the testing of vehicle crash barriers. Crash barriers have become increasingly important in domestic security and the security of sovereign installations around the world. A new test method, ASTM F2656-07 Standard Test Method for Vehicle Crash Testing of Perimeter Barriers, provides a range of vehicle impact conditions, designations, and penetration performance levels. Alberson's presentation also included high-speed video footage of crash tests. Also during the program, Hugo discussed the student membership program at ASTM and the use of standards in the fields of structural, civil and environmental engineering. Hugo said that the students responded enthusiastically to the presentation. For more information of ASTM International's Year of the Student, visit the "ASTM Campus" section of the ASTM Web site ([www.astm.org](http://www.astm.org)).

## Southern Florida 토목,환경공학과

- ✓ ASTM test method를 이용하여 vehicle crash barriers를 연구, 개발
- ✓ ASTM F2656-07이용

# ASTM International Campus



On March 2, 2007 Dr. Tony Fiorato was joined by ASTM International staff members Ileane Smith and Teresa Cendrowska for an educational event to engineering students at Northwestern University's Center for Advanced Cement-Based Materials (ACBM).

Before the event, Raissa Douglas-Ferron, a research assistant at the Center and the inaugural winner of the ASTM Bryant and Katherine Mather Scholarship led a tour of the ACBM laboratory. Mrs. Douglas-Ferron is currently pursuing her doctoral degree with a focus on (SCC) Self-Consolidating Concrete and cementitious materials. The highlight of the tour was the room filled with specimens of concrete, used in a dam construction project in China, that were being tested for crack growth.

Tony Fiorato, the 2006 Chairman of ASTM's Board of Directors and current President and CEO of CTL Group in Skokie, IL, engaged the over twenty post-graduate students with examples of real world applications of standards within the framework of the construction industry. Tony is an active member of ASTM Committees C01 on Cement and C09 on Concrete and Concrete Aggregates.

## Northwestern University

- ✓ Advanced Cement-Based Materials (ACBM) LAB.
- ✓ 중국 댐 건설 프로젝트에 적용될 시멘트 시편 실험에 ASTM을 적용

# ASTM International Campus

## ASTM International visits Rensselaer Polytechnic Institute

Hugh Casper, from ASTM International Committee E28 on Mechanical Testing, presented information on standards and involvement in the development process to approximately 20 undergraduate engineering students during their class in the Materials Research Center. Accompanying Casper on the trip were ASTM staff members Ileana Smith and Jim Olshefsky. The students were juniors and seniors enrolled in the Mechanical Properties of Materials Course taught by Dr. Linda Schadler, Professor of Materials Engineering at RPI.



## Rensselaer Polytechnic Univ.

✓ 재료공학부 학생들의 수업시간, 실험 시간에 ASTM 규격을 적용하여 활용

# ASTM International Campus



**Chang Wook Kang,**  
Ph.D., is professor,  
Department of  
Information and  
Industrial  
Engineering,  
Hanyang University,

## Creating a Standards Curriculum in the Republic of Korea

**How did the standards education initiative begin at Hanyang University's Ansan Campus?**

I had been working with the Korean Standards Association and their Six Sigma education team to begin teaching Six Sigma to my students. Around this time I attended the Second Networking Conference on Industrial Standards Activities Promotion in Korea and became fascinated by the impact of standards on engineering. When I was visiting the United States in February 2004, I met with Donald Purcell and Dr. William Kelly of Catholic University to benchmark the standardization education courses that had been held at Catholic. This was on behalf of the Korean Standards Association, and through the assistance of Teresa Cendrowska, director of external relations at ASTM International, whom I'd met at the conference.

From my conversation with Mr. Purcell and Dr. Kelly, I understood more fully that standards education is necessary for engineering students. Since standards are very important to the enhancement of technology, engineers need to study standards from the design stage to the certification stage. "Commanding an international standard commands the world" and "The level of a nation's compliance to standards is a barometer of its competitiveness" are well-known axioms about the importance of standards.

