

# SunSpots®

*Fall 2015*

## Weathering Durability of Architectural Materials

*By Scott Zimmerman, Sales Manager, Atlas Weathering Services Group,  
Atlas Material Testing Technology LLC*

Architecture plays an essential role in societies around the world today. It can be argued that the development of temporary structures more than 30,000 years ago [1] led to the development of modern society. The practice of designing and constructing basic dwellings of mud or straw (Figure 1) allowed mankind to shift from migrating hunter-gatherer societies to farming societies with permanent settlements. Thus, architecture was born.



*Figure 1*

From its humble beginnings, architecture has become a manifestation of mankind's technical prowess, power, and artistic flair. This can be observed throughout antiquity: the cliff dwellings of the Southwestern United States, the Egyptian pyramids, the Mayan cities of Chichen Itza and San Bartolo, the Colosseum of Rome, the Taj Mahal of India, and the mountain Incan fortress of Machu Picchu all stand the test of time of man's relationship with architecture. In modern times, we often identify cities by their signature structures — the White House, the Louvre, Buckingham Palace, Sydney's Opera House, Shanghai's Pearl Tower.

The same manifestation (or fascination) holds true for individual residences, demonstrated by the English proverb: "A man's home is his castle." This proverb

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Materials Durability  
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## Keep Your Team Up to Date!

### Fundamentals of Weathering I

**NEW LOCATION**

October 21, 2015	Ghent, Belgium	Presented in Dutch
October 27, 2015	Boras, Sweden	Presented in English
November 3, 2015	Istanbul, Turkey	Presented in English
November 24, 2015	Hildesheim, Germany	Presented in German
March 9, 2016	Phoenix, AZ, USA	Presented in English
April 20, 2016	Mount Prospect, IL, USA	Presented in English
June 21, 2016	Bamberg, Germany	Presented in German
July 13, 2016	Mount Prospect, IL, USA	Presented in English
September 27, 2016	Olten, Switzerland	Presented in German
October 5, 2016	Mount Prospect, IL, USA	Presented in English
November 16, 2016	Dresden, Germany	Presented in German

### Fundamentals of Weathering II

**NEW LOCATION**

October 22, 2015	Ghent, Belgium	Presented in English
October 28, 2015	Boras, Sweden	Presented in English
November 4, 2015	Istanbul, Turkey	Presented in English
November 25, 2015	Hildesheim, Germany	Presented in German
March 10, 2016	Phoenix, AZ, USA	Presented in English
April 21, 2016	Mount Prospect, IL, USA	Presented in English
June 22, 2016	Bamberg, Germany	Presented in German
July 14, 2016	Mount Prospect, IL, USA	Presented in English
September 28, 2016	Olten, Switzerland	Presented in German
October 6, 2016	Mount Prospect, IL, USA	Presented in English
November 17, 2016	Dresden, Germany	Presented in German

### Weather-Ometer® Workshop

April 19, 2016	Mount Prospect, IL, USA	Presented in English
April 19–20, 2016	Linsengericht, Germany	Presented in German
July 12, 2016	Mount Prospect, IL, USA	Presented in English
September 20–21, 2016	Linsengericht, Germany	Presented in German
October 4, 2016	Mount Prospect, IL, USA	Presented in English

### Xenotest® Workshop

April 12–13, 2016	Linsengericht, Germany	Presented in German
September 13–14, 2016	Linsengericht, Germany	Presented in German

### SUNTEST Workshop

April 15, 2016	Linsengericht, Germany	Presented in German
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### Technical Seminar – Automotive Weathering Testing

November 5, 2015	Bursa, Turkey	Presented in English
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For the latest course offerings or to register for a course, please visit [www.atlasmtt.com/courses](http://www.atlasmtt.com/courses).



