

Introducing Building Biology for a healthy living

Carnival launches System solution to Bangladesh from Germany by Remmers Baustofftechnik: for healthy living & assured life relating to construction



Interior coating with an anti-microbial effect on a nano-silver base for areas with high hygiene requirements



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Why should we understand Building Biology: Understanding should be required to prioritize as to make cleaner living every day. The savings:

- to save one self from unwelcoming situations,
- also to benefit one self in terms of comfort & finance (energy save), and
- to save repair & maintenance cost of first large investment of every humans, buildings for home & work.

This savings is just not medical bills, this is about assurance to stay fit in an environment that is most intimate: your living space where you have the most times spent, and the space for your dear ones stay.

Building biology (or Baubiologie as it was coined in Germany)

It is a field of building science that investigates the indoor living environment for a variety of irritants. Building Biology is a holistic approach to the built environment. It is concerned with the interaction between the built environment and the health of the occupants.

Effects of poor building , in short termed as Sick building syndrome (SBS):

Sick building syndrome (SBS) is a combination of different sickness associated with individuals work place and residence. A 1984 World Health Organization report into the syndrome suggested up to 30% of new and remodeled buildings worldwide linked to SBS symptoms (Source: United States Environmental Protection Agency, Retrieved 2009-02-19). With the development pace world wide, the new housing, being quickly built, and unable to properly “air out” provided for an environment where the occupants were the recipients of every volatile organic compound (VOC) emitted from the construction materials. Most of the sick building syndrome is related to poor indoor air quality. Indoor air quality (IAQ) is a term referring to the air quality within and around buildings relates to the health and comfort of building occupants. summary

Indoor air quality (IAQ)

IAQ can be affected by **(1) microbial contaminants (mold, bacteria), (2) gases (including carbon monoxide, radon, volatile organic compounds- VOC), (3) particulates, or any mass or energy stressor** that can induce adverse health conditions. Indoor air is becoming an increasingly more concerning health hazard than outdoor air. Using ventilation to dilute contaminants, filtration, and source control are the primary methods for improving indoor air quality in most buildings.

Vulnerable people of IAQ

The three groups of most sensitive individuals that reap the worst cost are: infants, the elderly, and the immuno-compromised. Some people become environmentally hypersensitive, and although conventional medicine suggests that the problem(s) may be psychological, there is growing acceptance that there is an environmental cause.

Apart from above, during illness of any human of any age, gender, ethnicity, etc. the healing process delays and medication such as usage of steroids, antibiotics etc. pushes health to make demand of using higher dosage or newer generations every next time.

Human sicknesses due to IAQ is termed as Sick Building Syndrome and it's a major factor of poor quality of buildings construction for- home & office.

Construction material and methodology those have Changed for better:

abandoning contemporary concept on impermeability, and the Remmers System

In the 1970s, building construction techniques changed in response to the changing economic realities including the energy crisis. As a result, homes and buildings became more airtight. Also, cheaper materials such as drywall came into common use. The newer building materials reduced the drying potential of the structures making moisture problems more prevalent. This combination of increased moisture and suitable substrates contributed to increased mould growth inside buildings.

100% impermeability is no solution

Sealing the living space from inside of any structure could not bring any solution to the moisture problem and its associated health problems. This means health hazards intensifies with 100% impermeable walls, ceiling and floor of usable space. To maintain building biology, a safe passage for permeable limits in each side (external & internal) of substrates were necessary to find.

Safer passage from either sides

Preventing Water ingress issue had more to do with human health. A tight security from external penetration must have to take care of permeability from internal side to maintain the moisture level. Realizing the most natural phenomenon of permeability up to some degree from both sides can effectively solve the health hygiene issues in living space: be it office, residence, or factory-industries. The degree of permeability depends on the substrate condition and the system solution applied on it.

Protection as our skin does

Just like human skins, product-systems of Remmers applied on building substrate (Concrete, brick, stone, wood) protects the structure yet comforts the occupants without making things 100% sealed as opposed by the modern building code.

Building biology & an extensive approach by Remmers:

In last 60 years, Remmers and the leading scientific researchers had advanced a long way to ensure the market with:

1. A coordinated product system for all that the most inhabitable building structure would requires
2. A craftsmanship customized by Remmers to find optimum level with respect to cost, and actual requirement
3. Product systems having ecological & environmental certification for three (3) stages of building material handlers:
 - a. Material manufacturing process in compliance with EU Environmental Legislation TUV Certification.
 - b. Safe for applicator and wash off disposal, EMAS & Blue Angle label. User level safety, following VOC guidelines, and complying with strict criteria of AgBB (German Committee for the evaluation of Building Products in regard to health).



Remmers systems for healthy living

Conforming VOC level

Remmers Coatings, paints, lacquers, varnishes, etc. for Floor, Wall and wood are within the VOC permissible limits, and test certificates available. Most of product systems are solvent free or water based.

Breathable system

Most Remmers systems are water vapour permissible system, which maintains positive heat and moisture level in the indoor condition.

Stopping Water ingress

From outside as well from inside through plumbing failure, &/ or leaking fresh room, toilet, & kitchen.

Protection for internal leakage

- To stop water penetration from inside, Remmers offers its legendary & reliable **Keisol-Sulfatex system** used in Europe as long as last 60 years.
- For damaged substrate & surface, **Stopaq** to remove seepage, **Injection Resin PUR** for sealing concrete cracks etc.
- Silicate Joint filler **SF 1** for tiles joining, Glass and wood frame Joint sealant: **Multi seal**, or **Flexi seal HM**.

Protection from External side

Basement, all retaining walls, and roof are protected by suitable product systems

Basic waterproofing

Basement:

Plasticizer in casting concrete, general waterproofing system (Keisol-Sulfatex)

Retaining walls:

- Keisol-Sulfatex system applied to the exposed side of the wall
- Hydrophobic treatment, **Funcosil Series** from exposed side of the wall.

Roof:

Solutan Systems of liquid roofing, or Modified waterproofing system.

Coatings on Wall

Internal wall:

Remmers Mould Paints for high hygiene requirement in indoors space.

- Paints to remove germ & bacterial growth through its nano silver particles.
- Water vapor permeable, washable, high abrasion resistance
- High durability

External Wall:

Silicone Resin Paint LA

- Self-cleaning paint, with low dirt pickup.
- Water vapor permeable, and VOC Certified
- Does **not darken** when **wet**
- No water & Moisture penetration,

Resin Flooring: Convinient Floor Top

Floor being seamless beauty and impremeable, they are called hygienic floor system which are mandatory for Pharmaceutical, food processing industries, and hospitals, cleanincs etc. Easier Cleaning and maintaining. Remmers resin-flooring system can be redecorated after a certain interval with minimum cost of the top layer only

Remmers has perhaps the widest variety of floorings on hygienic aspects. Complete bacteria elimination in Remmers flooring system meets strictest European hygiene criteria. System tested by renowned Dr Wesslling Institute (www.wessling.de) as per the criterion set by AgBB.

Wood: Wood Protection products for outdoor use wooden furniture, & home. Protects UV, Moisture, insects, algae, Fungi, Mould, & Blue stains. Additionally these would strengthen the wood.

All topcoats, & wood refinement products are EN 71/3 (toy safe) Certified, or Blue Angle labeled.