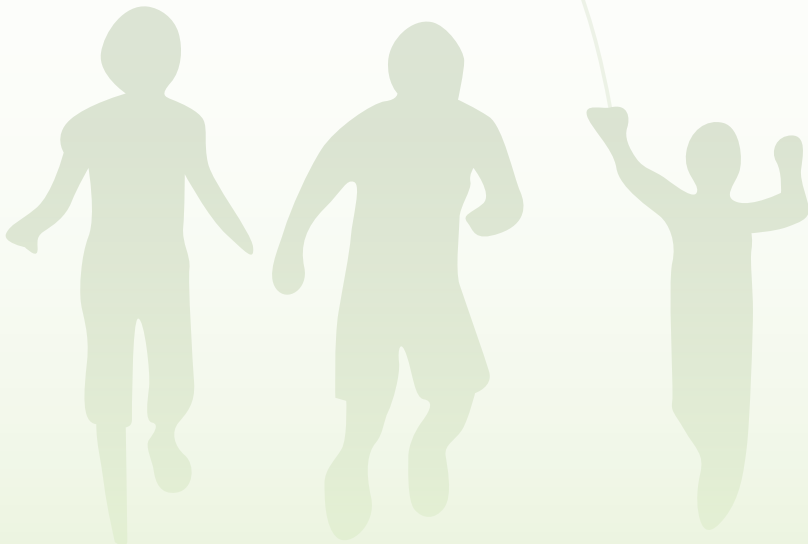


Environmental Focus



Our Policy & Initiative



Armstrong has a history of **environmental stewardship**. Armstrong is the founding member of the United States Green Building Council (USGBC). More recently we introduced the Armstrong Ceiling Recycling Program that has recycled more than 70 million square feet of material that otherwise would have gone into landfills.

We are broadening our environmental stewardship efforts in four areas – **energy and greenhouse gases, water, and forest management**. These are the areas in which our company has a significant impact.

Our ceiling operations are water-intensive and use a significant amount of energy. We are measuring our impact on the environment in the four focus areas, using 2006 as our baseline year for measuring progress towards meeting our improvement goals.

Our policy on the environment

- To exercise care in the selection and use of energy and raw materials;
- To provide for environmental safety in our workplaces and communities;
- To be prepared for emergencies and to act promptly and responsibly to protect people and the environment;
- To ensure all products conform to safety, environmental and quality standards;
- To reduce waste and embrace recycling in all our operations, and to dispose of waste materials in an environmentally responsible manner.

We are systematically reducing our environmental footprint and providing products and services that enable our customers to reduce the environmental impact of the buildings they create.



Commercial Ceilings Sustainable Performance

Lifecycle Assessment

As a **global leader** in the Building Materials industry, the Armstrong ceiling, suspension and wall portfolio is designed to reduce the environmental impact of the buildings you create. Throughout the life cycle of our products, we incorporate many sustainable features.

A perfect illustration of Armstrong's product stewardship is how our ceiling products go through a **completely environmentally-sound life cycle**.

From **product design**, **material feedstock**, **manufacturing** to **transportation**, **reclamation** and **recycling**, a comprehensive product lifecycle assessment is applied to all products at every stage, covering raw materials, product in use, production and distribution, all the way up to their end of life.



Recycled content

Ceilings are one of the few interior finishes that are **100% recyclable**, providing an opportunity to be returned at the end of their useful life through our closed-loop process.

Armstrong Ceilings contain **up to 82% recycled content**. Our portfolio contains hundreds of ceilings with recycled content ranging from 23% to 82% with the maintenance and durability features your projects require.

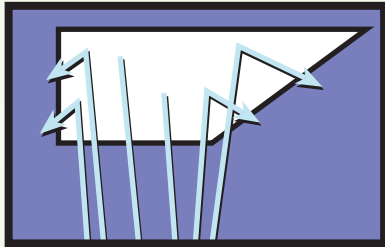
All Armstrong suspension systems contain 30% recycled content, with the highest percentage of post consumer content in the industry (23%).