**ITMA 2015**

November 12–19, 2015  
Milan, Italy  
Hall 7, Stand H113

**CHINACOAT 2015**

November 18–20, 2015  
Shanghai, China  
Booth #E3.A63-64

**Empack Belgium**

November 25–26, 2015  
Brussels, Belgium  
Booth #D200

**PMEC India**

December 1–3, 2015  
Mumbai, India  
Booth #027

**PAINTINDIA 2016**

January 21–23, 2016  
Mumbai, India  
Booth #S3

**American Coatings Show 2016**

April 12–14, 2016  
Indianapolis, Indiana, USA  
Booth #2476

**in-cosmetics 2016**

April 12–14, 2016  
Paris, France  
Booth #S99



Visit Atlas' booth at these shows to learn about the latest weathering developments and how we can help advance your testing program.

*For a complete list of Atlas shows, visit  
<http://atlas-mts.com/news-events/trade-shows/>*

**Asia Coatings Congress**

May 19–20, 2016  
Marina Bay Sands, Singapore  
Booth #E04

**Automotive Testing Expo China**

September 27–29, 2016  
Shanghai, China  
Booth #3012

**Asia Pacific Coatings Show**

September 21–23, 2016  
Bangkok, Thailand  
Booth #D35

**K Show 2016**

October 19–26, 2016  
Düsseldorf, Germany

**Conference on Environmental Influences on Products**

October 29–30, 2015  
Hotel Arte  
Olten, Switzerland

“The Importance of Specific Surface Temperature for the Planning and Evaluation of Artificial Weathering Tests”

*Presenter: Dr. Artur Schönlein,  
Atlas Material Testing Technology GmbH*

**Atlas/NIST Workshop on Photovoltaic Materials Durability**

December 8–9, 2015  
NIST Headquarters  
Gaithersburg, MD, USA

“Applying the Fundamental Principles of Weathering to Environmental Durability Testing of PV Backsheets”

*Presenter: Mr. Kurt Scott,  
Atlas Material Testing Technology LLC*



actually dates back to ancient Roman times where it was stated by Cicero: “What more sacred, what more strongly guarded by every holy feeling, than a man’s own home?” [2]



*Figure 2*

Modern expectations demand that architecture keep us safe from the environment in comfortable, energy-efficient conditions. We expect our structures to be physical extensions of what we do and who we are as well as maintain their beauty and integrity for a very long time. This is truly a tall order.

Who, then, will ensure our structures are designed to meet these monumental expectations? In order to answer this complex question, we must first understand the products and materials utilized in a building envelope.

Architectural materials can be split into exterior and interior (Figure 2). Following are some of the main groupings of exterior and interior products utilized in today’s structures. They range from structural/functional to decorative.

## ***Exterior***

- » **Fenestration** – Windows, doors, and skylights (aluminum, wood, wood composites, vinyl and fiber reinforced thermoset profiles)
- » **Facade** – Exterior siding and cladding (aluminum, steel, wood, vinyl, geotextiles, and cementitious materials)
- » **Roofing** – Shingle, tile, membrane, metal, and liquid
- » **Supplemental** – Paints, coatings, plastics, adhesives, flashing, and hardware
- » **Energy Efficiency** – Building-integrated photovoltaics (BIPV), glass, paint, and coatings
- » **Structural Framing** – Wood, steel, aluminum, and concrete
- » **Decking and Railing** – Wood and wood composites, steel, aluminum, and PVC

## ***Interior***

- » **Ceiling** – Tile, wood, gypsum (fiberglass, wood and wood composites, decorative metals, and gypsum board)
- » **Flooring** – Carpet, wood, wood composite, tile, stone, concrete, and laminates
- » **Interior Wall** – Wood, tile, gypsum, stone, and concrete
- » **Supplemental** – Paints, coatings, and plastics
- » **Structural Framing** – Wood, steel, aluminum, and concrete
- » **Railing** – Wood and wood composites, decorative metals, and PVC

It is the burden of industry-focused organizations, government agencies, standardized testing organizations, architectural material manufacturers, and testing laboratories to develop and maintain material-specific durability requirements, conduct testing per these requirements, and govern compliance.

