



TITLE 24 - HOW IT AFFECTS ROOFING

New Title 24 Standards are being enforced this year and can drastically impact your plans for roofing replacement or repair. The new Standards now apply to residential roofs as well as commercial and industrial structures. In some cases it may increase the cost of roof repair or replacement by up to 40%.



Roofing Replacement

The 2008 rulemaking process has been completed. The California Energy Commission (CEC) adopted the 2008 Standards on April 23, 2008, and the Building

Standards Commission approved them for publication on September 11, 2008. The new Standards will be in effect as of January 1, 2010.

Save Money - Pull A Permit

The requirement for when the 2008 Standards must be followed is dependent on when the application for the building permit is submitted. Permits pulled until December 31, 2009 are not subject to the increased regulations of the new Title 24 Standards.

If you have a roof repair or replacement planned in the near future, you may want to consider pulling a permit prior to January 1, 2010. Securing a permit will grandfather your roof for the duration of

the permit so that it does not need to be engineered with the increased R values.

Changes to Reflective Requirements for Roofs

Effective January 1, 2010, revisions to Title 24 will encompass additional roof types, including:

- Non-Residential - Steep Slope
- High-Rise and Hotel / Motel - Low and Steep Slope
- Residential - Low and Steep Slope
- Relocatable Buildings - Low and Steep Slope (all zones)

Registered historical structures and several types of institutions (hospitals, detention and skilled nursing facilities), along with Federally-owned buildings are exempt from these requirements.

The new roof requirements include increased solar reflectance, adjusted roofing product density by climate ones and a higher minimum thermal emittance. These reflective requirements restrict the

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PRINCIPAL'S NOTE



Karim Allana
Senior Principal

Welcome to the first issue of The ABB Bulletin - Building Envelope News. We hope to deliver you a sampling of industry buzz and keep you updated on our activities, accomplishments and news.

The company began in 1987 as Roofing Services and Consultants. Two name changes and 18 years later, Allana Buick & Bers, Inc. (ABB) was established in 2005.

In the last 22 years, ABB has become one of the largest and most renowned building envelope consulting firms in the nation.

Our feature article goes back to the roots of our company, in that it will have a profound affect on roofs. The new changes to Title 24 effective January 1, 2010 can potentially increase the cost of re-roofing most types of buildings in California. While this presently concerns only California, it is likely that other states will eventually move towards a higher level of energy efficiency building requirements.

The other article in this issue covers construction defects, specifically with regard to exterior wall failure. This is a topic that I have spoken about at length throughout my career. ABB has some of the most highly-skilled forensic architects and engineers who provide their expertise in determining the source and cause of wall failure.

I hope that you find this newsletter informative. Please don't hesitate to get in touch with any of us at ABB with your comments or questions.

ABB HELPING HANDS

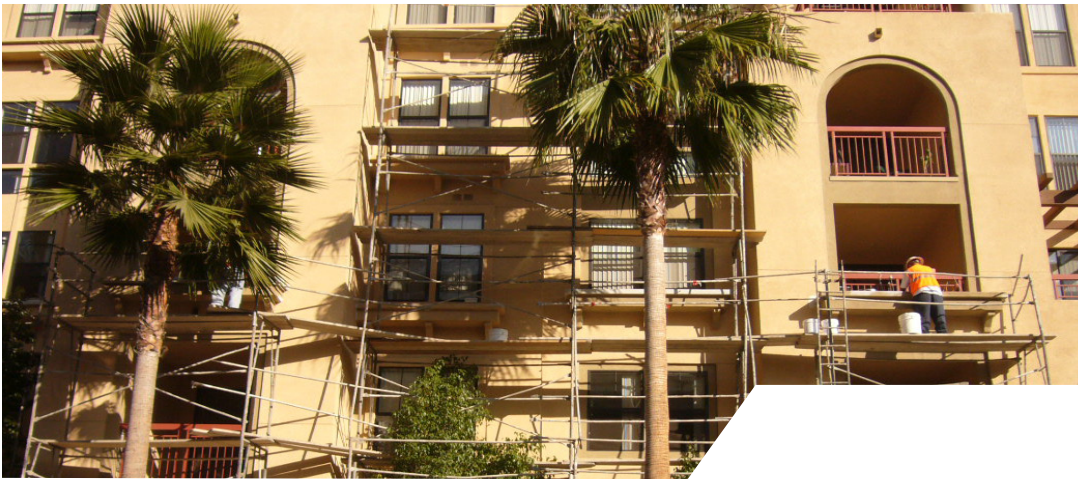
HABITAT FOR HUMANITY Honolulu, Hawaii



A big Mahalo goes out to ABB Hawai'i for their participation in Habitat for Humanity. It was a great success and the Ha'o Ohana was very appreciative of our hard work on their future hale.

As someone who is lucky enough to call Hawaii home and fortunate to live in such a paradise, I was pleased to see ABB Employees giving back. It was a privilege to help those less fortunate and work hard to improve their lives. ABB's goal is to participate annually with Habitat for Humanity and to continue learning and growing.

- Dana Bergeman, Principal



CONSTRUCTION DEFECTS

ABB has specialized in Construction Defect expertise for more than 20 years. Our history of forensic roofing, exterior wall, waterproofing, building envelope, structural and mechanical engineering services based on real world experience is primarily gained from repairing failed buildings. We offer our knowledge as a resource to owners, designers and builders so that they can deliver a high-quality project to end-users.

