



Background to the Invention of the ATI-Composite Mineral Foam



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What are we trying to achieve?

- **The Product, the Industry and the Opportunity:**
 - Great interest in new, green methods of construction primarily in residential and commercial buildings
 - In recent years, we have seen a huge increase in the use of **Autoclaved Aerated Concrete (AAC)** in both Europe and North America
 - Need to address Advantages & the Limitations of ACC
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ACC Product Examples

(Commercial & Residential)





Our Motivation:


- The cost of cooling a building can be up to 6 times greater than the heating costs
 - Energy prices are increasing
 - Construction, HVAC, Transportation, etc.
 - Need to develop products that will:
 - decrease heating and cooling costs
 - cut labour in-puts on the job site
 - reduce the time to completion & occupancy
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Benefits:

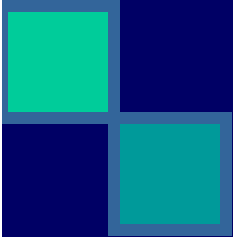



■ The Advantages of AAC ??

- provides improved insulation
 - non-combustible & Fire Resistant
 - provides protection from termites & other pests
 - Established market presence
 - Well known performance criteria means engineering tables are established for easy implementation
 - Less pioneering needed to break into the market.
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Significant Drawbacks.

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- The disadvantages of AAC include the following:
 - Very High Capital Costs (\$26-\$60M)
 - Fixed Location = Increased Transport Cost
 - Limitations on size and shape (autoclave)
 - Lengthy Process Cycle – 12 hours
 - Uses only virgin materials and fresh water.
 - Limited fire resistance rating
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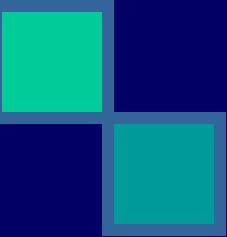



OBJECTIVE: Create a new product w/o ACC limitations

- Lowest possible capitalization
 - Portable Production Facility
 - Continuous throughput (productivity)
 - Flexibility of output size and shape
 - Reduced equipment dwell time
 - Flexibility of Feed Stock – including salt water - without effecting quality
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Outcome & Overview:

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- We have been successful in achieving ALL of the objectives outlined above !
 - Also added a significant “green” element with recycling and/or utilizing waste materials
 - Salt Water + Desert Sand compatibility
 - Adds Significant LEED Appeal
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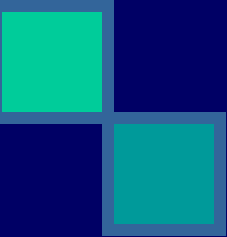



Summary of Results:

- **Capitalization:**
 - Reduced from \$26-60M to \$1.5M (or less) **without the restrictions imposed by the autoclave**
 - **Portable Production Facility**
 - Both portable and/or fixed production units possible
 - **Continuous Throughput**
 - Mineral Foam is blended on a continuous basis as a lightweight slurry flowing at a rate of 10 cubic meters (350 Cu. Ft.) per hour – scaleable for lower volumes.
 - Eliminate batch process – **No Autoclave required**
 - Slurry will set and be ready to handle in less than four (4) hours.
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Summary of Results (cont'd):


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- **Size and Shape:**
 - No limitations except size of the forms
 - **Process Cycle and Productivity**
 - As low as 4 hours Vs. 12 for the AAC.
 - **Feed Stock**
 - Variety of materials from virgin to waste materials, **fresh to salt water** (LEED Credits)
 - Without affecting performance!
 - **Compressive Strength – Range:**
 - 80 to 9,150 PSI compared to 350 to 700 psi for ACC
 - Up to 15X greater than ACC!
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Review

	ACC	ATI
Insulation	✓	✓
Fire Resistant	✓	✓
Termite Resistant	✓	✓
Facility Costs	\$60M	\$1.5M
Portability	X	✓
Continuous Production	X	✓
Size and Shape	Limited	Unlimited
Cycle time	12 hours	4 hours
Feed Stock	Virgin	Various
Compressive Strength (psi)	350 - 700	80 - 9,150




Current Status :

- **The extensive Research & Development work clearly demonstrates that we can:**
 - mass-produce lightweight composite mineral foam products in high volumes cost-effectively
 - Offer many competitive advantages over other similar products in the market today, at lower capital cost.
 - **Demand**
 - Enquires from North America, Middle East, and several developing countries
 - mass producing energy efficient building components from wall panels to mega-blocks
 - increase productivity and offer energy conservation
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Current Funding Participation:

- Growing Forward Research Grant to cover ½ of \$360,000 R&D program for 2009 thru 2010.
 - Awarded a \$50,000 Voucher under the Alberta Innovates Voucher Program for 2010.
 - Placed in the top 5 of the Green 15 Challenge for 2010 – Final Results Still Pending
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Participation Options:

- We have a preliminary design for a highly profitable Portable Production Facility
 - Our immediate objective is to secure participation from industry to bring this product to commercialization.
 - We see a number of possible approaches for those interested in participating in commercializing the products/technology:
 - Local Commercial Licenses, which might include a Portable Production Facility (fixed or mobile)
 - Joint-Venture Proposals – to develop a particular fibre resource or product application.
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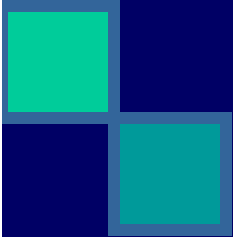


Current Status: IP & other test data - results

- Original Intellectual Property has been patents-pending since 2006 – US Pat No. 7,744,693 B2 will be issued on June 29th, 2010.
 - **Fire Test:** ASTM-E119 “Fire Resistance of a Wall Assembly” run at Intertek in March of 2010 yields a 2-hour rating including Hose Stream based on 1.5 inches of Composite Mineral Foam cast over an EPS & L/W steel stud curtain wall assembly.
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Product Bulletins & Web Site



For more information on the ATI-Composite
Technology, please visit :

WWW.ATI-Composites.com



or call the office at (780) 231-4793