Such method-defining organizations include:

- ASTM International
- ISO (International Organization of Standardization)
- AAMA (American Architectural Manufacturers Association)
- WDMA (Window and Door Manufacturers Association)
- NAFS (North American Fenestration Standard)
- NGA (National Glass Association)
- IEC (International Electrotechnical Commission)
- CRRC (Cool Roof Rating Council)
- NRCA (National Roofing Contractors Association)
- VSI (Vinyl Siding Institute)

The above organizations work with consumer, industry, and governing bodies to develop standardized test methods that address safety and product performance. The methods define performance in terms of both mechanics/function and aesthetics; not only do we expect our homes and buildings to withstand the test of time in terms of functionality, but we also want them to continue to look new.

There are many test methods designed to gauge the performance of architectural products at the material, component, and system level. Factors of weathering such as sunlight, moisture, and temperature play an important role in material performance, as typical durability expectations often extend beyond 10, 20, or 40 years.

Many of the above industry standards organizations provide test methods to determine the long-term weathering durability of architectural materials through various testing options. Let's investigate some of the weathering durability testing options available for architectural materials.

## Natural Outdoor Testing Options

Here are a few examples:

### AAMA

AAMA requires 1-year, 5-year, and 10-year (45° facing south) outdoor South Florida exposure testing for its finishes over aluminum (AAMA 2603, 2604, and 2605) fiber-reinforced thermoset (AAMA 623, 624, and 625), and vinyl profiles (AAMA 613, 614, and 615). AAMA 613 requires an additional breakdown of 6-month, 1-year, and 2-year exposure.

### CRRC

CRRC requires 3-year outdoor testing in Miami, Phoenix, and Ohio (Subtropical, Desert, and Temperate) climates.



Figure 3: Samples on outdoor exposure racks at Atlas' South Florida Test Site



Figure 4: Atlas MTT Desert Exposure Site – Phoenix, AZ



Figure 5: Atlas MTT Subtropical Exposure Site – Miami, FL

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## VSI

VSI protocol requires 2-year outdoor exposure in Miami, Phoenix, and Ohio.

## Non-Industry Specific

General outdoor weathering standards for architectural materials may include:

- ASTM G7 - Standard Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials
- ASTM D1435 - Standard Practice for Outdoor Weathering of Plastics
- ISO 877 - Plastics - Methods of Exposure to Solar Radiation - Part 2: Direct Weathering and Exposure Behind Window Glass

In weathering durability testing, the two most aggressive primary benchmark climates are hot/arid desert and hot/wet subtropical/tropical environments. Representative exposure locations include Phoenix, AZ (Figure 4) and Miami, Florida (Figure 5).



Figure 6: Atlas Worldwide Exposure Network of Test Sites

It is also common to test entire buildings or functional components (e.g., door and window bucks) at benchmark locations in order to understand how all the elements of a system will behave in concert with one another under the extreme conditions found in outdoor test sites.

Additional testing may be performed at high-altitude, coastal/corrosion, high-latitude temperate, industrial acid etch, or other locations to address concerns associated with specific field environments. Test sites also exist in niche climates throughout the world. Figure 6 provides a list of all Atlas Worldwide Exposure Network (WEN) locations.

Outdoor weathering testing is critical in assessing architectural material performance but cannot be the only option used in weathering durability testing. Because most companies cannot wait five or more years prior to submitting product to the marketplace, there are many accelerated weathering durability test methods designed and prescribed for architectural materials to be performed in parallel with outdoor testing. The goal of accelerated testing is to decrease the time to market by more quickly providing results as close to real world testing as possible (Figure 7).

