

Knowledge Series - Part 3 of 3

Performance by Design

An extract from the 300-page Reference Guide releasing January 2018

Anutone Update ends a successful 2017 with a 3-part Knowledge Series on how the design of acoustical drywalls | ceilings | panelling must be primarily based on functional performance requirements of enclosed spaces apart from other secondary considerations. There are nine functional performance parameters (other than Acoustics) and we will elaborate on three in each part as below:

Part 1

- Life Safety - Fire
- Life Safety - Siesmic
- Impact Resistance

Part 2 (previous edition)

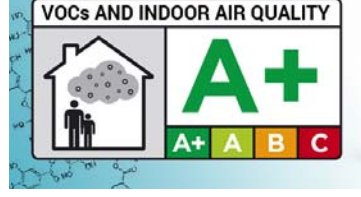
- Climate Control - Thermal | Humidity
- Climate Control - Hygiene
- Lighting

Part 3 (this edition)

- Indoor Air Quality
- Maintainability
- Environment - Green

Indoor Air Quality

Most built environment in India is increasingly air-conditioned which makes Indoor Air Quality (IAQ) of paramount importance. Whether workers at an office or shoppers in a mall or guests in a hotel or patients in a hospital, people are spending 12 hours or more in spaces



that are sealed from the outside environment. Air pollution always refers to the external and concerns us all the most, but indoor air pollution and its mitigation should receive

equal if not more attention as it too gets pretty polluted. Formaldehyde emission and its concentration is one of the main indoor pollutants, being present in most building materials and furniture. Being a Volatile Organic Compound (VOC) it vapourises at normal room temperatures. It can cause nose and eyes burning, running, headaches, coughing, wheezing etc.



Formaldehyde emissions can be controlled by

- Use of products with low VOC content
- Acclimatising factory products to site conditions in a well ventilated area by removing packing so they bleed higher levels of formaldehyde initially days
- Adequate ventilation of HVAC spaces with a high air exchange rate that includes fresh air bleed to the supply ducts apart from return air circulation as per guidelines enshrined in ASHRAE Standard 62 and UBC Chapter 12 Title 21 Section 121
- Close regulation of temperature and humidity as higher of either or both of these triggers higher formaldehyde emissions latent in the interior contents.



Most Anutone products are either zero VOC in their unpainted state like

- Pixel Taper
- Mat
- Strand
- Septum
- Tufbloc
- Tufbloc Wud
- Tufbloc Square

or low VOC once painted like

- Astral Series
- Mat Solo
- Strand Colour
- Strand Wave Colour

or low VOC when surface-finished like

- Pixel Smery
- Pixel Square
- Slate Vin
- Soak Cord
- Soak Plane
- Tufbloc Vin



A VOC free habitat with zero VOC products is the goal of A+ rated IAQ interiors

Maintainability

Scratch Resistance

Surface scratch resistance is determined by the Hess Rake Test for ceiling tiles that need to be often removed for plenum access. Shims of spring steel are dragged across the surface of the ceiling tile with increasing force till scratches appear.

Anutone scratch resistant tiles and panels include:

- Sisoli Savana
- Subtex Nubby
- Mat Series
- Strand Series

Soiling Resistance

Soil resistance is the ability of a ceiling | panelling to attract ambient dust. Dust is ushered in by HVAC or open doors | windows or even footwear.

Soiling is a negative for the ceiling's | panelling's aesthetics, acoustics and light reflectance. Usually surface products that sport high light reflectance (Hi-LR) are also the most resistant to soiling.

Cleanability

Anutone acoustical drywalls, ceilings and panelling can be easily cleaned by dry-wipe or best is to vacuum.



Some can be damp-wiped like:

- Subtex Nubby
- Pixel Smery
- Pixel Square
- Slate Vin
- Astral Series
- Spots MP
- Sonator
- Mat Series
- Strand Series
- Tufbloc Series



Scrubability

This is a special need for cleanroom applications in

- Food processing
- Biotechnology
- Pharmaceutical
- Healthcare
- Research labs
- Kitchens

The scrubability test as per ASTM D2486 (modified from wall paints) determines the ability of a surface product to withstand upto 150 scrub cycles with a hard bristle brush.