## Hanyang University.

- ✓ ASTM 협회의 조언과 도움으로 Standard Curriculum 편성
- ✓ 엔지니어가 되었을 때 제품의 설계 인증단계에서 규격의 적용은 기본
- ✓ 공과생들에게 규격의 교육은 필수





**ASTM은 우리 생활 속 가까이에 있습니다.**



# Consumer Product

**Toy safety**  
**Vacuum cleaner system**  
**Sports equipment**



# Energy

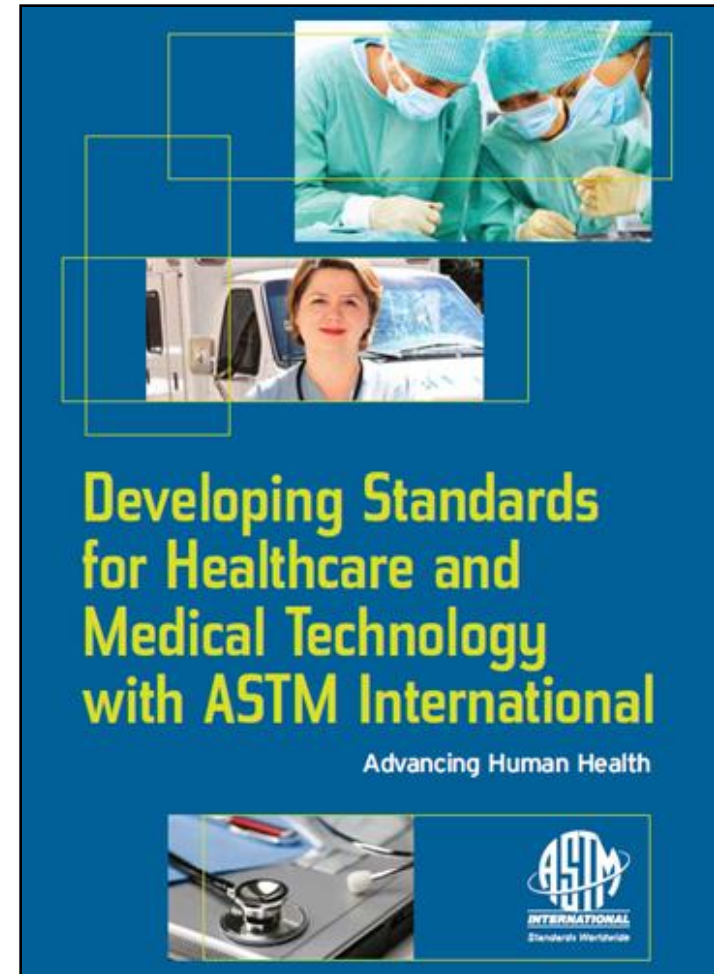


**Petroleum std.**  
**Aviation/Automobile fuel**  
**Alternative fuel**  
**Biodiesel**  
**Nuclear energy**



# Medical Technology

**Surgical device**  
**Biomedical product**  
**Drug container**  
**Packaging material**



# Construction



**Building Code**  
**Cement, Concrete, Wood,**  
**Glass**  
**Building Safety,**  
**Performance**

# Metal Industry

**Steel, Stainless steel**  
**Iron casting**  
**Magnetic property**  
**Electrical conductor**  
**Metal powder**



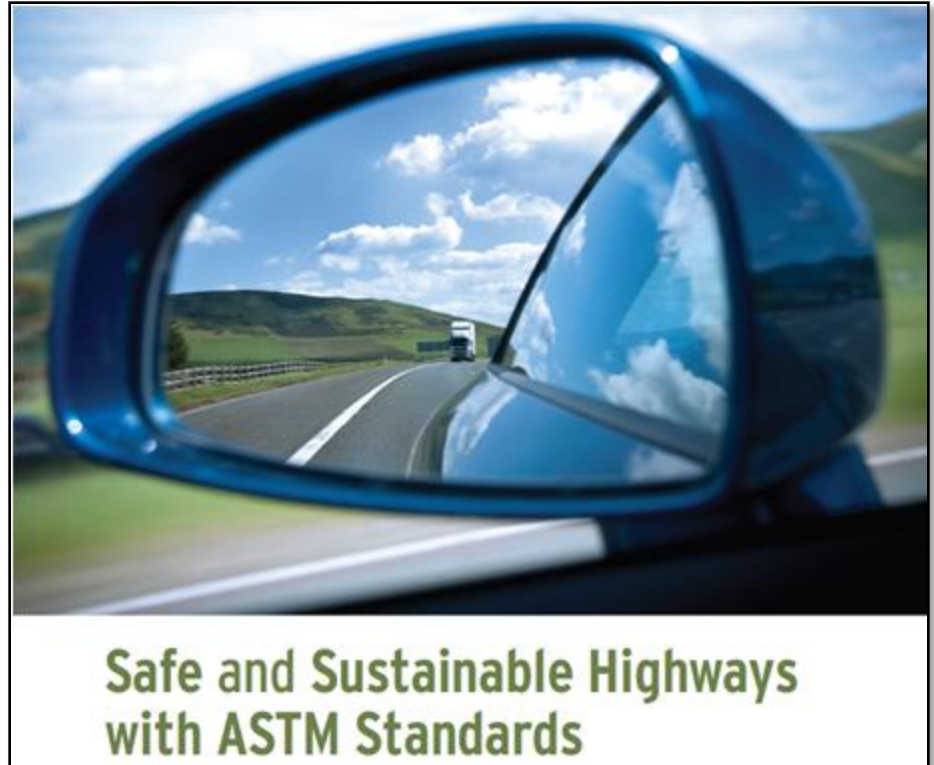
# Clean Energy



**Solar power**  
**Geothermal energy**  
**Biomass energy**  
**Hydrogen**

# Safety

**Road Safety**  
**Stronger Bridge**  
**Highway maintenance**





# ASTM Overview

- 1898년 설립, Philadelphia에 본부 소재, 지구상에 생산되는 모든 제품의 재질의 실험을 통한 실험 데이터를 제공



- Charles Benjamin Dudley
  - One of the founders of the ASTM
  - President of the ASTM(1902-1908)

# ASTM Overview

- 1898년 A1(Steel) committee 설립
- 1902년 C1(Cement) committee 설립
  - 날씨에 따른 cement의 영향 분석, 표준 개발