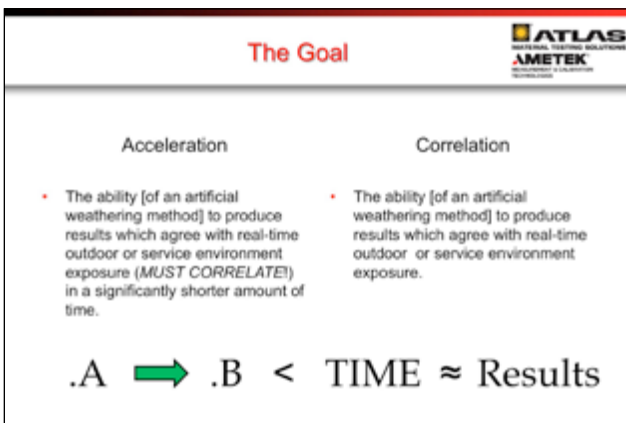


Figure 7

## Outdoor Accelerated Weathering Options

AAMA 623, 624, and 625 allow ASTM G90 Cycle 3 (Standard Practice for Performing Accelerated Outdoor Weathering of Nonmetallic Materials Using Concentrated Natural Sunlight) with nighttime wetting and temperature control as an alternative to the 1-year, 5-year, and 10-year outdoor exposure requirement. Devices such as EMMAQUA® (Figure 8) can provide 1-year, 5-year, and 10-year equivalent energy in as little as 4 months, 12 months, and 24 months, respectively. A more recently introduced outdoor accelerated device such as Ultra-Accelerated EMMAQUA® (Figure 9) can further reduce testing time to 2 months, 6 months, and 12 months, respectively. Its sister technology, Low-Temperature EMMAQUA® (Figure 10), has been successfully introduced for the accelerated weathering of vinyl siding and composite decking. This technology is also used in the roofing and glass industries.

Roofing material and coatings manufacturers have been using the Ultra-Accelerated Weathering System (UAWS) (Figure 11) since 2009 in order to deliver much faster results in order to support long-term durability requirements. The UAWS can deliver up to 63 times the amount of radiation as would be received in the real world. The device uses special patented cool-mirror technology that only reflects the UV and low visible radiation onto the samples. The mirrors allow the infrared energy to pass through, limiting the amount of thermal energy and minimizing concern for unrealistic thermal oxidization. This technology is also deployed on the Ultra-Accelerated and Low-Temperature EMMAQUA®.

## Accelerated Laboratory Weathering Options

This section will address laboratory test methods performed in Xenon weathering devices such as the Atlas Ci5000 Weather-Ometer® and SUNTEST XXL+ (Figure 12).

Here are a few examples:

- » ASTM G155 – Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials
- » ASTM D2565 – Standard Practice for Xenon Arc Exposure of Plastics Intended for Outdoor Applications
- » ASTM D4355 – Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Type Apparatus
- » ASTM D 4798 – Standard Practice for Accelerated Weathering Test Conditions and Procedures for Bituminous Materials (Xenon-Arc Method)
- » ISO 4892-2 - Plastics - Methods of Exposure to Laboratory Light Sources - Part 2: Xenon-arc Lamps
- » ISO 11341 - Paints and Varnishes - Artificial Weathering and Exposure to Artificial Radiation - Exposure to Filtered Xenon-arc Radiation

Special attention must be given to the latest in accelerated weathering methods:

- » ASTM D7869 - Standard Practice for Xenon Arc Exposure Test with Enhanced Light and Water Exposure for Transportation Coatings
- » ASTM D7869 was developed over a 10-year period by companies across industrial lines in an effort to develop a more representative accelerated test method for exterior coatings used in transportation. It recognizes that weathering degradation occurs not only by exposure to the extreme weathering factors of sunlight, moisture, and temperature in a given environment, but also to the unique diurnal cycling that exists in the real world. The method utilizes xenon lamp filters that better replicate light in the UV spectrum as well as provide an improved delivery method of moisture. This