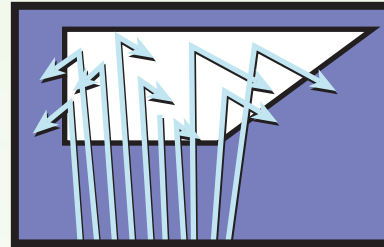
Commercial Ceilings Sustainable Performance

Energy costs

High light reflectance ceilings enhance the benefits of indirect lighting by improving overall lighting uniformity, returning up to 90% of the light back into the space, compared to 75% with standard ceilings.



Typical acoustical ceiling (LR 0.75) reflects just 75% of the light striking its surface



High LR ceilings are engineered to reflect up to 90% of the light striking their surface

High Light Reflectance ceilings can provide:

- 23% reduction in lighting energy at same light level
- 7% savings in cooling system energy
- Increased occupant satisfaction and productivity
- Ability to contribute to LEED credits
- Secure tax credits for energy-efficient design

Acoustics

Noise is the leading source of workplace dissatisfaction.

For Office Environments - Distracting noise can adversely affect the performance of workers, especially those in open plan environments. A balanced acoustical design and the proper selection of interior systems and materials is the key in helping to **keep noise levels down and private conversations private.**

A LEED Innovation Credit for Acoustics can be submitted demonstrating that the acoustical performance improvements of a building clearly enhance the indoor environment in ways consistent with the preservation of human health and maximization of occupant productivity. They are evaluated on a case-by-case basis.



Indoor Environmental Quality

Armstrong is continually engaged in research and development efforts to minimise the impact on air quality of our products. Armstrong Ceilings offers the widest selection of acoustical ceilings that satisfy stringent indoor environmental quality requirements for formaldehyde and VOC emissions.

Increased attention is being given to green buildings and sustainable design, especially as it pertains to the quality of the indoor environment and the presence of Volatile Organic Compounds (VOC's) within it.

Many of our mineral fiber acoustical ceilings have **no-added formaldehyde**. All other Armstrong ceilings are classified as **low formaldehyde**.

Humidity Resistance

All HumiGuard Plus & HumiGuard Max products, are Guaranteed for 10 years.

Ceiling installations are facing more and more demanding humidity conditions such as fast track programs, buildings with a high concentration of people, structures which are open to the exterior environment, etc.

For these situations, Armstrong offers a wide range of humidity resistant products up to 95% & 99% RH. For areas that are subject to extreme temperatures, Armstrong proposes 100% RH Ceramaguard products.



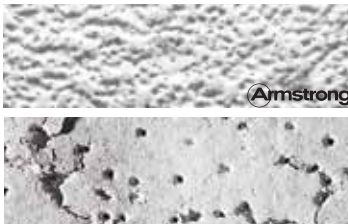
Commercial Ceilings Sustainable Performance

Abuse Resistance

A high durability ceiling has a longer life cycle and allows for greater flexibility for facilities when spaces are re-purposed.

Ceiling systems which are more durable and damage-resistant, in addition to those that have various levels of cleanability, minimize the need for frequent replacement and disposal.

IMPACT RESISTANCE

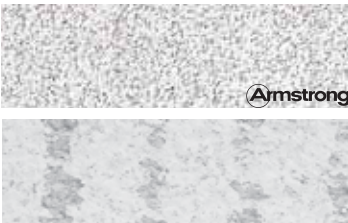


Falling Ball Impact Test (Modified ASTM D 1037 Procedure)

Ceilings in areas like school corridors or gymnasiums need to withstand abuse, including surface impact. The Falling Ball Impact Test evaluates a ceiling's impact resistance.

(left: These photos show the excellent impact resistance of MINATUFF versus a less impact-resistant ceiling.)

SCRATCH RESISTANCE



Hess Rake Test

In any areas where lay-in ceiling panels frequently need to be removed for plenum access, surface scratch resistance is highly desirable. The Hess Rake Test evaluates surface scratch resistance.