- Sisoli Savana
- Slate Vin
- Subtex Nubby
- Mat Solo
- Pixel Smery
- Tufbloc Vin
- Pixel Square



Washability | Water Repellancy

Where surfaces need to be washed regularly, as in healthcare for infection control, it is important for such surface products to meet the criteria. Resistance to water absorption of a minimum of 20 minutes ensures proper washing and disinfection. Serge Astra Aquila Clip-in fits the bill perfectly for both walls and ceilings and Subtex Wave Nubby for discrete ceilings.



Drycleaning

All acoustical fabrics that are stretched like Stretch SLS | NRC | Hush can be carefully removed from their tracks like Strut SE38 | SE25 | FS25 | FS15 and dry cleaned at commercial laundromats. There is no shrinkage. However there can be some dimensional changes and hence adequate selvage must be retained during initial installation.



LEED | GRIHA ratings

Note: LEED NC is for New Construction and LEED CI is for Commercial Interiors relevant to this Product Guide apart from many other LEED suffixes for other build types.

ASHRAE is American Society of Heating, Refrigeration, Air conditioning Engineers. IESNA is Illuminating Engineering Society of North America.



ENERGY AND ATMOSPHERE

LEED NC need - Show improvement in proposed building performance rating compared to baseline as per ASHRAE/IESNA Standard 90.1-2016

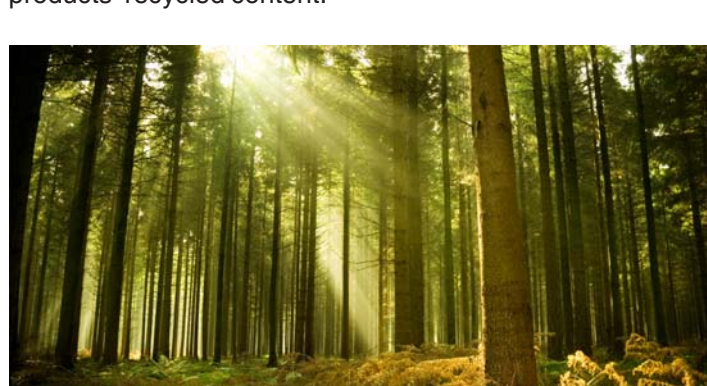
LEED CI need - Reduce connected lighting power density below that allowed by ASHRAE/IESNA Standard 90.1-2016

Anutone fulfils with Hi-LR (High Light Reflectance) drywalls, ceilings and panelling that can either provide the same luminance with lower number of fixtures or same number but with lower wattage. This can reduce lighting load by 10% and HVAC load due to heat of lighting by 10% where uplighting (indirect) is installed. See section on 'Light'.

MATERIAL AND RESOURCES - Recycled Content

LEED need - Use products with recycled content such that sum of the post-consumer recycled content plus half of the post-industrial (pre-consumer) content is minimum 10% or 20% of the total value of the products in the project.

Anutone fulfils the requirement with products that contain an average of 30% recycled content like the Subtex Series. It can range from 10% upto 50%, the latter for Strand Series. To earn this credit there is dependency on other products' recycled content.



Anutone uses rapidly renewable pinewood for Mat, Strand and Tufbloc series

MATERIAL AND RESOURCES - Rapidly Renewable

LEED NC need - Use rapidly renewable building materials (made from plants harvested in ten-years or less) for 2.5% of the total value of all building materials used in the project.