Figure 8: EMMAQUA®



Figure 9: Ultra-Accelerated EMMAQUA®

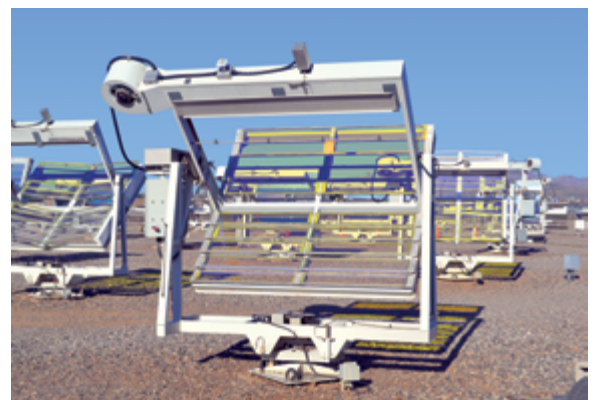


Figure 10: Low-Temperature EMMAQUA®

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*Figure 11: Ultra-Accelerated Weathering System (UAWS)*

method is the most advanced weathering test method to date. Initially created for exterior automotive and traffic coatings, ASTM D7869 is finding other applications in studies for window and door industry finishes and profiles materials.

## Solar Thermal Cycling Options

Considering that architectural materials must withstand all types of environmental stresses such as dust and sand impact, salt, water, temperature changes, freeze-thaw cycles, snow, etc., standard performance methods should be selected based on the stresses seen in field use. The intent is to complement the long-term durability testing at the component level with industry-accepted performance data under single extreme stresses.

Methods for specific stress factors include:

- » Custom methods – Dependent on end-use environment and known failure mechanisms
- » MIL 810 G - Environmental Engineering Considerations and Laboratory Tests Section 505.5
- » IEC 61215 - Crystalline Silicon Terrestrial Photovoltaic (PV) Modules - Design qualification and type approval

Section 10.11 - Thermal Cycling (modified to include light) – applicable to architectural materials

Section 10.12 - Humidity Freeze Cycling (modified to include light) – applicable to architectural materials

Section 10.13 - Damp Heat (modified to include light) – applicable to architectural materials

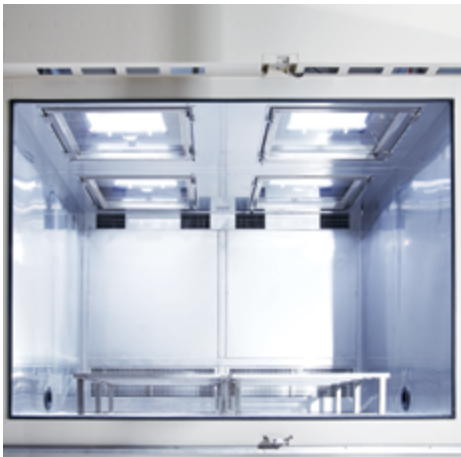


*Figure 12: Ci5000 Weather-Ometer® (rotating rack) and SUNTEST XXL+ (flatbed) in Atlas' Accelerated Weathering Laboratory in Mount Prospect, IL*

## Long-Term Durability Test Program

The long-term durability of architectural materials is influenced by a wide range of end use environments. Additionally, integration of an architectural component, such as a window, into a building affects the value of the building if the component fails. This presents greater challenges in terms of return on investment of architectural materials and components.

Atlas Material Testing Technology has designed a long-term durability testing program to assess an architectural component's life expectancy. The program incorporates a sequence of global testing parameters that address a corrosive environment, a subtropical environment, a temperate freeze/thaw environment, and finally, a desert environment. Additionally, some lot components are tested under benchmark outdoor conditions for baseline data. Performance assessments are established and tested prior to



*Figure 13: Inside view of Solar Environmental Chamber*



testing, during testing, and post testing. A formal report discussing the products' expected lifetime is provided upon completion of the testing program.

This testing allows the option of conducting comparative performance studies with other architectural components of same type.

Architecture is ingrained into the fabric of societies around the world and will continue to be long into the future. Our homes, office buildings, state buildings, and churches are an extension of our very being. Weathering durability testing will continue to play a major role in the design of architectural materials so societies can enjoy our modern marvels for years to come. ■

## References

[1] <http://www.historyworld.net/wrldhis/PlainTextHistories.asp?historyid=ab27>

[2] [https://en.wiktionary.org/wiki/a\\_man%27s\\_home\\_is\\_his\\_castle](https://en.wiktionary.org/wiki/a_man%27s_home_is_his_castle)



## Atlas Weathering Consulting Insights Newsletter Now Available Online

Drawing on decades of weathering leadership and expertise, the Atlas Consulting Group provides in-depth consulting services that assist clients in developing and applying the best weathering test methods and strategies for their products.