  - Ambassador Bridge(1929년 완공)
  - 강철, 시멘트, 콘크리트 등 ASTM규격 적용





# ASTM Overview

## B01 on Electrical Conductors



- 1909년 B1(Electrical Conductors) committee 설립
  - General Electric
  - 전기 산업부분에 ASTM 규격 사용의 선구자

## E07 on Nondestructive Testing



- 1938년 E7(Nondestructive Testing) committee 설립
  - X-Ray에 대한 표준 제시
  - 항공기 제조사에서 많은 사용

# ASTM Overview

- 1950년대에 자동차 여행증가, 새로운 고속도로 건설
  - 도로 건설 관련 대부분 ASTM 규격 사용
- 1960년대의 힘든 건설 계획에 적용
  - Seattle's Space Needle.(ASTM A36)



# ASTM Overview

## F08 on Sports Equipment and Facilities



### ■ 1969년 F8(Sports Equipment and Facilities)committee설립

- 1971년도에 football 헬멧에 대한 표준 테스트 방법 제정
- 아이스하키 장비 등에 적용



### ■ Statue of Liberty

- 외피는 구리, 내부 골격은 강철로 만들어짐
- 100년 동안 부식
- ASTM corrosion standards 이용 1986 복구

# ASTM Overview

- EPA (미 환경보호국)에서는 전기, 석유 테스트, 물 등의 규격을 제정하는데 ASTM 규격을 이용



- ISO도 강철, 석유, 공업 생산품 등의 국제 표준을 위해 ASTM 규격 이용

## 원자력-철강-소비자제품 한·美 ‘ASTM 표준’ 논의

2010-04-16 08:21



우리나라 원자력발전 기술이 국제표준으로 제정될 수 있도록 정부가 후방 지원에 나선다.

지식경제부 기술표준원은 16일 오전 10시 서울 삼성동 코엑스에서 미국 재료시험협회(ASTM) 소속 전문가가 참여하는 워크숍을 개최했다. 기술표준원 관계자는 “이번 회의는 한국의 아랍에미리트(UAE) 원자력발전소 건설 수

한편 ASTM은 금속, 석유, 섬유 등 90여개 산업부문 1만2000여개 표준을 보유한 기관이다. 국내 철강, 석유, 화학, 생활용품, 섬유 분야는 ASTM 표준을 많이 활용하고 있다. 철강, 석유, 섬유, 화학 등 소재부문에선 국제 표준화기구(ISO) 이상의 권위를 갖고 있는 것으로 평가된다.