(left: These photos show the excellent scratch resistance of Ultima (with its DuraBrite surface) versus a competitive fine texture ceiling.)

FREQUENT PLENUM ACCESS



Minimize Damage

Downward access for Vector™ panels minimizes panel damage from hanger wires and other obstructions.

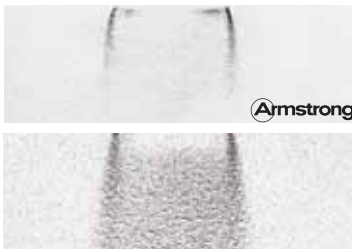


Cleanability



Simulated Supply Air Diffuser Soiling Test

SOIL RESISTANCE



Dirt accumulation not only detracts from a ceiling's appearance, but can cost money by requiring painting or replacement of the ceiling. In addition to reducing acoustical efficiency, soiling can cause a substantial reduction in light reflectance. Most Armstrong Hi-LR ceilings provide excellent soil resistance for lasting value and performance.

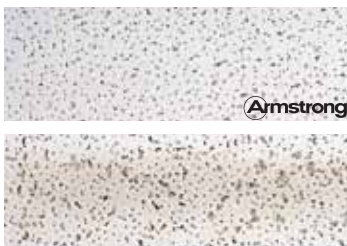
The Simulated Supply Air Diffuser Soiling Test evaluates this soil-resistant property.

(left: These photos show the excellent soil resistance of Ultima versus a competitive fine texture ceiling.)



Washability Test (ASTM D 4828)

WASHABILITY



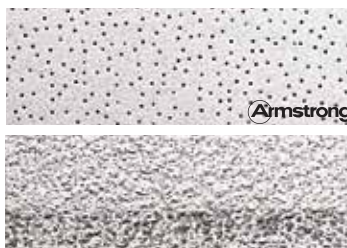
Ceilings installed in laboratories, clean rooms, food preparation areas, and other sanitary applications are required to meet washability standards. The Washability Test evaluates a ceiling's ability to withstand washing.

(left: These photos show the superior washability of Fine Fissured with VPO versus a standard ceiling.)



Scrubability Test (ASTM D 2486)

SCRUBBABILITY



Ceilings installed in laboratories, clean rooms and food preparation areas are required to meet scrubability standards and, sometimes, other specific criteria. The Scrubbability test evaluates a ceiling's ability to withstand scrubbing.

(left: These photos show the excellent scrubability of VL versus a less scrubable ceiling.)



Armstrong Awards and Certifications



Founding member of U.S. Green Building Council



Member of Green Building Council Australia



Founding Member of Indian Green Building Council



Singapore Green Label, Singapore Environmental Council



GECA (Good Environment Choice Australia)



China Green Product Certificate



ISO 14001 Environmental Management System, Australia



ISO 14001 Environmental Management System, Sweden



ISO 14001 Environmental Management System, German



EMAS Environmental Management System, Sweden



German Technical Inspectorates Environmental Seal



'Blue Angel' German Environmental Certificate



Armstrong Headquarters receives LEED-ED PLATINUM CERTIFICATION



Armstrong Headquarters earned Energy Star Distinction



Certified Green Power Partner of U.S. Environmental Protection Agency (EPA)



Gifford Pinchot Award Partnership with the Hardwood Forestry Fund



FloorScore Certification, Founding Member



Corporate Sponsor at the highest level of Tropical Forest Foundation



Greenhouse Challenge Plus Award



Keep Australia Beautiful



Finalist - SaveWater Awards



Vinyl Council of Australia Accreditation



Inductee - Victorian Manufacturing Hall of Fame 2008



Gold Accredited, WasteWise Facility - Sustainability Victoria



Manufacturing Accreditations

Armstrong's corporate policy includes an ongoing commitment to improving its environmental responsibilities by starting with a comprehensive safety & quality management policy and continuing through into the environmental.