Determining causes of exterior wall failure is often not a simple task. Seemingly simple items like excessive cracking and leaks in a stucco wall assembly could be a result of walls having:

- too much structural flexibility
- improper curing of stucco
- improper embedment or attachment of lath
- improper placement of expansion and control joints
- lack of story drift joints
- improper stucco mix design
- improper flashing and building paper integration
- improperly installed or wrong type of window
- improper placement of vapor retarders
- or a combination of these defects

Therefore, proper analysis of stucco defects often requires expertise in structural engineering, petrographic analysis, waterproofing expertise, stucco

trade experience, window expertise, sheet metal expertise and general construction knowledge.

Similarly, below grade waterproofing failure can result from use of:

- the wrong type of material
- improper use of shotcrete, type of shoring method, soil mechanics and perched water table
- foundation drainage issues
- improper integration with wall and slab waterproofing
- improperly installed flashing
- other trade damage and other causes.

Seemingly simple failures involve complex analysis to understand the mode of failure and define culpability.

ABB's team approach to forensically studying and analyzing failures involves combining in-house expertise in all aspects of engineering, architecture, roofing, waterproofing, other trade experience and construction management.

You might call it a living roof, an eco-roof, or even a rooftop garden; in every case it's a roof that has been planted with vegetation. The roof is typically covered with a layer of waterproofing material, then with soil or another planting medium, and planted with grasses, flowers, groundcover, or even shrubs and trees. More at: abbae.com/garden_roof.html



ABB FACTOID
garden roof

ABB TECH UPDATE

TROXLER GAUGES

Measuring Moisture

A Troxler nuclear moisture gauge is a non-destructive method that ABB uses to locate moisture in construction materials.

The gauge uses a small radioactive source (Americium 241 mixed with



Beryllium) to produce neutrons at a known rate. The neutrons slow down when they hit hydrogen and the gauge detects the backscatter of these slowed neutrons. The number of backscattered slow neutrons is directly proportional to the volume of water in construction materials directly under the gauge.

The method is considered non-destructive, since it's not necessary to take a physical sample of the construction material back to the laboratory to determine its moisture content. The gauge gives us a relative indication of how much water is in the roof or wall. If we need better precision than "wet" or "dry" we can correlate the Troxler gauge reading with laboratory-verified moisture content then extrapolate the actual moisture content of thousands of test locations from just 2 similar laboratory test samples. Since the Troxler gauge contains a small radioactive source ABB must be fully licensed by both the Federal and State government to own, store and operate this equipment.

Roof Maintenance Don't Wait For Failure

The current trend in buildings is sustainability. Perhaps the most cost-effective measure of sustainability is making buildings last longer. This involves designing and constructing long life-cycle systems and materials and proper maintenance. Here are key points to remember for your roof systems maintenance:

- Know what you have. Gather and organize roof related drawings, specifications, As Built documents, warranties, etc.
- Develop a preventive maintenance plan that includes annual inspections.
- Be cognizant of how other building systems (like HVAC) can effect the health of your roof.
- Know the cost benefit of repair vs. replacement. There will come a time when no amount of repair will cost effectively extend the life of the roof. Replacement will be the better option.

Can roofs last 40 years? Yes if properly designed, installed and maintained. Call us at **ABB** if you have questions about roof maintenance and setting up a life span maintenance program for your roof.

TITLE 24 *Continued from page 1*

amount of heat that the roofs will absorb, and therefore lowering peak-time energy usage. Other benefits include a decrease in urban heat build-up, raising the area's inversion layer of air and a reduction in smog concentration.

The goal of the CEC is to reduce energy demand, particularly mid-day usage of air-conditioning during the warmer months. Energy consumption on those days typically sees a 30% increase. The

new roof standards requiring a 'cool' roof have been put in place in an effort to reach energy reduction goals. A cool roof absorbs less heat, keeps buildings cooler, and cuts down on the need for air conditioning, sometimes up to 40%. The product density and thermal emittance requirements vary depending on the geographic region of the state.

Link

Check out: [HTTP://WWW.ENERGY.CA.GOV/TITLE24/](http://www.energy.ca.gov/title24/)

History: Title 24 – 1978 to 2005

California's Energy Efficiency Standards are set forth in the California Code of Regulations, Title 24, commonly referred to as 'Title 24'. The California Energy Commission (CEC) initially adopted a uniform set of standards in 1978 with the goal of reducing state-wide energy use. From 1978 through 2005 California grew to 36 million people, the most populous in the US. In those 27 years, our per capita energy usage remained level while other states' energy consumption

grew as much as 50%. The state's early recognition of the importance of energy efficiency has resulted in California being a leading voice in energy reduction.

The CEC approved a major overhaul of Title 24 in 2005 that mandated even higher building standards. A key element of the updated version required stricter standards for low-slope, non-residential roofs (both new construction and addition/alteration/repairs).

ABOUT ABB

Allana Buick & Bers, Inc. (ABB) is determined to provide the most comprehensive and innovative consulting services with award-winning expertise in roofing, waterproofing and building envelope solutions. ABB is customer-focused, providing expert advice using cutting-edge technologies for time-enduring solutions. This publication is published several times a year. For more information, call (800) 378-3405 or email bd@abbae.com.

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