



A Better Way to Build

RASTRA is the ultimate building solution for economical and environmentally-friendly construction. RASTRA is the solution for this century to build environmentally conscious, energy efficient buildings that provide a safe and healthy living environment. **Over 9 million units in service worldwide.**

Applications

The strength and flexibility of RASTRA make it the ideal building solution for single family walls & basements, multi-family, enclosed patio rooms and commercial buildings.

As a general rule, any common finish can be applied to RASTRA panels to achieve any desired appearance.

Interior – Drywall, plaster, stucco, tile, stone and paneling can be applied directly to RASTRA.

Exterior - RASTRA is suitable for a wide range of exterior finishes including any type of siding, stone, brick or stucco.

Energy Efficient

In the past buildings were built with little emphasis placed on energy conservation, largely because we enjoyed low oil prices. These are different times, and with unprecedented increases in energy costs, improving insulating efficiency is a financial decision that pays dividends for the life of the property.

An industry study concluded that ICF walls typically require 44% less energy to heat the building and 32% less to keep it cool compared to wood frame buildings.

RASTRA's superior thermal performance and air tightness greatly reduces heat loss and lowers energy consumption. By increasing the Effective U-value with RASTRA, HVAC equipment operates less often, reducing energy costs. Because less moisture filled air penetrates exterior walls, air conditioners don't work as hard to remove humidity from the air. Heat loss from hot water pipes is also reduced.

Fire Protection

RASTRA's superior 4-hour+ fire rating helps protect from the devastating loss caused by fire. When an independent testing lab exposed a full scale RASTRA wall to constant 2000° F (1200°C) flames for 5 hours, the opposite side of the panel the temperature rose only 7° F (4°C) with no flame spread or smoke.



Strength

Superior strength is expected from a wall system made of steel reinforced concrete over one made of wood. The impressive feature is just *how much* stronger. Dynamic shear tests designed to simulate earthquakes have measured strength up to **700% stronger** than wood frame walls.



Environmentally Friendly

RASTRA is 85% recycled polystyrene, which otherwise would have ended up in landfills never to disintegrate.

RASTRA buildings reduce energy consumption, and with energy savings comes environmental benefits. Specifically, the reduction of fossil fuels burned to create energy. By reducing our energy consumption, we reduce combustion by-products that lead to smog and contribute to global warming. Over the life of a 30-year mortgage, a home built with RASTRA saves our atmosphere 60-90 tons of carbon dioxide (CO₂) emissions. Another measure of sustainability is increased service life. Products that last longer make a large impact on our solid landfills.

RASTRA is an ecological sound building material, consuming recycled raw materials, taking them permanently out of the waste stream and producing a healthy living environment for occupants.

Safety

One of the most important features of any building is its ability to protect human life. RASTRA's steel reinforced concrete walls provide a safe and secure environment. Safety features include:

- :: Highly fire resistant – 4 hour fire rating @2000°F; material will not ignite; produces no toxins, zero flame spread; smoke density of 5 (450 is permissible).
- :: Effective barrier from wind-driven debris.
- :: Earthquake tested up to magnitude level 8 with no structural damage.
- :: Cleaner indoor air quality.

Cost-of-Ownership

RASTRA costs slightly more than traditional building materials. However RASTRA provides savings in several other areas including downsizing to a less expensive HVAC unit, potential tax credits, eliminating membrane and wire mesh on stucco installations, and eliminating the need for an additional vapor barrier.

RASTRA is the least expensive option by far over the life of the property. Heating and cooling costs are reduced by at least 40% each and every year. Maintenance costs are reduced because timber that warps and degenerates is replaced by dimensionally stable RASTRA. HVAC units have a longer service life because it doesn't work as hard or often to maintain environmental settings. RASTRA provides the lowest cost-of-ownership available.

Indoor Air Quality

The unique composition of RASTRA enables better control over indoor air quality. Because RASTRA does not hold or wick water like concrete block or wood, RASTRA will not promote or sustain mold and mildew.

The composition of RASTRA allows a slow interchange of air, which in turn allows the building to "breathe." The exchange is slow enough that it does not allow heat or cold to escape but helps maintain good air quality, preventing "sick building syndrome." This slow exchange of air also prevents condensation that can lead to mold growth.

Comfort

Being in a RASTRA building is a comfortable experience. This results from more consistency in room-to-room temperature & humidity, improved air quality, and a much quieter space.

In an independent survey, owners of 74 new ICF homes and 73 new wood frame homes were asked what features they liked. Over 80% of the ICF owners mentioned the great comfort, compared with 22% of wood frame homeowners.

Insects

Unlike solid polystyrene, the mixture of cement and polystyrene in RASTRA creates an undesirable inert environment for insects. Concrete fills the interior channels and pores of the surface, thereby eliminating channels that termites and other insects could use for migration and nesting.

Maintenance

Traditional wood frame construction is prone to decay and insects caused by moisture which deteriorates wood. As lumber ages it shrinks and warps. Over time walls loosen and eventually weaken. Gaps begin to appear allowing destructive moisture to gain access. With RASTRA, wood rot is a thing of the past. Most stucco cracks are actually caused by substrate walls moving from lumber changing dimension – this problem is virtually eliminated with RASTRA. RASTRA is dimensionally stable and protects your property by maintaining a more watertight layer of protection that greatly reduces maintenance.

Quiet

RASTRA provides outstanding acoustical performance. The increased mass and density of RASTRA provides a very effective sound barrier, keeping outside noise from penetrating the exterior wall.

Compared to a typical wood frame wall, 75% to 85% less sound passes through a RASTRA wall. Scientists describe loud speech on the opposite side of a RASTRA wall as, "a listener would *strain to hear* loud speech. It is virtually *inaudible*."

In an independent survey, owners of 74 new ICF homes and 73 new wood frame homes were asked what features they liked. Over 60% of ICF homeowners mentioned the quietness of their homes, versus only 2% of the wood frame homeowners.

Interior walls built with RASTRA reduce the movement of airborne sound from one room to another. Privacy is enhanced.

Code Compliance

RASTRA satisfies international codes (for example ICC, EOTA) and production is audited by recognized organizations to meet requirements for commercial and residential applications.