Through its Atlas Weathering Consulting Insights newsletter, the group offers insights and information on a variety of topics related to long-term durability testing and shares helpful real-world examples.

Sent to subscribers four times a year, the newsletter is now available on demand through the Atlas website at <http://atlasmtt.com/wci>. You may search and download PDFs from a comprehensive archive of past issues of the newsletter, as well as subscribe to automatically receive future issues via email. ■





## Atlas World Sales Meeting a Success

Atlas' global sales team gathered at our corporate offices in Mount Prospect, Illinois, for a World Sales Meeting in early September. Approximately 100 people from 36 countries participated in this exciting event.

The format for the three-day meeting was a series of 10 technical and sales workshops to further educate the team on the various products and services Atlas offers.

Two guest speakers, Dr. Mark Nichols of Ford Motor Company and Dr. Ken White of 3M Company, gave presentations about the importance of weathering to their companies, followed by a Q&A session with the Atlas global sales team. The information shared by these industry experts was extremely insightful and helped to align our team on important weathering issues.

The meeting kicked off with a cocktail reception and welcome by leaders of Atlas and its parent company AMETEK. Event highlights included a pig roast lunch for meeting participants and Atlas staff, a celebration of Atlas' 100th anniversary, and festivities including the popular Midwestern game Cornhole — a first for some of the international guests!

As a nod to Atlas' Germany-based colleagues, a dinner was held at the Hofbräuhaus Restaurant where guests were treated to an authentic German meal, an assortment of German beers, and a traditional beer stein-holding contest.

The meeting was deemed a great success by participants, both professionally and personally. New knowledge was gained and new friendships formed among Atlas' global sales team and support staff — all preparing us to better serve our customers. ■





# Atlas/NIST to Host 3rd Workshop on Photovoltaic Materials Durability

Gaithersburg, MD, USA » Dec. 8–9, 2015

In response to concerns around durability and reliability of PV materials and modules, Atlas Material Testing Technology and the National Institute of Standards and Technology (NIST) are pleased to host a two-day Workshop on Photovoltaic Materials Durability for the global photovoltaic community. This workshop is distinguished from other PV conferences by its focus on measurement, exposure, and modeling of durability for materials used in solar energy applications.

The Atlas/NIST workshop will feature technical presentations, a poster session, standards discussions, and a NIST facility tour. Participants will hear from and interact with industry experts ranging from material suppliers, module manufacturers, and testing and certification companies to universities and national laboratories. Attendees will not only learn about advanced lifetime test methods, but they will also have an opportunity to engage in open discussions on how to convert advanced research to consensus standards development.

The workshop will specifically address:

- Accelerated weathering
- Materials development
- Advanced test methods
- Fundamental research on degradation mechanism
- Multi-layer adhesion tests and long-term adhesion challenges
- Field performance in different climates
- Modeling and lifetime assessment
- Linkage between accelerated test and field performance
- Correlation of material property with failure mode of modules
- Standards needs

## Poster Session

Workshop attendees are encouraged to share related research in poster format. If interested, please submit an abstract via email to Dr. Xiaohong Gu at [xiaohong.gu@nist.gov](mailto:xiaohong.gu@nist.gov) by November 13, 2015. Your abstract will be featured on the event website. ■

To register for the workshop, please visit [www.atlasmtt.com/atlasnist3](http://www.atlasmtt.com/atlasnist3).