LEED CI need - Same as above but 5% of the total

Anutone fulfils this requirement with wood-based products like Slats Surco, Spots Taladro, Slit Ranurado, Square Cuadrado, Sonator, Mat BSB, Mat Solo, Strand, Strand Wave, Soak Cord, Soak Wave etc

INDOOR ENVIRONMENTAL QUALITY

- Low-emitting Materials



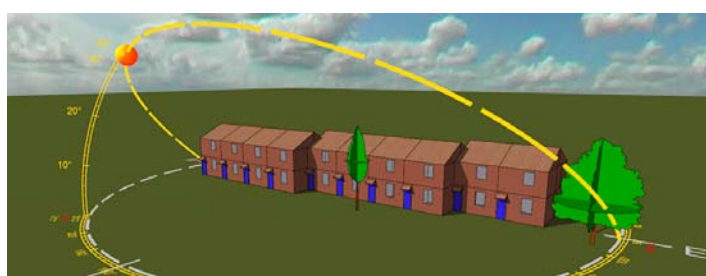
LEED need - Adhesives, sealants, paints, coatings, fabrics, carpets, wood composites must meet the limitations and restrictions imposed for low VOC (Volatile Organic Compounds) by several standards including the very popular Californian South Coast Air Quality Management District (SCAQMD) Rule 1168.

Anutone more than fulfils the requirement with inorganic-binder wood-composites with almost-zero emissions like MatBSB, Mat Solo, Strand, Strand Wave, Tufbloc. Wood-based products like Slats Surco, Spots MP, Sonator are manufactured from E1 base board which is a very low emission grade. Products like Subtex Nubby | Ebony are fully encapsulated to ensure low emissions.



INDOOR ENVIRONMENTAL QUALITY

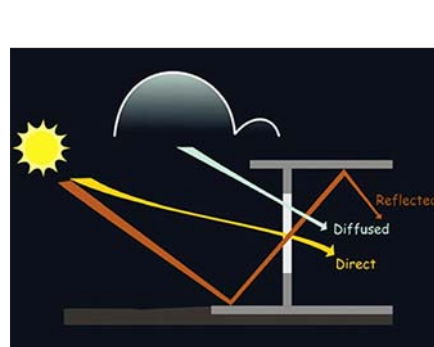
- Daylight and Views



The solar path to maximise sunlight views inside a building with Hi-LR surfaces

LEED need - Achieve minimum glazing factor of 2% in minimum of 75% of all regular occupied spaces OR achieve 25 foot candles of illumination. Also provide daylight redirection and | or glare control devices that result in daylight effectiveness.

Anutone fulfils this with Hi-LR drywalls, ceilings and panelling which provide of LR upto 0.85 which is much higher than the usual 0.75 of normal white or light coloured ceilings and panelling. This roughly translates to a 10% increase in daylight effectiveness and conversely it also means 10% less glazing is needed to achieve the same illumination. See section on 'Light'.



GRIHA Ratings

Criterion 13 - Optimise building design to reduce conventional energy demand - 2 points

Anutone fulfils this with Hi-LR drywalls, ceilings and panelling to prevent overdesign of the lighting systems across all floors of a building (Clause 13.2.3) See section on 'Light'.

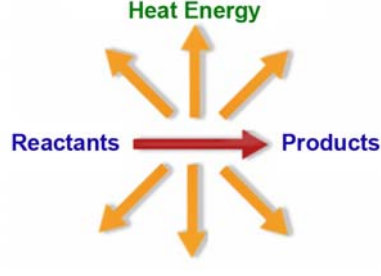
Criterion 17 - Use low energy materials in interiors - 2 points

Anutone fulfils with the Mat, Strand and Tufbloc Series manufactured in India. The manufacturing process is exothermic (heat is exuded) which facilitates curing of the matrix and no external energy is used. These products boast the lowest embodied | embedded energy among all acoustical products.

Moreover, transportation across India is at a much lower energy cost as compared to imported products.

Criterion 29 - Acceptable outdoor and indoor noise levels - 2 points

Anutone fulfils outdoor-indoor noise transmission issues with Tufbloc soundproof drywalls (subject to dependencies) and indoor noise levels with the widest choice of sound absorption products.



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The 300-page Limited Edition Reference Guide from Anutone on Acoustical Walls & Ceilings releases January 2018. For the first time one book has it all that you need to know on the subject. A true treasure trove! Reserve your free advance copy* with the local Anutone representative or write to Shobha at info@anutone.com *eligibility criteria applies



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