이날 원전전문가로 ASTM 이사회 의장을 맡고 있는 로저 스톨러 박사가 미국 원전 ‘AP 1000’ 기종에 적용되는 ASTM 표준을 소개했다. 우리나라 원전기술의 ASTM 표준지정 추진방안도 논의됐다. 또 포스코의 신(新) 스테인레스강, 대창의 친환경 무연황동 등 ASTM 표준 채택·제안 사례가 발표되기도 했다.

기술표준원 당국자는 “이번 워크숍은 우리 기업·전문가가 수동적 표준 사용자(Taker) 관점에서 적극적 표준 제정자(Maker) 입장으로 전환하는 계기가 될 것”이라고 기대감을 표시했다.

한편 ASTM은 금속, 석유, 섬유 등 90여개 산업부문 1만2000여개 표준을 보유한 기관이다. 국내 철강, 석유, 화학, 생활용품, 섬유 분야는 ASTM 표준을 많이 활용하고 있다. 철강, 석유, 섬유, 화학 등 소재부문에선 국제 표준화기구(ISO) 이상의 권위를 갖고 있는 것으로 평가된다.

# ASTM Standards

- ASTM 규격은 30,000+ 회원들의 합의된 원칙 내에서 개발, 발전
- ASTM Standards include :
  - Product specifications
  - test methods
  - practices
  - guides
  - terminology





# ASTM Standards

- Metals (금속) - Active Standards 2,413종
- Construction (건설) - Active Standards 3,262종
- Paint (도료) - Active Standards 752종
- Petroleum (석유) - Active Standards 892종
- Plastics (플라스틱) - Active Standards 680종
- Textiles (직물, 섬유) - Active Standards 345종
- Rubber & Electric Insulation (고무, 전기 절연체) - Active Standards 741종
- General Test Methods (일반 테스트) - Active Standards 1,911종
- Miscellaneous (기타) - Active Standards 1,170종





# ASTM Standards

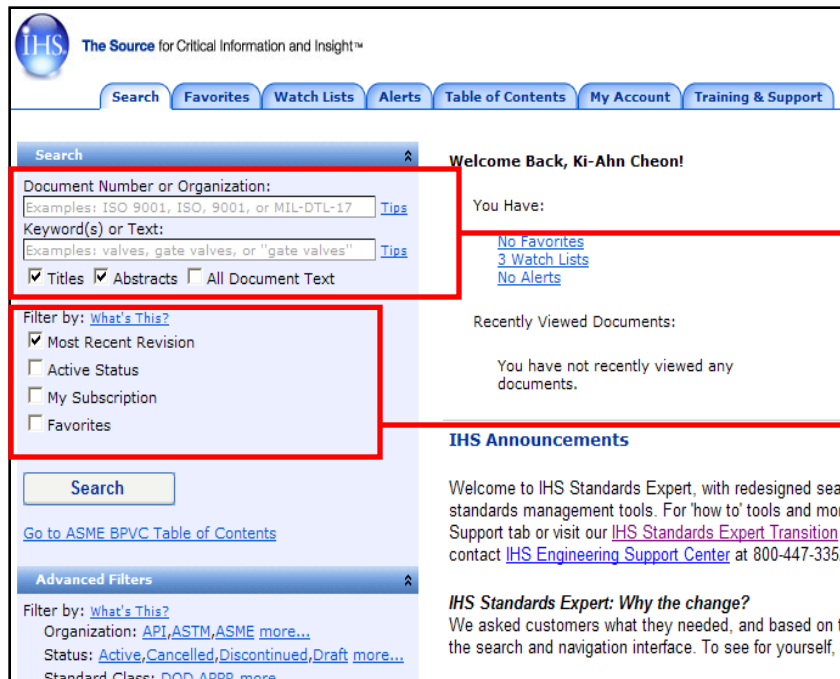
- **A** : 철강, 주물, 도금 등
- **B** : 비철 금속, 도선, 야금 등
- **C** : 시멘트, 세라믹스, 바닥재, 유리 등
- **D** : 페인트, 종이, 석유 류, 고무, 플라스틱 등
- **E** : 금속 관련 시험 방법 등
- **F** : 특정 용도의 재료
- **G** : 금속의 부식, 피로, 열화 등
- **PS** : 잠정 규격

예) ASTM **B**424

# ASTM Standards

- 370여 개의 규격 개발 기관(SDO : Standard Development Organizations)에서 발행되는 산업기술 규격 INDEX 통합 검색
- 빠른 Update를 통한 최신 기술 자료 습득
- 다양한 필터 기능으로 검색 속도 향상