**NOTE: Online registration ends at 5:00 p.m. ET on December 1, 2015. This workshop will be held in English.**



## Speakers and Topics\*

- **Dr. Nick Bosco**, NREL  
Moving the PV Industry to a Quantitative Adhesion Test Method
- **Prof. Reinhold Dauskardt**, Stanford University  
Thermo-Mechanical Degradation Mechanisms Relevant for Field Failures and Solar Lifetimes
- **Ms. Xian Dong**, ShunDe SYSU  
Degradation Study of Fielded PV Modules from Different Institute China Climates in for Solar Energy, China
- **Prof. Roger French**, Case Western Reserve University  
TBD
- **Mr. Bill Gambogi**, DuPont  
TBD
- **Dr. Xiaohong Gu**, NIST  
Accelerated Laboratory Testing Toward SLP of PV Polymeric Components-Reciprocity Study and Spectral UV Wavelength Effect
- **Dr. Michael Köhl**, Fraunhofer ISE  
Backsheet R-R (Sophia Project)
- **Dr. David C. Miller**, NREL  
Degradation in PV Encapsulant Adhesion: An Inter-Laboratory Study
- **Dr. Jan Obrzut**, NIST  
Non-Contact Electrical Characterization of PV Films
- **Dr. Nancy Phillips**, 3M  
PV Component Weathering in IEC Standards – Development and Progress
- **Mr. Kurt Scott**, Atlas MTT LLC  
Applying the Fundamental Principles of Weathering to Environmental Durability Testing of PV Backsheets
- **Dr. Tsuyoshi Shioda**, Mitsui Chemicals, Inc.  
PV Modules Reliability Deployed in Japanese PV Power Plant from Viewpoint of Encapsulant
- **Dr. Kenneth White**, 3M  
Investigating the Impact of Reciprocity on High-Irradiance Weathering Tests
- **Dr. John Wohlgemuth**, NREL  
Use of Field Observations to Assess PV Module Reliability

*\*Speakers and presentations subject to change*

## Organizing Committee

Kurt Scott, Atlas MTT LLC  
George Kelly, IEC  
Xiaohong Gu, NIST

John Wohlgemuth, NREL  
Nancy Phillips, 3M



## Atlas Opens New German Laboratory

Atlas is pleased to announce the expansion of its testing services in Germany with the opening of a new accelerated laboratory at our German headquarters in Linsengericht-Altenhaßlau (LA).

For over 20 years, Atlas' Weathering Services Group has operated a world-class accelerated laboratory in Duisburg, Germany. With customers' growing demand for accelerated testing and our desire to expand into other regions in Germany, opening an additional laboratory at our German headquarters was a logical step.

Our new LA lab offers xenon testing in Atlas Ci4000 Weather-Ometer® and Xenotest® Beta+ units. The facility also has a fully operational evaluations laboratory that offers instrumental color, gloss, and visual evaluations performed by highly experienced Atlas technicians.

The new Linsengericht-Altenhaßlau accelerated laboratory is located at:

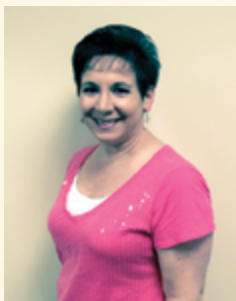
*Atlas Material Testing Technology GmbH  
Vogelsbergstrasse 22  
D-63589 Linsengericht-Altenhasslau  
Germany*

For more information on the LA laboratory or to request a quote from this new site, please contact Andreas Ruth at +49-6051-707-272 or [andreas.ruth@ametek.de](mailto:andreas.ruth@ametek.de).

You may also contact our Duisburg location to request testing at either German laboratory:

*Atlas Material Testing Technology GmbH  
Dr.-Alfred-Herrhausen-Allee 16  
D-47228 Duisburg  
Germany*

Contact Olaf Sucker at +49-2065-7649-0, [olaf.sucker@ametek.de](mailto:olaf.sucker@ametek.de) or [atlas.labor-du@ametek.de](mailto:atlas.labor-du@ametek.de).



## AWSG Welcomes New Sales & Service Coordinator

Atlas Weathering Services Group is pleased to welcome Karen Dellaria to our team as the Sales & Service Coordinator and main contact for Atlas' accelerated lab located in Mount Prospect, Illinois.

