FSC TECH Concrete **Reinforcing** Reinvented

# The Power of REINFORCED BLOCK

## MANY NEW APPLICATIONS FOR BLOCK ARE ENABLED

***Construction of Automated Wall Construction for Housing, Effective Shear Walls for the Structural Upgrade of High-Rise Buildings, Explosion Proof Walls, Retaining Walls, Onshore and Offshore Wind Towers, and Marine Structures are among the many new market opportunities.***

- **A COST-EFFECTIVE TECH, WITH FASTER BLOCK INSTALLATION**

  No Mortar, No Concrete in the cores, No Steel Reinforcement, for a Dry Assembly System bringing a Cleaner Construction Site.

  The system is no longer subject to the adverse effects of steel corrosion and leaves the entire internal cavities to be filled with insulation materials.

- **INDUSTRIALIZATION OF BLOCK WALL CONSTRUCTION** by automatically building Block Wall Panels / Structures either in an offsite factory or on the jobsite. **INSTALLATION IS TAKEN FROM WEEKS TO HOURS**.

- **ALTERNATIVE TO 3D PRINTING** our Solution based on *Concrete Blocks, FSC Tech, and Robotics*, is capable to automate the construction process, providing a dramatic increase in Productivity with a system that has lower material costs.

- **DRASTIC REDUCTION OF $CO_2$ FOOTPRINT** by eliminating the steel reinforcement and mortar joint construction at the job site the system will have a significantly lower $CO_2$ footprint.

## What the FSC Tech brings to the world of concrete products

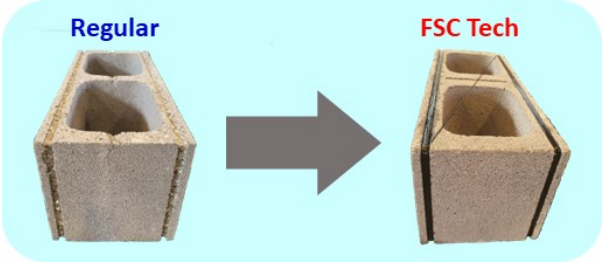
1. **Increased Strength** - a massive increase in flexural strength is provided, not achievable with current technologies.
2. **Reduced Cost** – the FRP system is substantially less costly than traditional steel reinforcement and allows for reduced product thicknesses.
3. **Longer Service Life** – the FRP is corrosion resistant and has higher operating service temperatures than steel.
4. **Drastic Reduction in $CO_2$ footprint** – eliminate steel, reduce concrete sections, replace or reduce OPC with low $CO_2$ binders, enables a large reduction in environmental footprint compared to the current steel reinforced concrete practice.

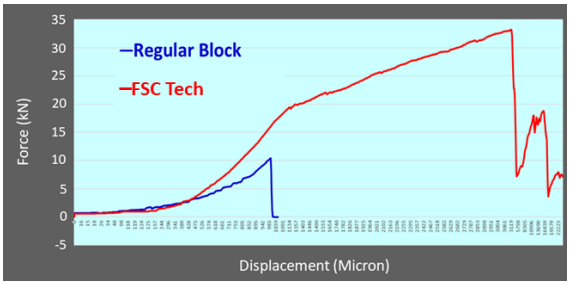
# How the Flexural Strength of a Single Block is Improved

Once cured, Blocks are “wrapped in tension” with FRP (fiber impregnated with resin). This imparts a biaxial post compression, giving the single block a flexural behavior not attainable for current blocks.

This can be done at the production plant as a post-production process, or as a separate activity combined with the wrapping.

The recesses for the FRP on the block are ground in by the wrapping machine.



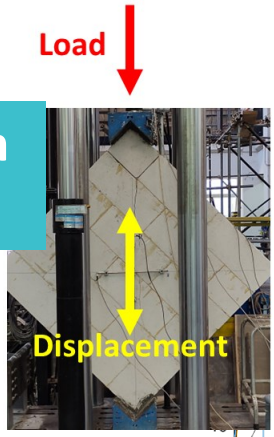

# The NEW Connection System between Blocks

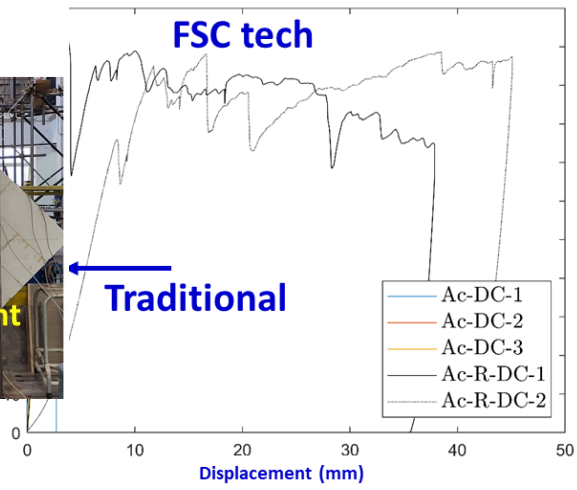
The blocks are connected together by **GLUING THE TENSIONED FIBERS**, using polyurethane, epoxy, or other resin-based glues.

- In this way, the connection between Blocks is no longer limited by **THE TENSILE/SHEAR STRENGTH OF THE CONCRETE/MORTAR**.
- **EACH CONCRETE BLOCK BECOMES THE “FRAME” OF THE FIBER WRAPPING.**
- **THE CONNECTION BETWEEN BLOCKS IS BASED ON FIBER / GLUE ADHESION** and this completely changes the structural behavior of the wall.

# Result is a Block Wall System with Ductile Behavior

The block wall shows a behavior very similar to that of a corresponding steel structure, and eliminates mortar joints, steel rebars, and poured concrete in the block cavities.




## FSC TECHNOLOGIES

FSC is a US company with R&D in Italy. Its core business is to help Customers develop solutions based on its Innovation in Structural Engineering by replacing embedded steel reinforcement with a system of wrapping concrete elements with pretensioned FRP and a small amount of resin.

**FSC Technologies LLC**
4779 Terrasonesta Dr, Davenport FL 33837 USA - tel +1 (321) 355-9523 +1 (705) 207-9990
R&D Branch: via V. Veneto 52, 43046 Rubbiano PR, Italy - tel +39 338 052 5728 +39 333 470 4829
info@fsc-tech.com - www.fsc-tech.com