# ASTM Standards



The screenshot shows the IHS Standards Expert website. The top navigation bar includes links for Search, Favorites, Watch Lists, Alerts, Table of Contents, My Account, and Training & Support. The main content area is divided into two columns. The left column contains a search section with a 'Search' button, a 'Document Number or Organization' field (with examples: ISO 9001, ISO, 9001, or MIL-DTL-17), a 'Keyword(s) or Text' field (with examples: valves, gate valves, or "gate valves"), and checkboxes for 'Titles', 'Abstracts', and 'All Document Text'. Below this is a 'Filter by' section with a 'What's This?' link and checkboxes for 'Most Recent Revision', 'Active Status', 'My Subscription', and 'Favorites'. At the bottom of the left column is an 'Advanced Filters' section with a 'What's This?' link and links for 'Organization', 'Status', and 'Standard Class'. The right column contains a 'Welcome Back, Ki-Ahn Cheon!' message, a 'You Have:' section with links for 'No Favorites', '3 Watch Lists', and 'No Alerts', a 'Recently Viewed Documents' section with a message 'You have not recently viewed any documents.', and an 'IHS Announcements' section with a welcome message and a link to 'IHS Standards Expert: Why the change?'.

✓ Doc No., Org, Keyword 검색

✓ 다양한 필터 기능으로 검색 속도 향상

# ASTM Digital Library

## ■ ASTM Digital Library란?

ASTM에서 저작권을 보유한 STPs, Manuals, Journals등의 출판물을 인터넷을 통해 원문을 이용하는 서비스

## ■ ASTM Digital Library의 제공 범위

- 950+ Special Technical Publications
- 50+ Manuals and Monographs
- 13,000+ Journals Articles
- 430,000 Pages of Technology

Standards committees offer one of the richest development environments anywhere.



# ASTM Digital Library

## ■ Special Technical Publications

- STP는 최신의 연구를 반영한 technical paper
- 새로운 기준을 이끌어내는 기술과 개발에 대한 통찰력을 제공
- ASTM 내 140여 Committee (기술위원회)가 후원한 심포지엄에  
근간
- Environment, Petroleum, Metals, Construction,  
Geotechnical Engineering등 다양한 학술 자료 제공
- 950+ books, 약 19000 papers 포함

ASTM Standards and  
Engineering Digital Library




# ASTM Digital Library

## ■ Manuals

- 안내서와 배경 정보 제공
- 일부 자료는 ASTM Standards가 왜, 어떻게 만들어졌는지 개발 배경 제공
- 실험 수행에 유용한 tips제공

## ■ Monographs

- 수준 높은 전문가를 위한 이론서
- 주요하거나 되짚어 볼만한 것들을 집중 조명하여 수준 높은 자료 제공



Make ASTM standards a valuable part of your teaching curriculum.

# ASTM Digital Library

- JAI(Journal of ASTM International)
  - 재료의 성능과 특징, 넓은 범위의 주제가 포함된 최신의 기술 자료
  - 토목, 화학, 원자력, 환경, 의학, 안전등
  
- GTI(Geotechnical Testing Journal)
  - 지질 공학에 관련된 자료



# ASTM Digital Library

- JOTE(Journal of Testing and Evaluation)
  - 실험을 통해 얻은 측정된 결과, 재료의 평가 등이 포함된 최신의 기술정보 제공
  - 건설 재료, 금속, 지질공학 재료, 고무 등
- JOFS(Journal of Forensic Sciences Historical back file 1972~2005)
  - 인류학, 범죄/법리학, 독극물 등 법의학과 관련된 195건의 발표 물과 7,000개 이상의 문서 제공