- Armstrong has manufacturing facilities around the world certified to ISO9001 and ISO14001.
- Armstrong's Corporate HQ in the USA has been awarded the U.S. Green Building Council's "Platinum Certification" under the LEED-ED rating system. Armstrong is a founding member of the USGBC.
- In the UK, Armstrong has been awarded the BRS's "A-Rating" in the Green Guide to Specification. Armstrong has achieved the highest LCA specification, compliant with ISO14041.
- Armstrong Shanghai China Ceiling plant has attained ISO 9001 Quality Management System & ISO 14001 Environmental Management System.



Armstrong Ceiling Systems LEED Credit Summary

CATEGORY	LEED – NC & CI CREDITS	DESCRIPTION
<p>Energy And Atmosphere</p>	<p>EA Credit 1: Optimize Energy Performance</p> <p>Intent: Achieve increasing levels of energy performance above the baseline standard to reduce environmental and economic impacts associated with excessive energy use.</p>	<p>To aid in reducing lighting power density which lowers energy and maintenance costs, Armstrong High Light Reflectance ceilings and systems provide the same level of illuminance with fewer luminaires. This will assist in reducing lighting and HVAC energy costs up to 25% in new or existing building structures where a High Light Reflectance ceiling is installed along with indirect lighting. Also steps to reduce the number of fixtures and reduce the wattage of lamps should be taken.</p> <p>The number of LEED credits awarded for such improvements are different for new and existing building structures.</p>
	<p>Material And Resources</p>	<p>MR Credit 2.1, 2.2 – CONSTRUCTION WASTE MANAGEMENT – Divert 50% & 75% from disposal</p> <p>Intent: Divert construction, demolition, and land clearing debris from disposal in landfill and incinerators. Redirect recovered resources back to the manufacturing process. Redirect reusable materials to the appropriate sites.</p>
<p>MR Credit 4.1, 4.2 – RECYCLED CONTENT (10% & 20% post-consumer + 1/2 pre-consumer)</p> <p>Intent: Increase the demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.</p>		<p>Armstrong ceiling products contain 23% – 83% recycled content. Armstrong suspension systems contain 30% recycled content – 23% post-consumer, 7% pre-consumer.</p> <p>Armstrong products must be aggregated with all other recycled content materials in order to achieve this credit. Innovation credits are available for higher levels of recycled content used on LEED projects.</p>



CATEGORY	LEED – NC & CI CREDITS	DESCRIPTION
<p>Material And Resources (...cont.)</p>	<p>MR Credit 6.0 – RAPIDLY RENEWABLE MATERIALS</p> <p>Intent: Reduce the use and depletion of finite raw materials and long-cycle renewable materials by replacing them with rapidly renewable materials.</p>	<p>Mineral fiber panels contain cornstarch binders, biobased alternatives to petroleum based binders. Contact Armstrong Representative for percent in specific products.</p>
<p>Indoor Environmental Quality</p>	<p>EQ Credit 4.1 to 4.5 – LOW EMITTING MATERIALS</p> <p>Intent: Reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.</p>	<p>Many of our products do meet the State of Washington, and California Section 01350 requirements for low emissions. For additional information, refer to “The Basics of Formaldehyde & Interior Spaces” CS-3550.</p> <p>Low emitting products can be used as a possible innovation credit.</p>
	<p>EQ Credit 8.1, 8.2 – DAYLIGHT AND VIEWS</p> <p>Intent: Provide the occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.</p>	<p>Armstrong Hi-LR ceilings can aid in extending daylighting into the space. A typical acoustical ceiling reflects just 75% of the light striking the surface, while a high light reflectance ceiling is engineered to reflect up to 90% of the light striking the surface. Recent independent studies have shown a 10-15% daylighting effectiveness increase. A separate study concluded that a Hi-LR ceiling could achieve the LEED credit with up to 12% less glazing than with a standard ceiling with a light reflection 75%. Factor Hi-LR ceilings into your daylight simulation model.</p>





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