Karen will be responsible for providing quotations and answering questions related to all accelerated laboratory testing, including xenon, UV fluorescent, carbon-arc, and corrosion testing.

Karen has been with Atlas for over 12 years. She served in a dual capacity as Administrative Assistant in the Technical Service Department and the Atlas Custom Systems (ACS) Division before moving into her current role. In addition to her new position, Karen will continue to support ACS.

For information on our accelerated testing services or to receive a quote for accelerated laboratory testing, please contact Karen Dellaria at [karen.dellaria@ametek.com](mailto:karen.dellaria@ametek.com) or +1-773-289-5796. ■



## ASTM Committee G03 Celebrates 50 Years

ASTM Committee G03 on Weathering and Durability celebrated its 50th anniversary at the June 2015 Committee Week, held in Fort Lauderdale, Florida. As stated in the committee's scope, ASTM G03 is responsible for "the promotion of knowledge, simulation or research, and the development of standards related to the durability and performance of organic and inorganic materials, components and combined assemblies that are subjected to various environments."

The committee generates the primary accelerated and natural weathering standards referenced not only by other ASTM material specifications, but also by countless standards developed by other industry groups. The standards and practices it develops provide general guidance on performing tests both outdoors and in laboratory weathering devices, as well as on proper

calibration, maintenance, and handling of weathering samples.

ASTM G03 and Atlas have been partners in the development of weathering standards since the committee was formed in 1965. Atlas has shown its support through continuous membership for 50 years, and various Atlas associates have served on the committee — as chairman, vice chairman, and secretary — and also chaired numerous sub-committees. Coincidentally, as ASTM G03 celebrates its 50th anniversary in 2015, Atlas celebrates its 100th anniversary.

Atlas congratulates ASTM Committee G03 for successful leadership and standards development in the weathering industry, and looks forward to many more years of continued partnership!

## Dr. Norma Searle Receives ASTM G03 Warren D. Ketola Award

Dr. Norma Searle, a longtime Atlas partner in standards development and presenter at numerous Atlas-sponsored symposia, was recently awarded the first-ever ASTM G03 Warren D. Ketola Award.

Named for weathering pioneer Warren Ketola, the award honors a professional who exemplifies the following criteria: promotion of weathering and durability standards based on sound technical principles and research, commitment to the development of practical standards written in clear and concise language so as to be understandable and useful to the typical user, and recognition of ASTM standards within international standards writing organizations.

Dr. Searle's commitment to these principles is demonstrated by her continued membership in over 60 ASTM committees and subcommittees. The award citation sums up her contributions to the industry:

*The advances in weathering as a hard science over the last 20 years are due in no small part to Norma Searle. She was an early champion of using fundamental chemical principles to understand degradation of materials. Norma worked closely with Warren Ketola within ASTM and although they did not always agree, they shared a vision and passion for applying scientific knowledge to understand weathering effects and then apply that understanding to solve industrial problems.*

Atlas congratulates Dr. Norma Searle for her award and for her dedication to the advancement of weathering technology.



*Dr. Norma Searle (center) with Selection Committee Chair David Burns (left) and G03 Chairman Joe S. Robbins III*

## Oscar Cordo Re-Elected to ASTM Committee G03

Officer elections for ASTM Committee G03 on Weathering and Durability were recently held, and Oscar Cordo, Manager of Technical Standards at Atlas, was elected for a third term as vice chairman. Oscar is also chairman of sub-committees G03.01 (Joint Weathering Projects) and G03.92 (Terminology) and is a past secretary to the committee. He is also a member of numerous other ASTM and other industry committees, and serves in the U.S. delegations to ISO/TC 35 (Coatings) and ISO/TC 61 (Plastics). ■

## Atlas Corporate Offices

### Headquarters

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« NEW  
ADDRESS

### Asian Offices

#### Ametek Commerical Enterprise (Shanghai) Co., Ltd.

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