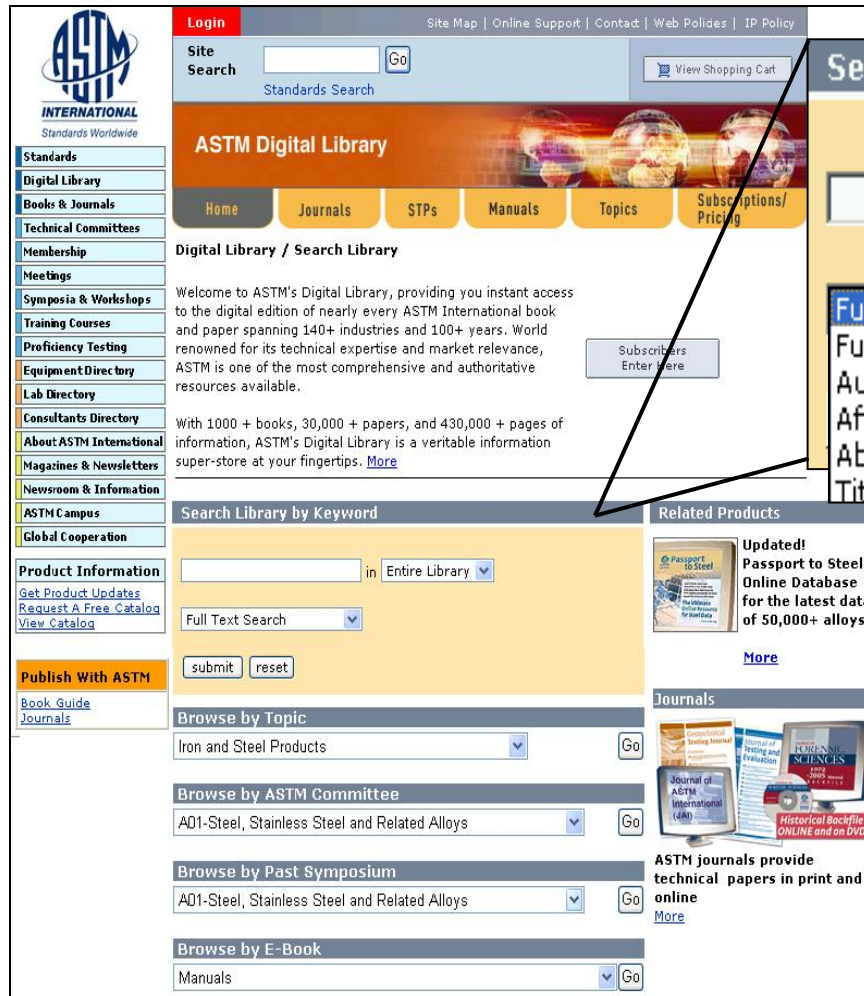
# ASTM Digital Library

- JCTR(Journal of Composites, Technology and Research)
  - 각종 합성물질의 기술과 연구자료를 제공.
  - 2003년10월 호 까지 제공
  
- CCA(Journal of Cement, Concrete and Aggregates)
  - 시멘트,콘크리트,골재등과 관련된 물질적 특성 등의 기술자료 제공.
  - 2004년12월 호 까지 제공

Journal of Composites Technology and Research

Journal of Cement, Concrete and Aggregates

# ASTM Digital Library



The screenshot shows the ASTM Digital Library homepage. At the top, there's a navigation bar with links like 'Login', 'Site Map', 'Online Support', 'Contact', 'Web Policies', and 'IP Policy'. Below this is a search bar with a 'Go' button and a 'View Shopping Cart' link. The main header features the 'ASTM Digital Library' title and a navigation menu with 'Home', 'Journals', 'STPs', 'Manuals', 'Topics', and 'Subscriptions/Pricing'. A large banner area contains a welcome message and a 'Subscribers Enter Here' button. On the left side, there's a vertical menu with various categories like 'Standards', 'Digital Library', 'Books & Journals', etc. The bottom section includes a 'Search Library by Keyword' form with a dropdown for 'Entire Library' and a 'Full Text Search' button. Below the search form are sections for 'Browse by Topic', 'Browse by ASTM Committee', 'Browse by Past Symposium', and 'Browse by E-Book'. A 'Related Products' section on the right highlights an 'Updated! Passport to Steel Online Database'.

## Search Library by Keyword

in **Entire Library**  
STPs  
Journals  
Manuals

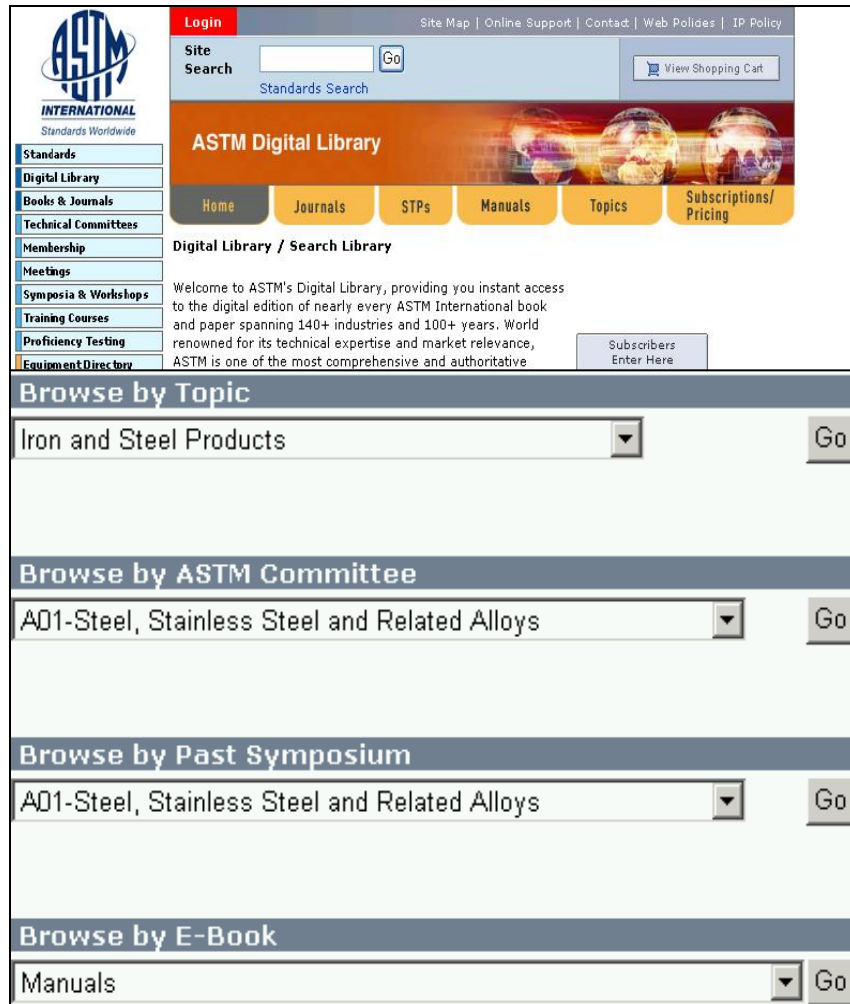
**Full Text Search**  
Full Bibliographic Record  
Author  
Affiliation  
Abstract  
Title

## 1. Keyword 검색

ASTM-DL 전체, 혹은 STPs, Journals, Manuals  
을  
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# ASTM Digital Library



The screenshot shows the ASTM Digital Library website. At the top, there is a navigation bar with links for Login, Site Map, Online Support, Contact, Web Policies, and IP Policy. Below this is a search bar with a 'Go' button and a 'View Shopping Cart' button. The main header features the ASTM logo and the text 'ASTM Digital Library'. A horizontal menu bar contains links for Home, Journals, STPs, Manuals, Topics, and Subscriptions/Pricing. The left sidebar lists various categories: Standards, Digital Library, Books & Journals, Technical Committees, Membership, Meetings, Symposia & Workshops, Training Courses, Proficiency Testing, and Equipment Directory. The main content area welcomes users to the digital library and provides a brief overview of the collection. Below this, there are four sections for browsing: 'Browse by Topic' (with a dropdown menu showing 'Iron and Steel Products'), 'Browse by ASTM Committee' (with a dropdown menu showing 'A01-Steel, Stainless Steel and Related Alloys'), 'Browse by Past Symposium' (with a dropdown menu showing 'A01-Steel, Stainless Steel and Related Alloys'), and 'Browse by E-Book' (with a dropdown menu showing 'Manuals'). Each section has a 'Go' button next to the dropdown menu.

## 2. Browse검색

-by Topic

15개 주요 산업분야별로 검색

-by ASTM Committee

140여 ASTM 기술위원회별로 발행한 자료 검색

-by Past Symposium

지난 Symposium을 선택하여 해당 STPs 검색

-by E-book

Journals, STPs, Manuals별로 선택하여 검색

# ASTM Standards & DL - Testimonials

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전남대, 충남대, 한양대, 홍익대, 울산과학기술대  
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# 2011년 New & Upgrade Information Seminar

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